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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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FOUNDED

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

Director Central Exp. Fair
Dec. 31, '17

VOL. LII.

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LONDON, ONTARIO, MARCH 22, 1917.

No. 1278

What does your cream separation service cost you per year?

Remember, you are buying your cream separator for many years, almost a lifetime, of service. At least, that is the case when you buy a Standard. It is well worth any man's while to figure out the average cost of cream separation service per year.

Ask yourself this question: "Which will pay me better (1) to buy an ordinary separator that costs, say, \$55.00, and loses a whole pound of cream to every 1,000 pounds skimmed, or (2) to invest in the

Standard

—the separator that gets all but one-tenth of a pound per 1,000 pounds skimmed, and costs, say, \$75.00?" The answer is that with a Standard you save in one year, with twenty cows, no less than \$27.25. It soon pays for itself in saving of cream alone. It will pay you to own a Standard, even if you have but two cows.

Besides skimming closely, the Standard gives you the cream in the best condition. The curved wing centre piece (an exclusive feature) distributes the milk to the discs without whipping. This means good firm butter.

The Standard gives more years of service, due to its self-oiling system, which decreases wear and tear (all bearings run in a mist of oil), spindle shafts made of tool steel instead of ordinary cold rolled steel, centre balanced bowl, dustproof casings, etc., etc.

The question is not—can you afford a Standard? You cannot afford to be without one. Let us send you a Standard, so that you can test it out in your own dairy, or compare it with any other separator. Send coupon to-day for free literature. State number of cows in your herd and their average milk production, and we will tell you how much money the Standard will save you on your herd.

Cut Out and Mail This Coupon To-day:

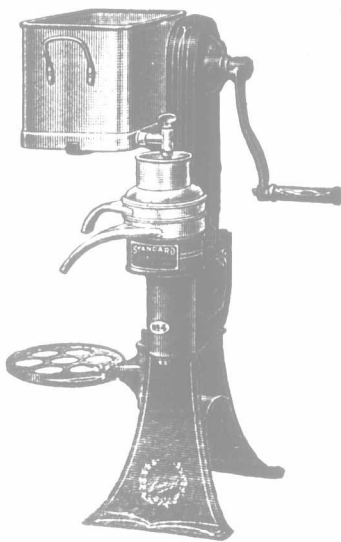
Renfrew Machinery Co., Limited, Renfrew, Ont.

Please send free literature about Standard Cream Separator. Number of cows in our herd is _____
Average milk production is _____

Name _____

P.O. _____

County _____



Comparison of Standard and Ordinary Machines

Here are the figures, which show how the Standard, even at the end of the first year, saves enough to make a substantial payment on its first cost. This table is based on a herd of twenty cows:

	Standard	Ordinary	Pan Skimming
First cost	\$ 75.00	\$ 55.00	
	7%	7%	
Interest	\$ 5.25	\$ 3.75	
Add Depreciation	3.75 (5%)	5.50 (10%)	
Add Loss in Cream	3.00 (0.1%)	30.00 (10%)	\$ 70.00
	\$ 12.00	\$ 39.25	\$ 70.00
Saving over ordinary separators			\$27.25
Saving over old pan skimming			58.00

The Standard's close skimming is substantiated by tests made at Government Dairy Schools. The Standard soon pays for itself, not only by saving cream, but by its longer service capacity. That is why only 5% is figured above for depreciation in the Standard, 10% for ordinary separators. The Standard has been tested for fifteen years' farm use without apparent wear.

Renfrew Machinery Company, Limited


Head Office and Works: Renfrew, Ontario

Eastern Branch: Sussex, N. B.

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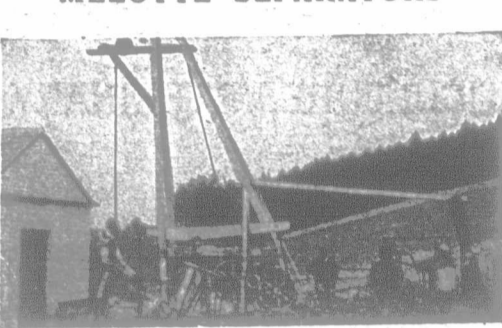
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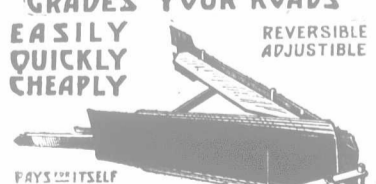
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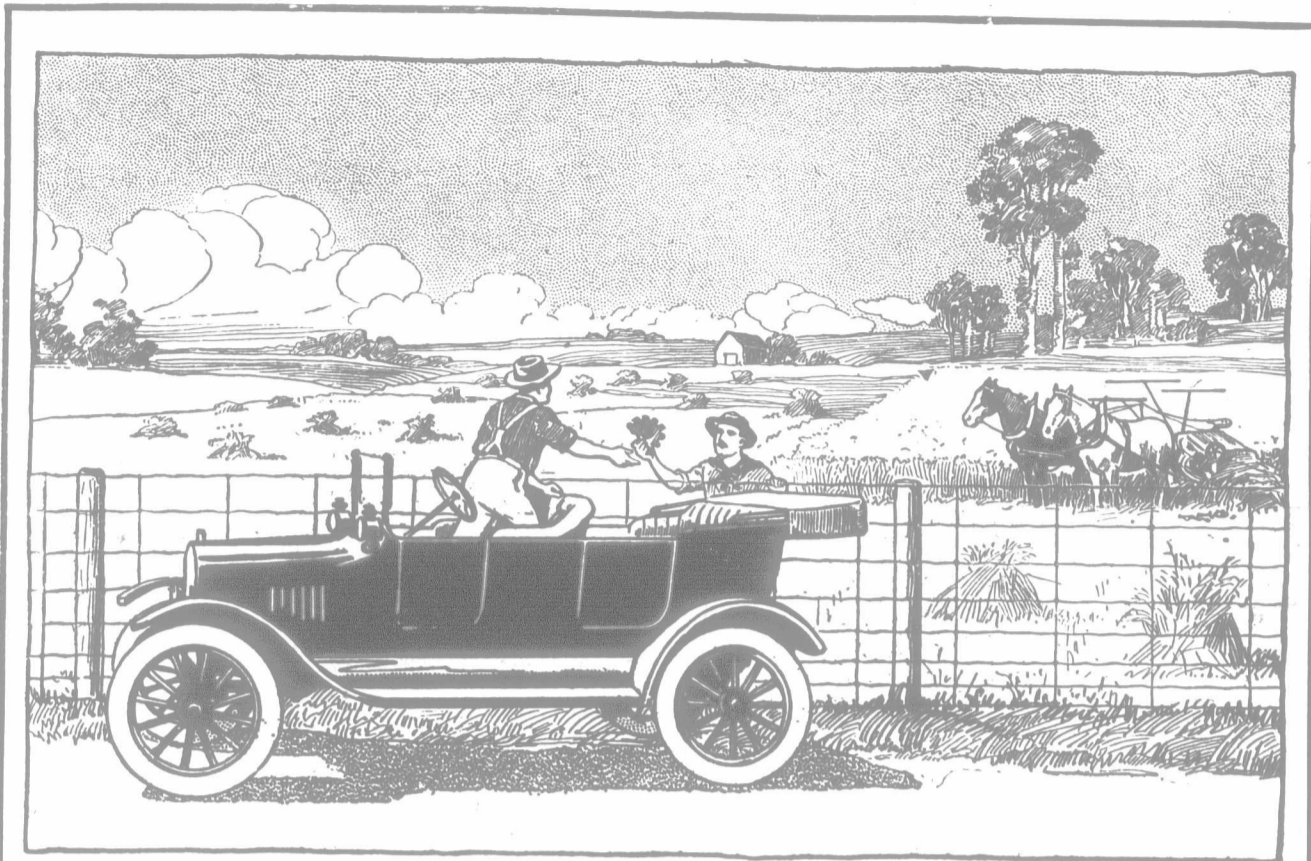
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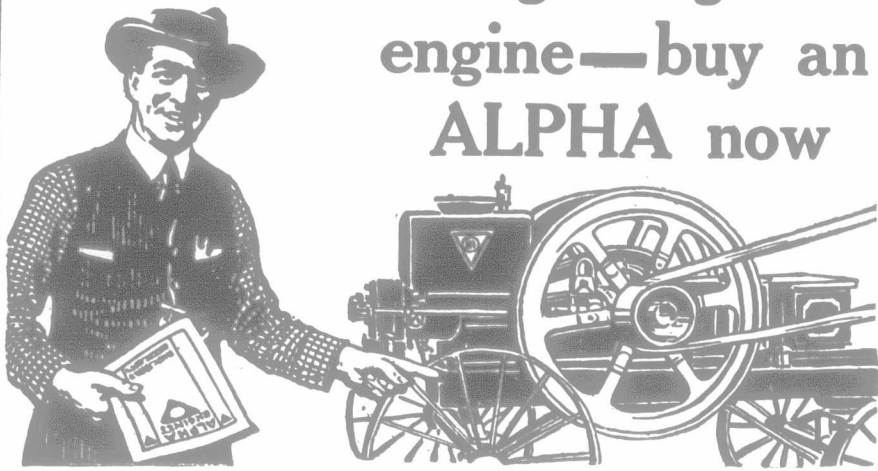
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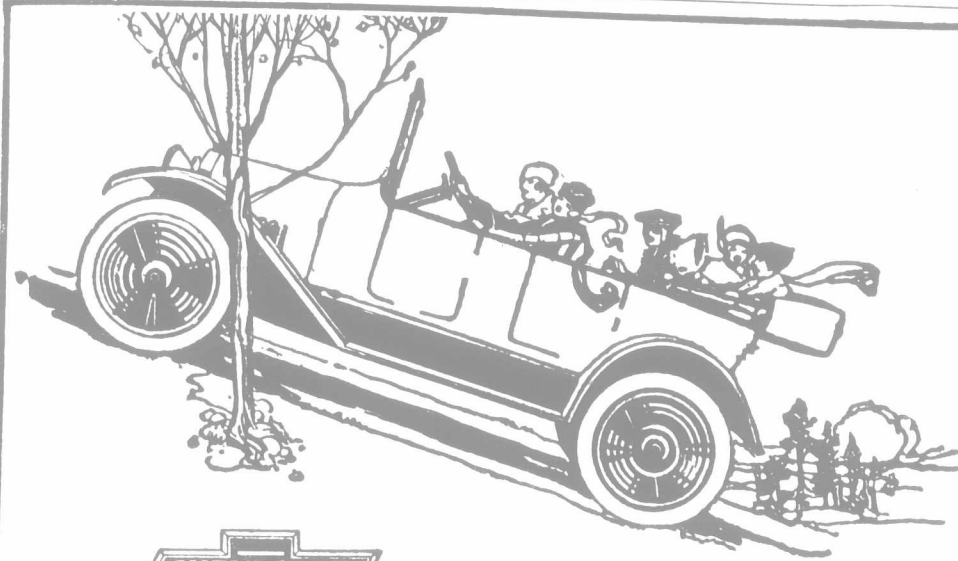
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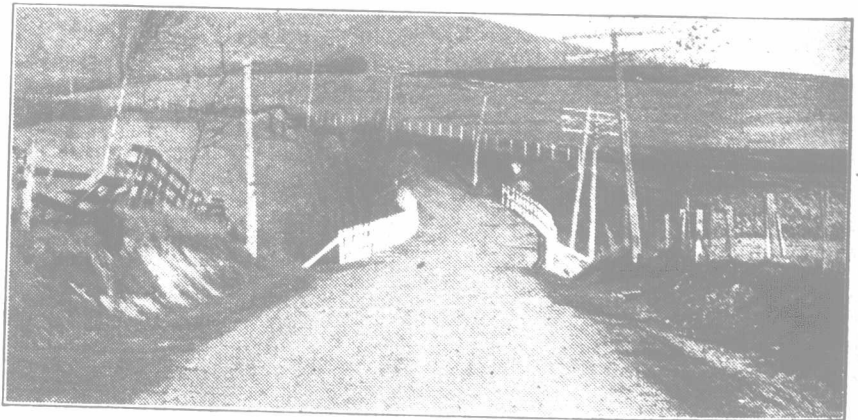
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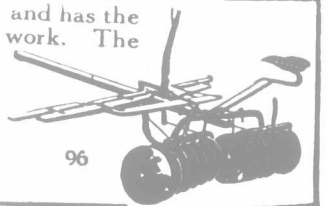
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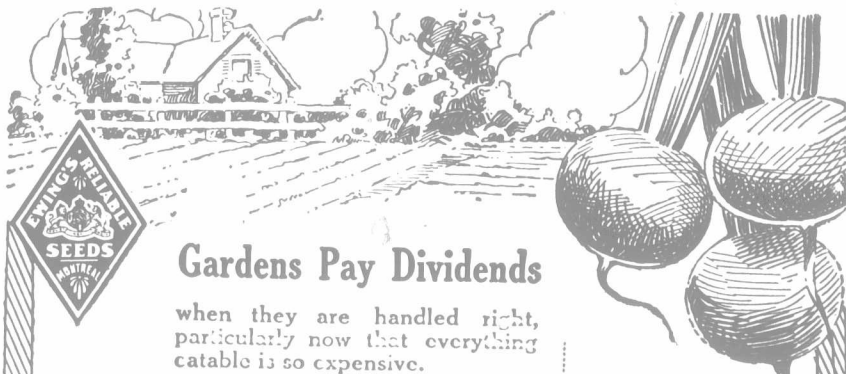
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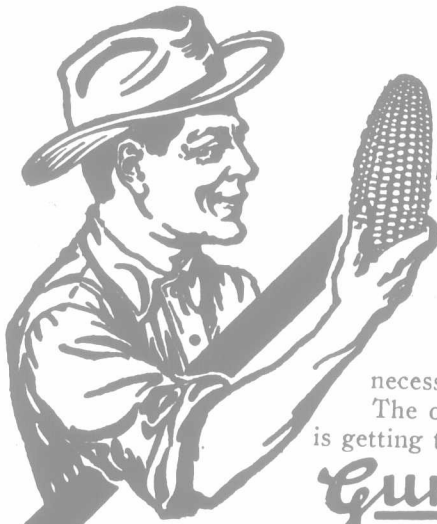
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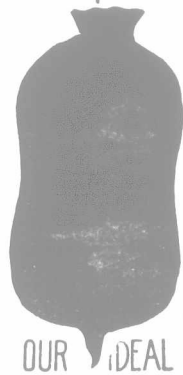
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Manitoba Oats are doubtful, and germination not sure. These oats are Standard and good, clean seed:

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We guarantee 90% germination. We never had better corn. Can ship at once. Add 30c. for bags.

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Bags 30c. extra

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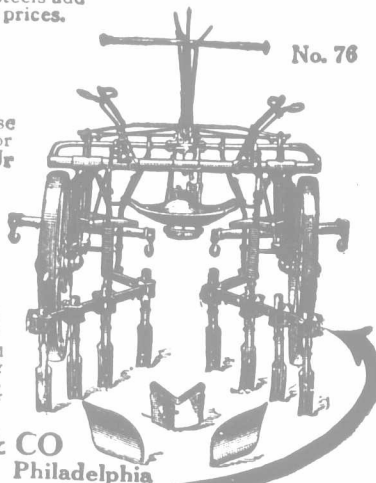
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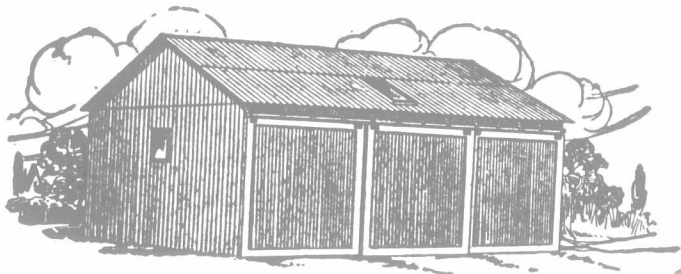
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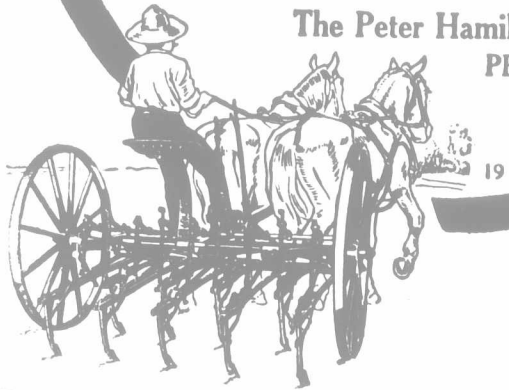
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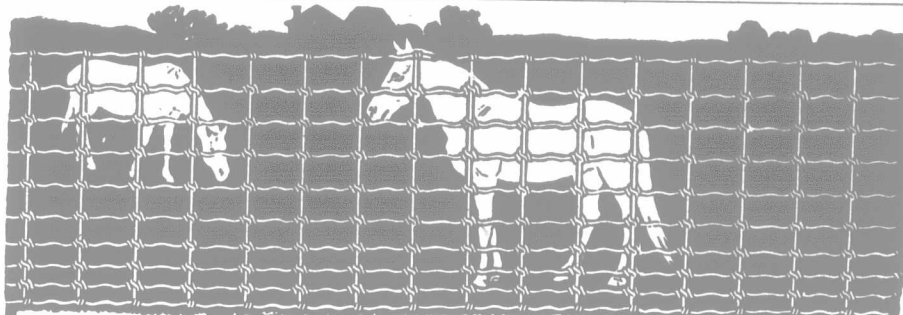
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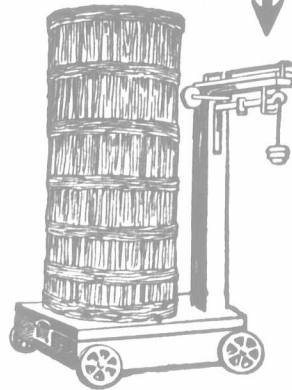
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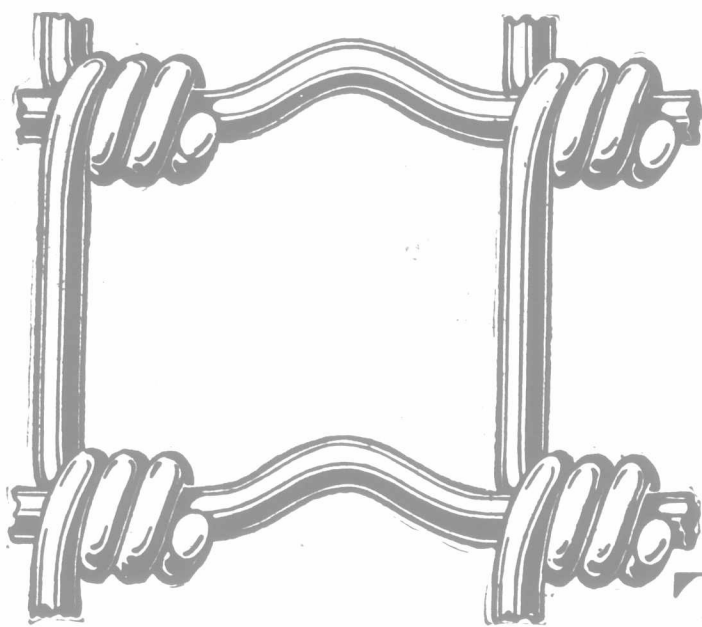


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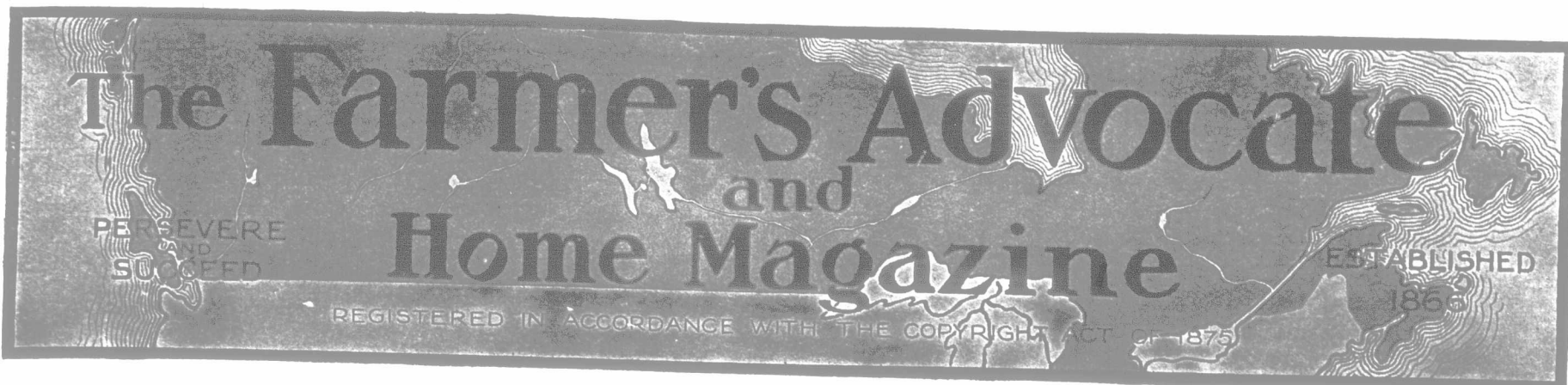
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LII.

LONDON, ONTARIO, MARCH 22, 1917.

1278

EDITORIAL.

Spring is here; are you ready?

If the acreage must be small work it better.

Too many of the "war experts" are altogether too far from the front.

Plan to treat the seed for smut and eliminate another source of waste and loss.

Get four-horse whiffletrees ready and drive two teams in one through seeding.

Ten acres properly put in generally pays better than fifteen acres "scratched over."

Clean the seed grain once more after you think it is clean enough to sow. Seed with the best.

Fat pork and potatoes are no longer to be sneered at by the hired man or the landed proprietor.

Now that women have votes, we presume they will immediately set about to teach the men how to vote.

It is easier to tell people to plant a garden than it is to hoe a garden, but vegetables will pay for hoeing every time.

There is plenty of room on the land for more people who are convinced that there is wealth and a life of ease in farming.

Consumers who boycott certain eatables do not seem to understand that limiting the demand on one product simply increases it on others.

A farmer told us recently that his 200 hens had laid one egg this winter and it cost him \$100. That is more than the city consumer paid for his supply.

Those who, early in the war, pointed out the importance of food production were called "yellow", but two years and a half have been sufficient to open eyes.

Notwithstanding the fact that prices for farm products are high there doesn't seem to be any great back-to-the-land rush. The city dweller must still think he has the best job.

If the average farmer could get one assistant as easily as the Ontario Department of Agriculture can hire a score of "experts" production might be greatly increased in this old Province in 1917.

Gradually the importance of agriculture and food production dawns upon the minds of people who, in the race for pleasure, power and pelf, forgot that without a prosperous agriculture the country would soon be "on its uppers."

We recently saw a letter written by one of Toronto's patriotic women who want outside work on a farm. In a bold, neat hand of the copy-plate order she patriotically offered to do all kinds of outdoor work for the sum of \$50 per month with board and room. How generous! That is better than from \$6 to \$12 per week in the city and board herself and besides she could enjoy the "perfectly lovely" fresh air and the "gorgeous" sunsets of the farm. We remember, however, that there are box stalls and barnyards to be cleaned out in spring.

Training For School Boys.

The talk of military training in the public schools will not down. There are those who commend and those who object. Switzerland built up a fine army by training the lads in the public schools. That country did not waste years of the productive period of these boys' lives in training and service after they had reached mature manhood. Only a few months, three we believe, were necessary to complete the training of an efficient force after the boys had left school. There are those who believe that such a system would be a good one for Canada. The training of boys in military matters while at school need not necessarily mean that militarism is to become a dominant factor in Canadian life. Everyone believes that the allies fight against militarism and that it must eventually be put down. But what harm could it be to our boys to be "well set up" through drill? Body and brain should benefit from it. We have shown in previous articles that sport develops only the strong and robust. Training would help all, the physically weak as well as the active and aggressive. If the proper ideals are kept in mind and the system worked out on a basis of developing Canada's boys into young men of high ideals and sterling character, no one should have any fear of training in schools degenerating into militarism, of course, officials of the jingoistic order could not be permitted to pollute the minds of the lads. Military discipline and military training, provided all is kept clean, constructive and democratic should prove of no small value to the boys of the land, but the military mad should not be allowed to spoil a good work.

Two Crops That Will Help.

With the amount of help available there is very little doubt but that no inconsiderable portion of this year's crop will go in the soil under none too favorable conditions. On many farms it will not be practicable to give the land the amount of cultivation necessary to produce the tilth desired by the farmer. We believe it pays as a rule to put the seed in well, but in times of great labor scarcity it is not always possible for the farmer to work his land as he would like. He must use his judgment in order to make up for what is lost in tilth. For seasons such as this and on fields which will get none too much cultivation, we would favor mixed crops. A large proportion of the grain grown in Ontario is fed on the farm, and for feed it might just as well be mixed when sown to produce the crop as to have the crops sown separately and the grain mixed before it is ground for feed. In fact it is better, for experimental work carried on at the Ontario Agriculture College and in co-operative experiments over Ontario, has shown that a mixture of one bushel of oats and one of barley will produce more pounds of grain per acre than any of the spring grains sown alone. Moreover, we have noticed from practical experience that a mixture of oats and barley generally does better on land none too thoroughly cultivated than either crop, particularly the barley, sown alone. This is worth remembering this year, for we believe that by sowing more of the land to this mixture the amount of grain produced will be considerably greater. Of course it is necessary to sow a rather early-maturing oat with the O. A. C. 21 barley or with whatever barley is sown, that the two may ripen as nearly together as possible. The best crop of spring grain we had on our farm, Weldwood, last year was of this mixture. Clean the seed of the oats and barley well and get them thoroughly mixed and sow around two bushels per acre. Of course it is necessary to grow some oats and some barley by themselves, but for the bulk of the feed this mixture should prove profitable this year.

Many farmers are slow to change their customs of seeding. We can remember a few years ago when mixed grain was frowned upon by the good farmer. We can

also remember when the farm which grew buckwheat was looked upon as a poor farm, but to-day mixed grain and buckwheat are two widely grown crops in Ontario, and while speaking of buckwheat it might be well to mention that many farmers may have a chance this year to work up some land after the earlier seeding and put it in to this crop. It is well to sow it about the last week of June or the first week in July, and this gives time to prepare land which could not be sown to the early spring cereals. By growing an acreage of buckwheat for feed, other crops may be saved for sale or for seed. Plans must be laid this year to get in as much crop as possible with the help available and spreading the work over the season will help. Sow some mixed crop and if the season gets too far advanced before the land is all sown put in some buckwheat.

A Return to Agriculture.

There is an old saying: "we never miss the water till the well goes dry", and this seems to apply very well to agriculture and food production. The world did not miss its fertile farms until the larder was running low. During the past decade or two, and even before, the attention of the people has not been directed toward agriculture and production of foodstuffs, but rather toward the various industries intimately connected with trade and commerce. This resulted in a decline of agriculture, or at least agriculture did not keep pace with the rapid developments in other industries. The farm population became depleted and great cities were built up at the expense of the land. As time went on the cost of food products increased, as one would naturally expect, an outcome of the unnatural conditions which gradually made the leading countries of the civilized world consuming countries rather than producing countries. Big industries were built up and fostered by legislation to such an extent that the young people raised on the farm very soon drifted city-ward, because there they could get higher wages than the farmer could afford to pay. For years this steady flow from country to town and city went on. For years the farmer was looked upon almost, if not quite, as a peasant engaged only in menial labor, and necessary only to produce cheap food for the tables of the more fortunate city consumers. The thought never seemed to enter the heads of most people that the very life of the country depended upon its agriculture; in fact, the war is bringing out the fact that the existence of any country depends, to a very large extent, upon that country's ability to produce the necessaries of life. Great Britain herself has realized this and a strenuous effort is being put forth to increase the home-grown food supplies in the Motherland during the coming year. Vast parks and lands set aside for sport are being plowed up and sown, as they should have been years ago. The people realize that it is not enough to produce three months' food supplies and depend on the outside world for supplies for nine months. The reverse would be a much safer proposition. Right here in Canada a great deal of talk is being indulged in by city men and women in regard to the duty of our farmers in this crisis. They are still willing and ready to let the few men left on the farms do all the work in order that all the people might live in plenty for the next year and for years to come. But there is hope in the fact that our Governments are awakening and that people are gradually coming to their senses and beginning to realize that without the products of the farm all other industries would not last long. If we mistake not, one of the results of the great war is bound to be a return to agriculture. All great changes come as the result of unusual circumstances, and it would not surprise those who are watching conditions closely to see agriculture in the very near future getting a fairer share of the attention of our Governments and people generally. In the meantime let everything possible be done to

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encourage men who know something of farming to get out on the farm and help produce. It is time to stop talking; the day for action has arrived. There are too many people ready to tell someone else what his duty is, and too few prepared to do the thing themselves that they tell others to accomplish.

Nature's Diary.

A. B. KLUGH, M. A.

Everyone will admit that the present winter has been severe enough, and it is interesting to see if the quite generally believed idea that a hard winter means an early incursion, and the presence of large numbers of winter birds, holds good. We find that the winter visitors, such as the Snowflake, Pine Grosbeak, Evening Grosbeak, Redpoll, Pine Siskin, Northern Shrike, etc., did not arrive unusually early, neither have they occurred in unusually large numbers. On the other hand reports come from London, Ont., of the wintering there of a Kingfisher, a Marsh Hawk and Cardinals, all species which as a rule go farther south in winter.

All Canadians will be interested in an article in the last number of "Bird-Lore" on "Birds in the War Zone" by Major Allan Brooks. Major Brooks is one of the best, perhaps the best, field naturalist which Canada has ever produced; a man who has done field work of great value in the East and particularly in British Columbia. In addition to excelling as a naturalist he is a superb painter of birds, and much work from his brush has been appearing in various magazines for some years past. One of the writer's most valued possessions is a water-color of the Evening Grosbeak, which Allan Brooks sent him one Christmas—one Christmas of the long-ago, when Brooks was peacefully pursuing his occupation in the Okanagan country, and not making chance bird observations from behind the sand-bags amid-shell-bursts. When war broke out Allan Brooks was one of the first to offer his services. In the course of this article Brooks says "The effect of cannon-fire on birds is amazing, almost without exception they absolutely disregard it. Even easily disturbed birds, like Crows and Wood-pigeons, are quite indifferent. My first experience of a heavy cannonade was in the early spring of 1915. The Blackbirds were all singing in the trees that lined the Yser Canal when, on a sudden, hundreds of guns of every calibre burst into a terrific and continuous cannonade; the enemy answered, and shells tore through the trees hour after hour. The effect was absolutely stunning to us humans, and when, after three hours, there was a sudden and complete cessation, the first thing that one's reeling senses realized was

that the Blackbirds were still serenely fluting away—I don't think they had ever ceased. Another time I was listening to the rich chucklings and gurglings of a Nightingale—the first of the season—and had located the songster with my glass, when the morning calm was shattered by a burst of rifle-fire close by; the retiring and elusive bird paid no attention, nor did he seek a lower or less conspicuous perch.

The only exception I have noticed out here to this general disregard of noise, was in the case of one species, the Green Sandpiper. One of these instances afforded me some amusement at a time when a diversion was welcome. We were enduring nine hours of heavy hostile shelling with very inadequate shelter. As I lay behind a breastwork of sandbags I watched the antics of a Green Sandpiper who was trying to get his breakfast in the water-filled shell-holes close by. Every time he settled, a big high-explosive shell would burst nearby with a deafening crash and a geyser of black loam, and away would go the poor bird to circle in the blue for perhaps ten minutes, and then pitch down in front of me again, to repeat the performance as another shell would land near him almost immediately. Meanwhile an unruffled Cuckoo called continuously in some nearby pollard willows. While following the course of a brisk engagement between six aeroplanes my glass suddenly encountered a flight of six white Storks, which were caught between the opposing "planes", and it was wonderful to see the spurt of speed the great ungainly birds put on, but the aircraft seemed to pass them easily. Usually birds pay no attention to aircraft possibly familiarity may have induced this condition."

Many of us have followed the evolution of the motion picture with interest, we remember the first "Cinematograph" exhibitions, which consisted mainly of films showing "chase pictures"—a form which was popular for some time. Then followed the presentation of all sorts of subjects, with a strong tendency in the direction of little stories with "heart interest", and later the full, and elaborately produced photo-play. But to those of us interested in nature the great possibilities of the moving picture in showing the actions of animals in their native haunts has always been apparent, and comparatively recently some most excellent films of this kind have been produced. The scene at the water-hole in South Africa, where the Giraffes, Elephants, Elands, Baboons and many other animals come to drink, is a wonderful spectacle. Other films showing insects, enlarged many times, in their activities have been exhibited. Now the Audubon Society has produced a set of films, taken by H. K. Job, the well-known field ornithologist, showing many aspects of the daily life of birds. One of these films shows breeding colonies of water-birds on the Florida coast, another the wild fowl in their winter home, a third the methods of attracting wild birds, and so on. These sets can be rented from the Audubon Society, and it would be a most excellent move if the patrons of motion-picture houses called for these films, and others of like nature, so that more of this class would be presented in place of those full of sickly sentimentality or slap-stick, rough-house comedy.

THE HORSE.

Old London's 38th Shire Horse Show.

EDITOR "THE FARMER'S ADVOCATE":

For the 38th London Show of the English Shire Horse Society an entry of 500 head was obtained, 307 stallions, 168 mares and 25 geldings. Quality was written over all the sections, for it does not pay to send third-rate stock to London these days. The fence-rail entries, mostly tenant-farmers, are far too keen to be taken in with any flash stuff. They know the real goods. The entries are down on other years, but the quality is up; for instance, a champion horse of two years ago could only get fourth in his class this year! And he has improved in the meantime.

A new feature of the London Shire Show this year was the gift of a certificate and a sum of money to the man who has been in charge of the first-prize winner in each class. It is anticipated that this recognition of the man's ability in bringing out Shires will be of considerable advantage to him in his after career. By the way, the total sum set apart for prizes to breeders of prize-winning horses is £665, including two gold medals to the breeders of the champion animals. Many tenant-farmers got "fivers" for nothing this show, merely because their stock won in the names of others who had bought them as youngsters from their studs. It thus pays to breed winning stock in Britain.

Young stallions came into the ring in good numbers. The winner in the yearling stallion class was E. J. Wythe's Pendley Leader by Norbury Menestrel, a bay colt which earned the highest distinction as a foal, and stood out from his rivals now in scale and weight. He was bred by J. G. Williams at Pendley, which is by Tring, where the Rothschild stud used to be. Second to him there stood for quite a long time another colt bred in the Pendley Stud, and now in the possession of the Duke of Westminster. At the last moment, however, he was displaced by W. & H. Whitley's Primley Invincible by Primley Forester.

Two-year-olds were not easy to judge, as they varied in type. A leader was found in Sir Walpole Greenwell's Marden Dagnam by Champion's Goalkeeper, the stallion for which 4,100 guineas were paid at the Tring Park sale. He is a finely built horse. Second was T. Ewart's Dunsmore High Cross by Tatton Morning Star.

At the head of a class of 75 three-year-old stallions stood a couple of horses by Babingley Nulli Secundus. Final contest was decided by referee, who preferred Messrs. Whinnerah's Harboro' Nulli Secundus to the winner of twelve months ago, R. L. Mond's Sundridge Coming King. The latter appeared the weightier, but his rival was smarter on parade. Colin MacIver won in the four-year-old stallion class with a Warton Draughtsman horse of the name of Blaisdon Draughtsman. Blackthorn King by Starborough Coronation, Messrs. Forshaw's stallion, repeated his victory of twelve months ago in the smaller senior stallions, and he was well supported by the Duke of Westminster's Dollar Dictator, a Lancashire-bred one. When big senior stallions came into the ring we saw we were in for a tight go. The top lot comprised five horses which headed the class last year, and they stood in the same order. During the parade, however, there was put up to third place R. C. Crofts's very weighty stallion, Bardon Hero by Bardon Forest Premier, and for a real new chum this was a distinction. The referee was left, however, to settle which of two stallions should lead, these being Forshaw's winner in 1916, Rickford Coming King by Ravenspur, and Sir Arthur Nicholson's year younger horse, Champion's Clansman by Childwick Champion, second to his rival last year. Clansman seemed to be the bigger stallion and rendered a very good account of himself in the final parade. The referee gave him the verdict. He cost Sir Arthur 1,900 guineas at Tring sale and has been the best horse in England for two years past in the writer's opinion. The champion of two years ago, Blaisdon Jupiter, was placed fourth, and the fifth card went to Muntz's stallion, King's Warrior, a good winner at summer shows.

There were fewer mares on show but they were all quality, and the champion mare of the past three years at this especial exhibition had to bend the knee to a younger matron. 'Twas ever thus.

The Tring breeder, J. G. Williams, won first honors in all three filly classes with animals bred by himself and sired by Norbury Menestrel. The champion mare was Sir Arthur Nicholson's Roycroft Forest Queen, a big handsome bay, sired by Ratcliffe Forest King, and she is only five years old. Messrs. Whitley's great eight-year-old, Lorna Doone, made a strong bid for her fourth championship, and only the Staffordshire mare barred her way by reason of her gay action and her great scale. But, I am not telling the story in the right order.

We began with yearling fillies, and here J. G. Williams led with Pendley Princess Mary, a combination of Norbury Menestrel blood on that of a Lockinge Forest King mare. That is Williams' sure way to victory a blending of Menestrel blood on that of Forest King. He is a firm believer in the entail female line that runs back to either of those families. Williams led again in two-year-old fillies with Pendley Duchess (bred on the same lines), and once more in three year olds with Pendley Royal Princess (a full sister to the year-old Pendley Princess Mary). Best of the four-year-old mares was the Duke of Westminster's Grandboro' Duchess, a daughter of that rare young stallion Halstead Blue Blood, who made 1,550 guineas at the Rothschild break-up sale. Halstead Royal Duchess won yet another class for John Bradley, and Sir Walpole Greenwell's Marden Forest Lass also notched wins, and I don't suppose you would buy either of them for 4,000 dollars if anyone on your side wanted them. But the piece de resistance was in the last and old mare class. Lorna Doone, a distinguished mare, which had won the supreme championship on three consecutive occasions, was now beaten by Sir Arthur Nicholson's Roycroft Forest Queen, which has had a very successful career in the country, and, which, in the matter of pedigree, is a combination of the all-conquering Forest King and Harold blood. She moved splendidly, and was a perfect picture of a typical brood mare.

When it came to the supreme female championship Roycroft Forest Queen beat Lorna Doone, and as Sir Arthur Nicholson's stallion, Champion's Clansman, also won the supreme male honor, that gentleman so scored a great double success, taking the two gold challenge cups, and thus equaling the feat of Lord Faringdon, the late Lord Rothschild, and Sir Walpole Greenwell.

The champion stallion, Champion's Clansman, is a brown seven-year-old, bought as I have related at the Tring Park sale in 1915 for 1,900 guineas. He was sired by Childwick Champion, and is a very fine stamp of a cart horse. His chief rival was Messrs. Forshaw's Rickford Coming King, also a weighty and active brown, and has been sold twice for 1,170 and 800 guineas in his day.

The geldings were a goodly lot, but they ought to be shown in gears to be effective. They are led on a string instead.

At the sales, held in connection with the show, 121 head offered made £164 7s. 4d. or £5 2s. 7d. more apiece than realized on last year's lot. The 71 stallions averaged £152 and the 50 mares £139 18s. Top price was 1,275 guineas paid by R. W. Hobbs, the Lechlade Shorthorn breeder, for W. T. Lee's stallion, Secundus Junior by Babingley Nulli Secundus. This is the largest price ever paid at these annual sales for a three-year-old. The next good price was 520 guineas paid by the Swindonshire Horse Society for John Measure's Lincoln Victor by Victor Emmanuel 2nd. J. Gould's mare, Variety, went to H. M. the King's stud for 210 guineas, and J. G. Williams' great winning mare, Maid of Athens, realized 250 guineas, to E. G. Preece. Very likely she will go to U. S. A.

The most successful winning sire at the show was Norbury Menestrel whose stock took eight prizes, including four firsts.

ALBION.

LIVE STOCK.

The High Place of Agriculture.

In a bulletin published recently by the Ontario Department of Agriculture, H. S. Arkell, Assistant Dominion Live Stock Commissioner, gives a few figures which show the high place of agriculture in the national and commercial life of Canada. A few excerpts from his remarks follow:

"The live stock industry has contributed to the industrial revenue of Canada an aggregate of exports, for the fiscal year ending March 31st, 1916, to the value of \$105,919,190. This averages a return of over two

million dollars per week. For the fiscal years ending March 31st, 1913, 1914 and 1915, the animal produce exports have totalled respectively \$45,773,227, \$54,612,072 and \$76,956,002. Thus within the period of the war, the exports of animals and animal products have doubled, while for the four-year period they have increased practically one hundred and fifty per cent.

"Considering the value of the exports of animal produce with that of the exports of agricultural produce, the aggregate for the fiscal year ending March 31, 1916, amounted to \$372,394,380, as compared with a total export value for the same period, of manufactures, including munitions, of \$250,052,223. In other words, the total export value of agricultural produce is practically one and one-half times as great as the value of the exports of manufacture, including munitions of war

Pressing the comparison still further, the aggregate of exports from all sources, including mining, fishing, lumbering, manufactures and agriculture, for the fiscal year 1915-16, amounted to \$779,300,070. Of this the total export value of animal and agricultural products amounted to 48 per cent.

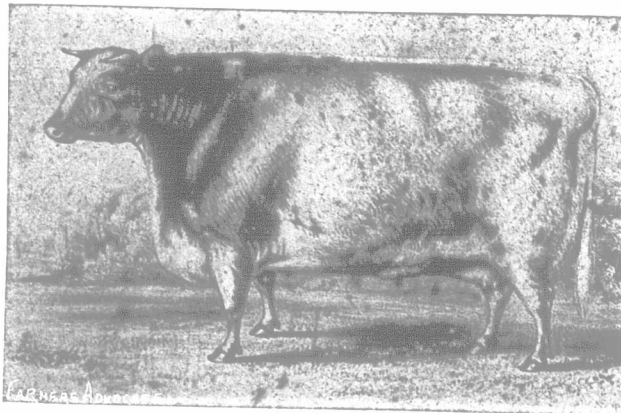
"The most significant feature of this increase as relating to the live-stock industry lies in the fact that it reveals the possibility or, at least, suggests the opportunity, of the continuance of a permanent trade, following the declaration of peace. Apart from the export of such products as tinned meat, pork and beans, etc., which may be required only temporarily for war purposes, the export trade in live stock products centres round the sale of such staple food commodities as cheese, eggs, bacon and fresh beef.

Some Early Shorthorn Blood and Breed Improvers.

Little do we realize as we see the "reds, whites and roans," grazing contentedly in the field, or as we feed and care for them in the stable, that they were not always thus, and around the creation of the Shorthorn breed and its conquest of the cattle world is woven a story that will interest the mind and bestir the soul of the most humble peasant who has any regard whatsoever for a good beast. Men of staunch character, perseverance, foresight and valor, made great sacrifices and expended labor, time and wealth in their supreme efforts to improve nondescript cattle and give the world an animal better suited to minister to the needs of mankind. These different founders of the breed had ideals of their own, which were given tangible form in the types of animals they created. Later there arose such rivalry between these different strains within the breed, such controversy between their respective advocates and such frenzied buying and selling as the world has known in no other breed of live stock. The Bates and Booth cattle were, in their day, supreme, but later came the descendants of "Champion of England," bred and used as a herd sire by the "Sage of Sittyton," Amos Cruickshank, and from that time began a period when breeders of Shorthorns in the Old Land and beyond the seas were clamoring for the Scotch cattle of Aberdeenshire. We read of the discoveries in science, medicine, art and the great improvement in labor-saving machinery, and we entertain deep feelings of gratitude for the minds that gave them birth, but who can measure the gift of those men who gave the world deeper-fleshed and quicker-maturing meat animals; kine that would double or treble the milk production of their ancestors, and horses better suited to be the servants of man? The advantages accruing from these improvements in live stock amount to many millions of dollars annually. In fact, we cannot estimate the significance of their work; when we stop a few moments and think, speaking in terms of millions is mild language indeed. It will help us in our daily work as we go about the stables, as we cultivate and seed the land, that the cattle may have grain and fodder, and as we do our part, each in a small way perhaps, for the upbuilding of the great live-stock industry in Canada, if we know something of the animals and the men who bred them in the early days of stock improvement. Every breed has a history and an interesting one, but within the scope of this short article we shall forget the activities directed towards the formation and prosperity of other breeds, and devote ourselves to a tale ancient a breed of cattle that became supreme in the land of its nativity and proved a popular beast in the New World, as in the Old.

Colling Bros. and Origin of the Duchesses.

Shorthorns may be traced back to the old Teeswater cattle of England in the seventeenth century, yet when we attempt to record facts prior to the time of the Colling Bros., who were active during the last quarter of the eighteenth century, we find a curtain of obscurity unrolled across the stage and beyond it are only tradition, uncertainty and doubt. While history is not too convincing with regard to early cattle breeding prior to the activities of Charles and Robert Colling, yet these men were able to buy Shorthorns, (so-called), as foundation stock, the like of which in some instances they were not able to improve upon even by breeding them to their good bulls. Charles and Robert Colling began to assemble two herds of Shorthorns about 1784. Charles took the old homestead known as Ketton, in the County of Durham, and Robert settled about one mile away on the place called Barmpton. There were good breeders prior to and contemporary with them, but such an overwhelming majority of

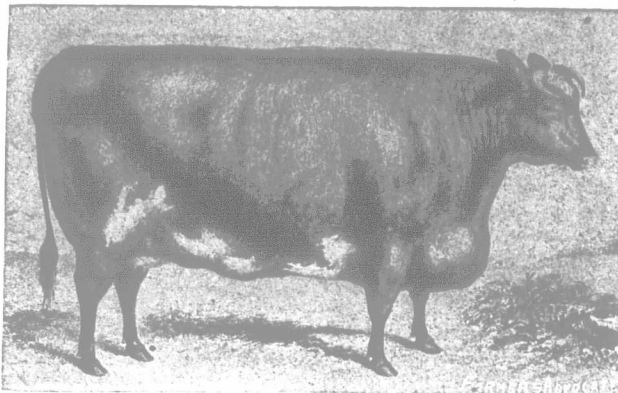


Bracelet.

First at the Royal, 1841. Twin with Necklace.

Shorthorn cattle trace back to these two herds that it seems unnecessary to comment on others of their day.

At this time, and for several years previous, Robert Bakewell, of Dishley Grange, was conducting experimental work with Long-horned cattle, Leicester sheep and heavy horses. Improvement was his aim, and as a means to an end he had practiced in-and-in, or close breeding, to a very considerable extent. The stockmen of that time had a great abhorrence for close or incestuous breeding, but Bakewell's success was so marked that the Collings made a close study of the system and adopted it in their own operations. Henceforward many breeds were built up by a concentration of blood after Bakewell's plan. In how many cases the method failed or proved disastrous we do not know, but the instances



Necklace.

First at the Royal, 1842. Twin with Bracelet.

on record where in-breeding has resulted in triumphs adorn live-stock history all down the line of progress. No one will recommend its indiscriminate use; only students of animal life and very careful breeders should resort to such ends. But to return to Ketton and Barmpton, the \$5,000-bull Comet, bred by Charles Colling, is a classical example of these early breeders' success with the method learned from Bakewell.

In the spring of 1784 Charles Colling bought a cow, afterwards named Duchess, on the Darlington market. This was the foundation cow and the beginning of a family about which centered so much controversy and frenzied buying. This strain reached its zenith, perhaps, at about the time of the New York Mills' sale, near Utica, N. Y., on September 10, 1873, when the 8th Duchess of Geneva was knocked down to the bid of \$40,600. Another foundation cow in the same herd was "The Beautiful Lady Maynard", bought in September of 1786 at Eryholme for twenty-eight guineas. Along with her came her heifer calf, Young Strawberry by the bull Dalton Duke (188), for ten guineas. At this time the observing Collings noticed that veal calves of extra quality were coming regularly to the Darlington market. They sought about to discover the source which appeared to rest in a particular bull owned by a Mr. Fawcett. The animal had been bred by a bricklayer, sold to a blacksmith, and was at last found as Fawcett's property, at six years of age, and purchased by Robert Colling and Mr. Waistell, of Ali-hill. After two years of service in Robert's herd, this bull, afterwards known as Hubback, was purchased by Charles in whose herd he left the heifer, Haughton, said to have been "fine and neat", which, with excellent handling qualities, were also Hubback's characteristics. This

heifer was bred to Richard Barker's bull (52), which was a coarse animal with wiry hair and a black nose. The get of this mating was the noted bull Foljambe (263). This young sire was mated with Lady Maynard, producing the heifer Phoenix. Foljambe was then crossed on the Young Strawberry heifer, the daughter of Lady Maynard, which gave birth to a bull Bolingbroke (86). The Bakewell system of in-breeding was then introduced, for Phoenix (out of Lady Maynard and sired by Foljambe) was mated to the bull Bolingbroke, which had as grandam the Lady Maynard cow and Foljambe as sire. The result of this close intermingling of Foljambe and Lady Maynard blood was the celebrated bull, Favorite (252). Charles Colling was well pleased with Favorite as a sire and used him on his own get, in some cases, to the third and fourth generations. In one instance he was returned to his own dam, producing Young Phoenix, which in turn, was bred to her sire, to which service she gave birth to the bull Comet (155). This intensely in-bred bull was the first Shorthorn to sell for \$5,000, fetching 1,000 guineas at the Ketton dispersal sale in October, 1810. Hubback's value as a sire was not appreciated until he had passed out of the hands of the Messrs. Colling, but throughout the greater part of his long and useful career he had been held at a very low service fee (for a long time only one shilling), and consequently did inestimable good. The bulls Favorite and Bolingbroke, as well as others in the service of Charles Colling were freely used and apart from their service in their owner's herd they exerted an influence for good in their district.

Robert Colling was, like Charles, a breeder of renown. The bull Hubback in his herd and his service to seventeen cows no doubt left an impression which was translated into money values at the dispersal sales of the Barmpton herd in 1818 and 1820. Together the Colling Bros. laid the foundation for such families as the Phoenix, Wildair, Red Rose, Princess, Bright Eyes, Daisy and others.

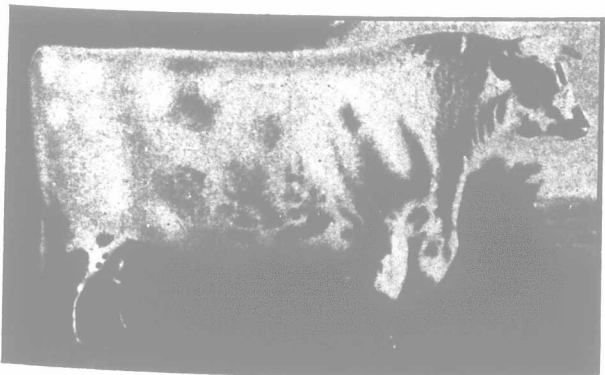
Thomas Booth, The Strawberries and the Isabellas.

Any story ever written fails to do justice to the entire Shorthorn cult of early days, for a few men in each of the different periods through which the breed has passed have shadowed their contemporaries and laid the cornerstones for a large percentage of the tribes which became fashionable and continue to attract modern breeders. For this reason, we consider no apology is due, with such limited space at our disposal, if we pass from the Collings to the activities of the Booths and Bates. For almost half a century the Booth-bred cattle, noted for flesh and substance, were pitted against the dual-purpose character, the strong constitution and the excellent quality found in the Kirklevington production of Thomas Bates.

Killerby and Warlaby were the two estates made famous in history by Thomas Booth and his two sons Richard and John. The elder Booth was well underway with his breeding operations by 1790 and he was among the first to acknowledge the superior qualities and usefulness of the old bull Hubback, and the system practiced by the Collings of concentrating the blood of desirable animals. Thomas Booth used Ketton and Barmpton bulls freely on ordinary cows, many of which were procured in the valley of the Tees and on the Darlington market. Moderate-sized Colling bulls were mated with the big, roomy cows found in the district. Twin Brother to Ben (660) carrying a strong infusion of Hubback blood, was the first Colling bull to be used. Suworrow (636), Pilot (496), and Marshal Beresford (415), by Comet, and out of Charles Colling's cow, Daisy, were other foundation sires used by Booth, and



Mimulus.



Duke of Northumberland.

First-prize Shorthorn bull at Oxford, 1839; bred by Thos. Bates.

all were rich in the blood of Hubback through Foljambe, Favorite or Comet.

One of the first experiments in mating comprised five heifers purchased from a Mr. Broader, of Fairholme, and these crossed with Colling bulls became the progenitors of many illustrious families, chief among which were the Fairholme or Blossom tribe, the Red Rose tribe, and the Adriadne, or Bright Eyes tribe.

About 1797 a yellow-red cow was purchased on the Darlington market and crossed with Colling blood. This mating became the origin of the Hahnaby or Strawberry tribe, and gave to future generations in the same strain such noted bulls as Young Albion, Rockingham and Priam. The twin show heifers, Necklace and Bracelet, were sired by Priam and dropped by a cow named Toy, tracing back to a heifer by Suworow.

In the year 1814 Richard, a son of Thomas Booth, began breeding Shorthorns on his own account at Studley, about fifteen miles from Killerby. In his hands another of those old Darlington-market cows became the ancestress of an illustrious family known as the Isabellas. The original cow was untraced and little was known of her except that she was sired by "Mr. Burrell's bull of Burdon." Mated with Agamemnon (9), of Killerby-Bright-Eyes breeding, she produced the "White Cow" and this female, to the cover of Pilot, calved the matchless Isabella.

The Booth bulls were remarkably prepotent and no better example of this characteristic in the males they bred is necessary than is to be found in the few crosses required to produce the heifer just mentioned, so wonderful as a show individual and so famous as the ancestress of an illustrious Shorthorn family. In addition to those mentioned, the Booths gave us the Anna, Medora, Bracelet, Moss Rose, Mantilini and Cherry Blossom tribes.

Thomas Bates and the Duchesses.

About 1800 there appeared on the Shorthorn horizon in Thomas Bates a personality destined to mould opinion to a remarkable degree in his time and give Shorthorn cattle milking proclivities, splendid constitutions, and sufficient quality to carry them to the pinnacle of popularity both in England and the new world. Though much younger, Bates was to a certain extent a contemporary of the Collings. His later years from 1830 to 1849 were spent on his place called Kirklevington, in Yorkshire. Thomas Bates was a very observing man and a skilled feeder of fat cattle, but not until a considerable legacy was left him by a rich aunt did he connect himself actively with Shorthorn breeding. In 1804 he bought from Charles Colling, a cow, Duchess, by Daisy bull (186), and this cow Bates claimed to be "the best in all England". At the Ketton dispersion in 1810 he bought Young Duchess, a granddaughter of Duchess by Daisy bull. She was not an extraordinary individual for conformation or quality, but Bates had made up his mind that the Duchess blood was superior to all other and upon that foundation was determined to build his herd. This cow, afterwards called Duchess 1st became ancestress of the Duchess family, which made such an impression in America in the sixties and seventies of the nineteenth century. The first bull of Duchess blood used by Bates was Ketton (709), out of the old Duchess cow and sired by Favorite. Then followed a period of in-breeding through the further use of Ketton's get in the herd. An infusion of fresh blood was later introduced by breeding to Marske (418), of Barmpton blood, but the results were not satisfactory, so Bates sent Duchess 3rd, by Ketton 1st, to be bred to Duke (226), a Duchess bull by Favorite. This Bates spoke of as "the hope of the Shorthorns." The outcome of this mating was The Earl (646), which was used for four or five years with good results. The Earl was followed by 2nd Hubback (1423), bred from a cow called Acklam Red Rose, or Red Rose 1st, of Colling blood which Bates purchased from a Mr. Hustler. Acklam Red Rose was the ancestress of the Cambridge Red Roses and The Rose of Sharons, which the Renicks of America brought to the fore on this side of the water.

The time came when the Bates' Duchesses required rejuvenation through the infusion of new blood. They were fast becoming shy breeders. Thomas Bates, while he looked with scorn on almost any other tribe but his favorite one, still had some regard for the Princess tribe of Robert Colling's breeding. He heard of the bull Belvedere (1706) of this strain in the stable of John Stevenson of Wolviston, and he immediately set about to effect his purchase. The classical story of buying a bull from the appearance of his head protruding through a window has its origin in this transaction. Belvedere was sired by Waterloo (2816) and out of Angelina 2nd, (own brother and sister). The purchase price was £50 and the date June 22, 1831. Bates now declared that he would produce "Shorthorns such as the world has never seen." Belvedere was used till he was twelve years old and among his get was the noted cow, Duchess 34th, which bred back to her own sire gave the famous Duke of Northumberland.

The Waterloos, Wild Eyes, Cambridge Red Roses, Foggathorpes, Secrets, and Bell-Bates all sprang from Bates' breeding. On May 9, 1850, the Kirklevington herd was dispersed, and thus ended the career of a breeder and improver of Shorthorns who persistently claimed that milk as well as beef was an important factor, and we are indebted to Thos. Bates, perhaps more than we realize, for the splendid milking qualities of Shorthorn cattle.

"The First Farmer of England."

In passing speedily over the long list of banner-bearers in the Shorthorn ranks of England during the last part of the nineteenth century, we must pause to

mention William Torr, of Aylesby. He was consistently patriotic to Booth bulls, favoring the Flower tribe. Unlike Bates, however, he appreciated a good animal however bred, and at one time was somewhat partial to the Waterloos. Twenty-two Annas at his dispersal sale on September 2, 1875, made the remarkable average of \$4,180, and Bright Empress at \$12,900 went to the herd of T. C. Booth, at Warlaby. This was the highest price ever paid in England up to that time for a Shorthorn female. William Torr's thirty years of active work in breeding Shorthorns was considered a triumph, and his farming methods were such as to earn for him the distinguishing title of "the first farmer of England."

"The Herdsman of Aberdeenshire."

In spite of the demand for more milk from some quarters of the Shorthorn breeding fraternity, the Scotch cattle designated in part by such tribal names as Violet, Venus, Mimulus, Picotee, Broadhooks, Lady, Nonpareil, Orange Blossom, Brawith Bud, Lancaster, Victoria, Secret, Duchess of Gloster, Spicy and Lovely are enjoying the most widespread popularity at the present time. These sorts represent the labor of half a century on the part of Amos Cruickshank, of Sittyton, Aberdeenshire, Scotland. This herdsman of Aberdeenshire was not satisfied with symmetry or beauty in cattle. He sought good middles, denoting feeding capacity, deep flesh, broad backs and good constitutions. Milking qualities were appreciated when they appeared, but nothing was allowed to intervene or retard progress towards a beast that would mature early and fatten quickly on the grass, small grains, roots and "cake" indigenous to that part of Scotland where the herbage was scanty and the soil, to some extent, unwilling. A brother, Anthony, supplied considerable of the capital required, paid attention to the commercial end of the business, and, it is said, named the cattle and looked after the pedigrees. Amos, however, is credited with the unflinching perseverance and the cattle breeder's instinct that led to such a crowning success. At one time he was the tenant of 1,000 acres of land and his herd in its prime numbered over 300 head.

Amos Cruickshank's work as a great breeder and improver of Shorthorns may well be divided into two periods; the first covering the time when he travelled England and Scotland in search of suitable sires to head his herd, and the second from 1860 onward when Champion of England and his get did such inestimable service in the herd at Sittyton. In 1858 Lancaster Comet was purchased by letter, but when he arrived Mr. Cruickshank was much disappointed with his large head and unsightly horns. The following year he was turned to pasture with some cows and heifers that had failed to get in calf from other bulls, and from a mating here with the cow Virtue, Champion of England was produced. He was shown as a yearling without success, but he developed into a sire that satisfied "the sage of Sittyton," and through his blood such bulls as Caesar Augustus, Royal Duke of Gloster, Roan Gauntlet, Barmpton and Cumberland were got.

Space will not permit of a detailed description of the different Sittyton tribes and their origin, but it is interesting to note that the cow Mimulus, ancestress of the family which bears her name, became the dam, in Canada, of the great Barmpton Hero, the leading bull in America in his day.

At the time of its dispersion in 1889, the Sittyton herd comprised 154 head. It was sold in its entirety for exportation to Argentina, but through the failure of a great London banking house the deal was cancelled and the greater part of the Cruickshank cattle were taken by William Duthie, of Collynie, a neighbor of Mr. Cruickshank's, and J. Deane Willis, of Bapton Manor, Codford, England. Collynie and Bapton Manor are still famous for the splendid Shorthorns they give annually to the world. The mantle could not have fallen on more capable shoulders.

Readers might notice the absence in this article of such names as Athelstane, Ury, Kinnelar, and Uppermill, which appear commonly in the nomenclature of good Shorthorns. Douglas of Athelstaneford, Sylvestre Campbell of Kinnelar, Captain Barkley of Ury, and William S. Marr of Uppermill, were prominent North Country breeders and from them we have derived some excellent cattle. While Amos Cruickshank made selections from some of these neighboring herds, from time to time, his supremacy was nevertheless acknowledged by all his contemporaries, and their herds were improved very often through the addition of Sittyton bulls.

To Canadians some of the most interesting of all Shorthorn history could be written regarding the work and adventures of the early breeders and importers in Canada and the United States, but that story must be reserved for some future issue.

THE FARM.

Our Scottish Letter.

In these days one has to do, not the things he would like to do, but the things which he can do. I would like to have written a letter three or four weeks ago, but it was impossible to find the time. Now I am endeavoring the task under difficulties, but the readers of "The Farmer's Advocate" are entitled to hear how matters are going in the old country. The War dominates everything, and an unusually large body of people are beginning to realize that it was not altogether a sane policy that Great Britain followed for half a century when she allowed her Agriculture to languish in order that her industries and commerce might flourish. It

has come home to us during these past few months that the man who grows crops to feed man and beast is only second in national importance to the man who fights his country's battles by land and sea. Our Navy is doing marvels, and that includes not only the Navy that fights, but the Navy that carries the commerce of the world. Tributes to the bravery of the men of our mercantile marine have, during the past few days, been ungrudgingly paid. They have never hesitated to put to sea, and their calm resolute determination to hold the seas for Great Britain and her Dominions, and the free passage of the traffic of all nations was never more conspicuously displayed than during these by-past months. Whoever falters and gives way to fear the British sailor of all ranks is not one of them. He does great deeds, and refuses to have them trumpeted.

But in spite of all that, we are realizing as a nation that it would just have been as well had we looked better after our agriculture. It is not good enough that we should only grow enough in this country to feed ourselves for three months out of the twelve. It would be a sounder policy were all to grow what would feed us for nine months out of the twelve and eke out the balance by imports. For the first time in our history as a nation we have a Food Controller. He allows us only a limited portion of bread, meat and sugar per head per week. He has not so far said, you shall not get any more, but he tells us plainly that if we do not voluntarily adopt his scale of rationing, it will have to be made compulsory. As one of the great middle class of the country the writer views the Food Controller's rationing with equanimity. He will get along very well with it. It is rather better than his average rationing, and the writer is quite a healthy piece of humanity, standing six feet, and built in proportion. He has never starved, and he devours liberal proportions of oatmeal porridge, oatmeal cakes, milk, fish, meat and potatoes. He gives no money to sellers of spirits, wines, beers, or porters—and contributes nothing to the revenue through the consumption of tobacco. The Food Controller's rations suit him all right, and if they represent economy there must have been an appalling waste of wholesome food in this country.

In the midst of all this the farmer is having rather an unpleasant time. He is being summoned to produce more food with less labor—and at greatly enhanced cost for feeding stuffs and manures. He is restricted to certain prices for milk, yet the government which will not allow him to charge more than a specified figure per gallon for the produce of the cow, imposes no restriction on the price that the manufacturer and merchant may charge him for the food of the cow. The government refuses to do anything to regulate wages and competes for all efficient labor, either through the Army or through the munition works. The British farmer in fact is in some departments of his business being harassed beyond endurance, and it is announced that the Prime Minister is himself to deal with the problem on Monday. Take the potato situation as a case in point. The crop of 1916 in Scotland was generally a failure. In place of growing far more than she needs for herself and exporting to England, Scotland has had to import potatoes from England for months past. Now the Food Controller steps in and says the consumer must not be charged more than 1½d. per lb., or 1s. 9d. per stone, or £14 per ton for his potatoes, and the farmer must not charge the middle man or distributor more than £8 per ton for potatoes. In other words, for some unaccountable reason the Food Controller says the distributor must get £6 per ton for his work, or only £2 less than the man who grows the crop. But £8 per ton will never purchase potatoes in England for delivery in Scotland, and the outlook would seem to be that we will have to do without potatoes in Scotland altogether. For some reason, which is equally difficult to fathom, the Food Controller has also announced that the minimum price of potatoes of crop 1917 is to be £5 15s. per ton, but this applies only to the main crop as it is called, that is to the crop that is lifted in autumn and stored for winter and spring use. The early potato grower, and the grower of the second earlies are to have a free hand. The purpose of this is to encourage these gentlemen to go ahead and have their crops as early and as big as possible. The Food problem of these islands will be acute between this date and the middle of June.

To crown all other difficulties, most of the country has been in the grip of a severe frost for the past four or five weeks. In some places ploughing has gone ahead all the time, but in others and in most a period of heavy rains, during which the land became waterlogged, has been followed by a period of hard frost, and agricultural work is now very much in arrears. Under normal labor conditions this would not have mattered so very much. The frost does good to the soil, and will make it to be all the more easily cultivated when the thaw comes, but the scarcity of labor accentuates the problem, and it is quite impossible to view the future with equanimity. Much has been done in the more favored parts of the country to expedite matters, and in these areas a much greater breadth of winter wheat has been sown with the help of the Mogul, Overtime, and other tractors and the three-furrow plough. This affords a silver lining to the cloud; the misfortune is that the area to which these remarks apply is relatively not great and most of the land in Scotland is better adapted for growing oats than wheat. There is nothing the matter with oats as food for either man or beast, and were the weather now to open up, a great breadth would be sown with oats and also with barley. What we want now is good, dry, open weather, without frost, and as much efficient labor as can possibly be secured. With these a good deal may yet be done to grow much

greater crops of cereals than we have been accustomed to in the past.

I see from Canadian exchanges that many of your people are becoming agitated concerning the subjection of this old Mother Country to the drink demon. You cannot be more astonished and indignant than many of us here are. Why the Government of this country will not take the liquor traffic by the throat and strangle it forever is one of the things which I cannot understand. Since ever I understood anything about social affairs I have been an advocate of the only efficient method of grappling with the liquor fiend. That method is two-fold: total abstinence for the individual and total prohibition for the state. Until these twin reforms go hand in hand there will be misery and slums and disease, wretchedness, poverty and death in all our borders. It appears that a good deal is being done to extinguish the trade, but the process is dreadfully slow, and it is unequal. The government plead that very little whiskey is now being manufactured, but that fact counts for little when we are told that there is about four years' supply of the vile stuff in bond. Distilleries are now engaged in the manufacture of spirit for munitions. That is well, but the stuff that is in bond should be utilized to that end, and distillation should cease. In the case of brewing it is admitted that millions of quarters of barley and hundreds of thousands of tons of sugar are being wasted in the manufacture of beer. The Food Controller has let it be known that the alternative of Bread versus Beer may have to be faced. Why it should not be faced at once baffles the comprehension of most men who love their country. The great shipbuilders and engineers on the Clyde were urged by the government to increase their output. They replied if you wish the output of work increased you must prohibit the sale of intoxicating liquor in the Clyde area. Evidence in support of the employers' statement everywhere presents itself. Yet the government will try every expedient before they will face the only direct and efficient remedy, the prohibition of the traffic altogether. The issue Bread v. Beer may shortly become so acute that temporizing will no longer avail. God speed the day—alike for the salvation of our youth who are bravely fighting our battles, and the stability of the empire in the hour of victory.

A cognate subject is the handicap on agriculture through the prominence given to sport in many of its phases in this country. Whole areas of the grazing districts are given over to what are called deer forests. Game of all kinds are reared at the farmers' expense, and shot and sold for the landowners' profit. Much land that could be utilized for grazing and some for cropping is taken up with golf courses. These things have long been grievances to farmers, and hard to bear. Some of them under war pressure have been subjected to at least temporary remedy. Farmers have been empowered to destroy deer at sight when found destroying crops. The artificial feeding of pheasants has been prohibited, and now farmers are given leave to shoot pheasants, even during the breeding season if they are found to be destroying crops. On many estates farmers are allowed an absolutely free hand to kill down rabbits, which multiply very rapidly, and are sheer vermin, only they make quite good food, and are selling at present for good money. The natural enemies of rats, which are peculiarly destructive, have been for many years worthlessly destroyed, because it was supposed that while they destroyed rats, such beasts and birds as the weasel the stoat, and the ermine, and the owl, and the kestrel, also destroyed game. Hence a ruthless warfare was waged upon these beasts and birds of prey with the result that rats, sparrows and wood-pigeons have increased to an enormous extent. They are very destructive. The feeling grows and it cannot be too sedulously fostered, that never under any circumstances should agriculture hereafter be made subordinate to sport.

I had meant to say something about our spring bull sales, but that will keep for a week or two when I will write again.

SCOTLAND YET.

The Cure is Coming.

EDITOR "THE FARMER'S ADVOCATE":

In the Farmer's Advocate of March 1, 1917, under the section "Canada's Young Farmers and Future Leaders", is a letter signed "Rex", headed "Figures on Good Returns." It is a good letter, in which he figures the returns he should plan to make on a farm with 75 acres of good land under cultivation.

I am writing neither as a farmer nor as a business man, but as one with a strong leaning towards and a great interest in farming, and one who, as a physician, is constantly driving about the country and mixing with the farmers and their families.

What strikes me in this letter is the large amount of capital invested in the proposition, the full year of labor of a capable, interested man, the uncertainty, the risks undertaken, and then the small returns from the combination of capital, labor and risk. Are farmers, as a class, well paid, and is farming a money-making occupation when such a combination gives such a meagre return? This, notice, is given as an optimistic expectation, and our young, inexperienced and untried fledgling is aiming high and this is his ideal. Would any merchant or manufacturer invest \$10,545 in a business and after paying interest and expenses live on a salary of \$345.80? This man is really planning to labor at farming for \$1.00 per day. Now, if he put his \$10,545 at interest at five per cent. he would receive cash \$527.25. Then if he would work on a farm for someone else, he would, working 300 days at \$1.50 per day, earn \$450. His interest and work combined would bring him \$977.25 yearly, and he would be free of care, risk and uncertainty. He could probably safely make his money earn over five per cent. and probably he could earn more than \$1.50 per day, but my figures are very conservative. These figures show that a young man as a farm laborer can earn more than the farmer, so that the joke about the farm-hand taking in time the farm for wages due, may be no joke at all but a bitter reality.

Can the ordinary young farmer without capital find anyone (magnate or bank) that would loan him \$10,545 to invest in farm and stock, said farmer proving that he could finance it, pay interest and clear \$1.00 per day for himself? I do not think he could find anyone who would take the risk. If he did, he would find that he would have to pay out not less than seven per cent. interest. If he got the money at seven per cent. interest, the interest, instead of being \$527.25, would be \$738.25, an increase of \$211. His net income would thus be reduced to \$661.05. Take his interest from this and where does he stand? Could he live on the return from his labor?

Now, is not the small amount of money that a farmer is able to make from his year of toil, for it is toil, though often pleasant toil, the real reason that the farmer's sons drift cityward? Like the wind blowing towards the low barometric level, or the tide flowing under the moon's attraction, they obey the laws of commerce and drift towards the higher wage. Instead of such a showing as the above, the farm as a business proposition should pay interest on the investment at six per cent., taxes, insurance on the buildings, and at least \$1,000 a year as salary to a sober, capable farm manager, and something over, say for a sinking fund or for needed improvements.

When it does this, and not till then, will the farms be re-peopled, and the country villages be busy, pleasant places, humming with the local activities. It is coming, too, in time. Before it comes, however, everything

raised on the farm must bring a larger price than at present, (even in these war times), and more in keeping with the actual cost of manufacturing the farm products.

When the farmers learn the value of union and co-operation and will stick to one another they will control the policies of the nation. The Grain Growers' Association of the West is a sample, and points the way. As in the golden age of farming, each yeoman must own and till his own land, and unite for strength, earning a comfortable living and having an adequate voice in legislation.

Then, the favored manufacturer under our present tariff, will have to stand (not be bolstered) on a real business basis, and the Canadian Government will not dare to cripple and handicap the farmer by tariff, nor by embargoes on horses, hogs and wheat.

What a lure there is to the land, and how pleasant must agriculture be to the human animal, when men will work on farms for such small returns and labor under such disadvantages as at present.

N. S.

M. D.

The Importance of Agriculture.

EDITOR "THE FARMER'S ADVOCATE":

I only hope that all farmers and townspeople, politicians and everybody else, rich and poor, have read one of Lloyd-George's speeches recently delivered in the British House of Commons, and which has been printed in many of our newspapers in this country. It is one of the greatest endorsements of that saying hundreds of years old that what a man or nation sows, that shall they also reap. The destruction of British shipping by German submarines has brought out clearly that a country, however powerful and rich in money, without a thickly populated, industrious and contented rural population is liable to disaster at any time.

The shortage of food in the Old Country could have been to a great extent avoided if they had seen the value of agriculture and home production in its true light. Miserable old land laws bound the farmers and crofters to a certain mode of cropping and other things as bad which drove the people off the land into towns, others to seek a living in different parts of the world when there were hundreds and thousands of acres lying idle in deer forests and overrun with game for the selfish ends of the few. The writer of this note could show anybody a strip of country where in a radius of five miles there were a few years ago fifty families living each raising plenty of food for themselves and producing food of all kinds for the nation. To-day there is not one left. By short-sighted policy they not only lowered the food production, but the number of families as well, and the need is being felt to-day. Although not the same, there are causes at work in the United States and Canada slowly and silently sucking the very life and vitality out of the rural community, and working against its best interests. Because a few heads of banks and big business are getting rich is not the surest sign of prosperity. They say to us, "Get out of your old rut; get scientific methods into your farming; don't allow your family to leave the farm; give your boy a pig or a calf to raise for himself, and the daughters a few hens; get up a few entertainments in the neighborhood; that's all they need to keep them on the farm."

I will only ask one question. I will not attempt to say anything myself, but am willing to abide by the conscientious answer of the majority of my fellow countrymen. If by some scientific miracle we could raise our production, three hundred per cent. this season, would the country as a whole be much better off and who, under the present conditions, would get the benefit of it?

Elgin Co., Ont.

WILLIAM LAWRENCE.

Automobiles, Farm Machinery and Farm Motors.

Gasoline Engine Information.

EDITOR "THE FARMER'S ADVOCATE":

While looking over the columns of your valuable paper I noticed the heading, "Automobiles, Farm Machinery, and Farm Motors." As we operate an eight H. P., four-cyl. gasoline engine and have had some interesting experiences, I am sending this letter to you hoping that it may help those who operate the same kind of engine.

We have been working a six H. P. of the same make for three years and found it necessary to change for an eight to have sufficient power to drive our twenty-four-inch cylinder, blower threshing machine successfully, and have found three things are mostly the cause of our engine stopping or not running satisfactorily, viz.: poor ignition, poor compression, or in the getting of fuel in proper amounts.

Compression is caused by the drawing of air through the in-take valve, as the plunger has drawn the full stroke the valve closes and the plunger going back into the cylinder causes a compression of air thus making a greater and stronger explosion. Trouble in compression may likely be found either in a valve sticking or the air rushing between the rings out of the cylinder.

Poor ignition is mostly due to weak batteries, a broken spark plug, or wire spark plug points may be either sprung together or apart making no spark, switch may be open, or engine not timing right. Back-firing is caused by poor ignition.

Fuel is also a very important part of the engine both in getting power and running satisfactorily. Some

engines pump the gas in to the carburetor while others draw by the suction of the plunger. If pump is attached trouble is sometimes found in poor packing in the pump or in a pipe. If needle valve or gasoline tap is opened too wide engine will flood and have little power or sometimes stop, this may be discovered at the end of the exhaust pipe by engine discharging black smoke, blue smoke is an indication of an overflow of cylinder oil.

Never run an engine if it is pounding, stop and remedy the trouble at once. This is likely due to a loose bearing. Never let water remain in the jacket of the engine on a frosty day. Don't leave the batteries or spark coil in a damp place, and always strain the gasoline.

Gasoline engines cannot get too much attention. They are like any other piece of machinery, they have to be kept in good running order, and I think the time has arrived that power on the farm is just as important as is the self-binder.

Bruce Co., Ont.

HERBERT CARTER.

All About Wheels.

Buyers of automobiles are sometimes very funny people. We met a man one day who purchased a new car, and here are his introductory words, "Show me how to fix those tires, if I should get any punctures, and those are all the instructions I'll ask of you." He had the situation sized up with a great deal of accuracy. Many motor cars are so perfect in their mechanism that they require practically no attention. All that a driver needs

to know if everything is running smoothly is how to keep enough air in the tires to support the weight of the machine and its passengers. This brings us to a discussion of wheels, most of which are of what is known as the artillery type, but recently a few have come on the market with wire construction. The latter-type, however, is not common as yet, and so it would seem folly to waste many words in an essay upon their good and bad qualities.

Artillery wheels usually have twelve spokes made of second growth hickory or of ash. These spokes meet in the centre and are bolted between the flanges of a steel hub. The front wheels are without any particular attachment, but those on the rear carry steel brake drums that create resistance through expansion and contraction. The outer rim of a wooden wheel has a casing of steel which is called a felloe band, and upon this band the demountable rim is held in place by lugs. The only care that it is necessary to give to the spokes and the wooden rims is based upon freedom from mud and oil. Should you, at any time, skid into a curb or other heavy obstacle and break a spoke or two, do not think it necessary to buy an entirely new wheel from a garage or factory, as the damaged spokes can be replaced at far less cost than would be entailed in the purchase of a new wheel. The demountable rims are placed on wheels in order to exclude a lot of annoyances. These rims allow the tire to be removed without deflating and a fully inflated tire put on. The lugs provide the pressure which keeps the rim tight upon the felloe band.

Here is the operation that you must follow upon noticing that a tire is flat through a blow-out or an

ordinary puncture. Go into your tool box and pick out the demountable rim wrench. Then loosen all the bolts that hold the lugs in place except those two which are on either side of the valve stem. When you have completed this operation, jack the wheel up so that it will spin with freedom. Then see that the valve stem is at the top. Your next movement will be to loosen the two remaining bolts on the lug close to the valve stem and following this, it will be necessary to so move the lugs that they will not be in the road of the rim and tire when you are prepared to take them off. The reason we have asked you to loosen all but two of the lugs before jacking up the car, is because it is easier to work with the demountable rim wrench when the weight of the car is holding the wheel in place than it is when the wheel is jacked up and allowed to spin. Now you are ready to use the tire tool between the rim and felloe band opposite the valve stem. By prying the rim off the wheel and by revolving the wheel until the valve stem is down, the rim with the tire attached

can be easily taken off. The next step is to take down your extra tire and rim from the carrier at the rear or side of the car and place it over the felloe band. This operation is best done when the valve stem hole is up. Having completed this operation, tighten the lug bolts with your demountable rim wrench, remove the jack from the car, and then again use the wrench in order that every bolt may be screwed up as firmly as possible.

If you are only going to have one puncture on every trip you take, it will not be necessary to read the balance of this article, but you may have two, three, four or even five and so we would strongly advise that you go a little further into the investigation of the rim question. If, after you have used your spare tire, you pick up another puncture, it will now become imperative that you carry out some patch work. To take the rim out of the tire, lay the rim and tire flat so that the end farthest from the valve stem is up. Now remove the anchor plate which binds the split in the rim. You will now insert the sharp end of the tire tool under

the head of the tire and by working it forward logically, gradually force the rim from the casing and tube. When the patch work is finished, you will find it essential to replace the tire on the rim, and this is done by first inserting the tube, slightly inflated, making it smooth and even all around. Now lay the rim flat on a floor or other smooth surface with the tire on the rim. Raise the end of the rim that has been drilled for the valve stem, and after the latter has been inserted, put both beads of the tire into the end of the rim that has been raised, for a distance of about six inches, all the time making sure that the other end of the rim is still under both beads of the tire. Follow this system all the way around the tire but do not permit the other end of the rim to slip into place until the very last. After the tire is properly fitted, it is an easy matter to slip the anchor plate into position and screw down the valve stem nut. You can now inflate the tire to the proper number of pounds.

AUTO.

Canada's Young Farmers and Future Leaders.

A System for a 100-Acre Farm.

EDITOR "THE FARMER'S ADVOCATE":

As a general rule any theory or plan that will work out on the average-sized, 100-acre farm will be applicable to larger or smaller holdings, simply by increasing or decreasing the working capital, or, as the railroads say, "the rolling stock." Yet it is a difficult matter to arrange a set program that will either be a success for two consecutive farms or seasons, when we consider the vast changes in climatic conditions which we have had to deal with during the past two years. Therefore, any suggestions which I may have to offer will be given with the idea not that they are altogether practical, but merely as the writer would consider his own farm to be at its best.

In the district in which this is written, mixed farming is practiced almost exclusively. Some few farmers situated close to railway stations specialize, to some extent, in dairying and shipping cream to outside points, while a few others grow both turnips and potatoes for sale; but from the general viewpoint practically everything taken from the soil is returned to it in one form or another. The average farm has high land and low land, as well as good and poor of both. Probably from ten to fifteen acres might be safely deducted from the ordinary 100-acre lot, as entirely unfitted for cropping and is useful only for reforestry or some small returns for pasturing.

We shall suppose this farm is divided into average-sized fields of from eight to twelve acres. Well, if we are to take into account the growing of corn for silage purposes, we shall first be up against one of the chief reasons why corn dislocates the average system of crop rotation, as practiced on most farms. We all recognize, and it has been proven by past experience, that corn will always do better planted on a field that has been plowed out of sod. Most farmers practice seeding to grass with the following grain crop, after a field has been manured and rocted to place it in condition to ensure a good catch of clover and timothy. If we practice this plan with corn we shall see that we must develop a short rotation: corn, grain, and one or two grass crops. We shall immediately see that we would have too many roots to be handled by one man in each season. Now we know that some land is more suited to grow one crop than another, so I have worked out a plan to use the three most suitable plots on the farm for corn alone, and practice a three-year rotation on this land—corn, grain, clover. I believe that this would ensure a maximum crop for every year, as corn demands high and warm land to mature properly. This division of a farm would take in probably twenty-five acres, so it would leave some seventy-five to be reckoned with. We could divide this up as necessity arose, following a general plan of roots, grain, hay and grain again till time to root or summer-fallow. Try and keep the low land as much as possible under grass, as such land usually produces more in that way than by taking it into the regular rotation.

With regard to grain I believe that for the man who grows it for feed alone it always pays to have it mixed. Oats and barley, with sometimes a little wheat, make a mixture that can be relied on to produce as much if not more than either separately, and is much to be preferred when used for feed. One field might be reserved for oats alone to grow seed and horse feed. Roots again are an important factor in feeding live stock. Roots again are an important factor in feeding live stock, and from three to four acres of mangels and turnips, together with a plot of four acres of rape for fall pasture, ought to accommodate the needs of the one-headed acre farm. No doubt, in order to feed a crop that ought to be produced on such a farm, it would be necessary to hire pasture for at least a portion of the live stock.

This farm ought to support and bring to a marketable age from fifteen to twenty cattle, some dozen breeding ewes, and fatten out from twenty to twenty-five hogs annually. I can not see but what one good brood sow is almost enough for any farm, as hogs are such heavy grain eaters that they rob the other stock of

their just share, unless considerable grain is bought. Five or six good, well-bred Shorthorn grade cows will usually produce calves that are no disgrace and still pay as they go with the milk pail. If possible feed off the young cattle at from twenty-four to thirty months of age. Calves dropped through the winter should be ready for market in May or June of the second year. I would like to say a good word in favor of sheep, as I believe they are our greatest help in holding weeds in check. If you do not keep too many, the King's highway is an ideal spot to pasture the ewes and lambs in the early summer months, and as soon as fields are cleared they perform great service as weed destroyers on the farm. I have often said that the way we got even with the King and his taxes was that the wool from the sheep paid for their keep during the winter, and we used his lands for summer pasture and sold the lambs to pay the taxes. We really made the roads support themselves. However, the roadsides would soon be in a deplorable condition of neglected weed gardens were it not for sheep. I am not a great believer in keeping very many horses. Three good horses will work nearly any 100-acre farm, and more seem burdensome to feed. However, it may pay to raise a colt occasionally if you see you will need a horse later on. No farm would be complete without a small flock of hens, and, if properly cared for, twenty-five hens can be of great service in balancing store bills and so forth.

In running a farm in this manner, mostly everything would be marketed on the hoof, so even if you were a distance from a station it would not make a great difference. As a rule, if you can produce the goods you will easily find a market. Now all this talk is not backed by deeds, but still it is an ideal which I at least believe to be workable, with such changes as different communities and farms demand.

Wellington Co., Ont.

W. McK.

Would Select a Farm Close to the Market.

EDITOR "THE FARMER'S ADVOCATE":

The size of the ideal farm depends largely on locality. In the Northwest Provinces, a man does not think he is a farmer unless he has at least a quarter section, while in Belgium or France a farmer is quite contented with twenty or twenty-five acres. The choice of a farm, therefore, must depend on one's inclination, whether he favors extensive or intensive cultivation. For my part, I prefer a happy medium, and would choose a place of about one hundred acres. This would allow plenty of scope for a man's ambitions, and could, if labor problems became acute, be managed by one or two men. Also, I believe for efficient national service, a small farm well tilled is better than a large farm indifferently cultivated.

No soil is suited for all purposes, but most are suited for some purpose. It must be adapted to the system of farming that is going to be pursued. For mixed farming, an average clay loam with gravelly sub-soil is very good. The gravel has a tendency to drain the land, but when it comes too close to the surface, applied fertilizer leaches away too quickly to be used as plant food. In a clay sub-soil, systems of underdrains must be used to provide adequate drainage. This is probably the ideal way, as drains may be put at the correct depth and distance apart for best results. Good natural drainage is required, however, for legumes, fruit trees and other crops which cannot stand "wet feet."

As I stated previously, I would follow mixed farming. Perhaps it does not pay better than specialized farming; in fact, many men have amassed fortunes in a comparatively short time by working on a particular line, but I believe a man should follow his proclivity. When a man has several lines to take his attention, he has more room for expansion than he who has only one groove to run in. Moreover, a farmer who depends on one paying crop may lose practically one year's income if adverse weather betrays him, while his neighbor who

carries his eggs in several baskets is fairly sure to emerge favorably on some line.

In stocking my farm, I would choose heavy horses and beef cattle, largely. I believe there is, and will in all probability continue to be, a growing demand for both. The war has depleted the European countries of their draft horses as well as their beef producers, and the need for furnishing a new supply is self-evident. Of course Canada cannot meet this demand wholly, but she should be prepared to do her part, and the Canadian farmer should incidentally share in the pecuniary advantages which will accrue. It will take many years to restore the war-worn nations to their ante-bellum condition, so that the demand I have alluded to will not be a merely temporary one.

Sheep will also find a place on my farm. The breed that is best to select may be in dispute, but I would incline to Leicesters as they are hardy and dress well. They go well with beef cattle, require little attention and are doubly profitable, since they not only provide hide, wool and mutton, but do a man's work, and thus save his wages, by their destruction of weeds.

Every farm should have its scavenger in the shape of the hog. He turns into handy cash much refuse and by-products which are not otherwise marketable. He may not be much of a pet, but for the place he fills and the price he commands, is worthy of all praise. As breakfast bacon, he is welcomed at the rich man's table; as ham sandwich, he is universally in demand; while in the absence of the butcher shop or beef ring, the pork-barrel fills the bill.

No farm is complete without a small flock of hens. They do not require an expensive shelter, and if allowed to run in the orchard during the summer and fall, destroy many apple pests which would otherwise reproduce their kind.

A system of cropping should be followed which will keep up or increase the fertility of the soil. The old-fashioned summer fallow has been superseded by, and modified into the corn crop. Corn is recognized as a necessity where many cattle are kept, while mangels and turnips form a succulent feed which the stockman cannot well be without.

I would aim to have about one-quarter of the farm in legumes, alfalfa being my first choice, then hay, oats and barley would be grown for feeding purposes, although the Western farmer can grow wheat cheaper than we can in Ontario, I would not care to be without some. In the above crops all the straw, and all the grain except the wheat, would be returned to the soil as manure.

The orchard, which provides man with one of the most wholesome of luxuries, must not be overlooked. The garden, with it, should be handy to the house. A small plot of tried varieties of apples might be augmented by some good sellers, if marketing facilities permit. Far be it from me to dictate what vegetables should be grown; the good housewife could please herself on that point, as long as a few onions and tomatoes were included on the list.

Given the above conditions, I would prefer to live within easy distance of Toronto. From what I have seen in several States of the Union, and from the glamorous tales from Alberta and Saskatchewan, I have, as yet, found nothing to persuade me to sever my ties with the banner County of York. The suburban system of electric railroads, coupled with the network of county roads, brings one of Canada's best markets almost to our doors. A community in which there is a progressive Farmers' Club offers special advantages. It is the key to a better understanding between the producer and the consumer, and incidentally, an excellent weapon to oust the middleman from his stronghold.

And may I say in conclusion that a man needs something to take his thoughts off the daily grind; so we must have a church, for after all

"The soul of all improvement

Is the improvement of the soul."

York Co., Ont.

JOS. A. SNIDER.

Household economists who leave eggs out of recipes and put in other more expensive ingredients are, unconsciously, big factors in the high cost of living.

THE DAIRY.

Energy Value of Feeds Expressed in Therms.

EDITOR "THE FARMER'S ADVOCATE":

The casual reader is fairly well acquainted now with the word "calorie" or unit of energy. In these days of so-called health-squads among various sets of individuals, and when the general public is devoting more attention than ever to obtaining the utmost food value at low cost, a further glimpse into the problem of energy values will be of interest.

In a general way it is understood that a man at light work needs about 2,500 calories per day, most people eat considerably more; a fairly good meal supplies from 800 to 1,200 calories. Naturally, each food consumed supplies its own measure of energy; for instance, a teaspoon of sugar gives about 20, while two boiled eggs supply 180 calories. It is also worth noting that a lunch of about ten ounces of bread and a pint of skim milk will furnish 925 calories at a cost of roughly five or six cents; whereas an ordinary restaurant meal of soup, beef, potatoes, turnips, bread, butter and coffee will furnish only 940 calories, and will cost at least five times as much as the homely bread and milk.

Turning from this fascinating human side to a consideration of the dairy cow, the sup-r-valuable economist of the farm, and her needs, it is recalled that feeding standards, based on a study of the digestible nutrients, that is, the protein, carbohydrates and fat, that are contained in feeding stuffs, have been available for the computation of dairy rations for over fifty years. The wise dairyman by their use, is able to derive the very best results from suitable combinations of the various feeds at his command, so as to obtain the maximum production of milk and fat. Sometimes the intelligent re-arrangement of a ration has resulted in a saving of five cents per cow per day for feed, and a gain of twenty per cent. profit.

A somewhat new expression is now finding its way into dairy literature, the word "therm" being employed to describe one thousand calories of net energy in feed. It has been introduced by Dr. H. P. Armsby of State College, Pennsylvania, who suggests it to include the combined value of carbohydrates and fat as used in the older type of feeding standards.

The word seems a happy choice; we are familiar with thermometers and thermos bottles. We know that "better" coal, containing more heat energy, quickly raises the mercury in the heat measurer when consumed in a stove. As all food may be rationally considered as the fuel of the body, the feeding problem is to make the best possible use of the fuel or energy value in the available feeds. Value is largely determined by the amount of energy it is possible to get out of feed and convert into other forms of energy, such as heat, work, meat, milk, etc. Much energy is lost in this conversion: with roughage, about forty per cent.; with concentrates, between ten and thirty per cent., by ruminants.

The gross energy contained in ordinary feeds varies considerably. Certain proportions of this gross energy are lost in the various processes in the animal body, the remainder is the valuable net energy values. It is only this net energy, the quantity supplied in excess of the animal's requirement for actual maintenance, which assists in beef or milk production.

Dr. Armsby classes nutrients under two heads: those going to form nitrogenous substances, and those used for heat, fat production and energy. The amount of digestible albuminoids is the measure for one, and the total heat value of the nutrients is used for the other. Thus we have just two terms, digestible protein and energy value. Here, then, is the new introduction, the word "therm" as a convenient name for representing one thousand calories or units of this net energy value.

It is just as well to have this perfectly clear, for the word therm is not to be found in every dictionary, and for some curious reason or other it is disguised by some writers under the expression "thermic unit."

It seems to be a simplified means of dealing with feed stuffs generally; for the values of carbohydrates and fat, which are frequently loaded with a rather bewildering array of figures (the carbohydrates being again sometimes sub-divided into percentages of fibre and nitrogen free extract) can by this new proposal be expressed briefly and calculated as therms.

The second important point which our dairymen will do well to notice is that as the result of abundance of experimental work a change has been made in the standard for rations, so that now only five tenths of a pound of protein is given as the maintenance requirement for a 1,000-lb. cow in place of the old figure or seven-tenths. In addition to that half pound of digestible true protein the maintenance requirement is expressed as six therms of net energy.

From the many excellent tables in bulletins published by the Pennsylvania State College it is easy to compute dairy rations from any feeds available by the dairyman, having due regard to the primary rules of the art of feeding, as well as the scientific necessity of balancing rations.

Supposing a cow is giving 20 pounds of milk testing 4.5 per cent. of fat, it is readily found that the requirements are 1.01 lbs. true protein, and 5.8 therms net energy. The total requirements therefore for maintenance and milk stand at 1.54 lbs. true protein and 11.8 therms net energy.

CHAS. F. WHITLEY.

Dairy Records Branch, Ottawa, Ont.

The Value of Pasteurized Whey.

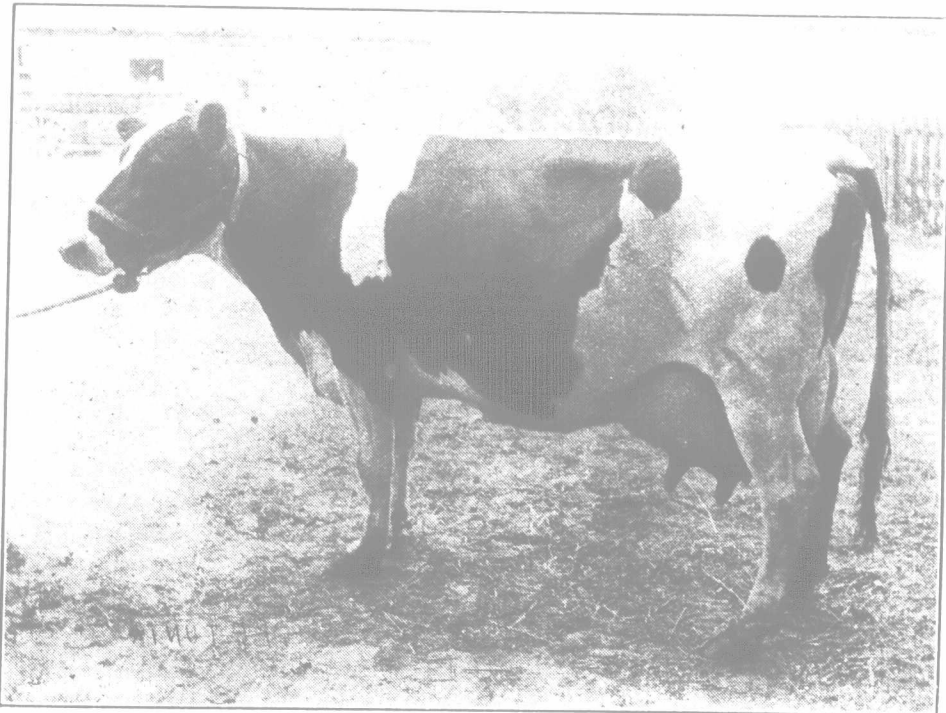
Certain lines of farming are more profitable than others, owing to the fact that they furnish a by-product which has a certain value. Dairying is a well marked example. The by-products of butter-and-cheese-making have considerable value for feeding stock, particularly young animals. Skim-milk is recognized as an excellent feed for calves, pigs and poultry. Whey and butter-milk, while not so valuable as skim-milk, will reduce the cost of producing pork if fed judiciously. However, many feeders look upon whey as being unfit for animal

tendency to float on the top of the whey in the tank when it is not pasteurized. Consequently, there is an uneven distribution of this feed constituent to the farmers. Milk products constitute an excellent place for germ life to grow and produce putrefactive flavors. These reproduce very readily in sour whey, and become lodged in the crevices of milk cans, and unless extra care is taken it is impossible to remove them when washing the can. Consequently they start bad flavors in the milk, which sometimes develop considerably before the milk reaches the factory. When the whey becomes very sour the sugar which it contains is changed into lactic acid. This reduces its feed value, and the acid affects the tin of the can. These evils are overcome by pasteurization. It is inconsistent for cheesemakers to ask their patrons to adopt improved methods of caring for milk so long as they permit them to put sour, foul-smelling whey into their cans. With the proper system of pasteurization many of the evils mentioned are overcome, and experiments have proven that there is practically the same percentage of fat returned to the farm with whey as is returned with whey when it comes off the curd. This is not the case under the system in vogue in practically ninety per cent. of the factories in Eastern Ontario. The disease known as tuberculosis is finding its way into many herds, and it is possible that the germs of this dread disease may be carried through the medium of whey and infect animals to which it may be fed. These germs are destroyed by the application of heat at 155 to 160 degrees, or the temperature which is recommended for pasteurizing whey. From this standpoint, together with the extra care with which the cans can be cleaned when the whey is returned sweet, are sufficient arguments to warrant patrons of every cheese factory demanding that the whey be pasteurized.

The feed value of whey should also be considered. Regarding whey for calves, information in "Feeds and Feeding", by Henry, is to the effect that whey which is acid and often loaded with germs deranges digestion and is unsuited for calf feeding, but where it is pasteurized and can be obtained sweet and undiluted, whey may give fair results when fed under the strictest rules as to quantity, regularity of feeding and cleanliness of the vessels employed. In an experiment recorded, calves fed whey gained from one to one-and-one-third pounds per day, while skim-milk-fed calves made two pounds gain. At the Kansas Station, calves were changed from skim-milk to whey when from three to five weeks old, and from 10 to 14 pounds of whey were fed daily together with alfalfa hay and ground oats. These calves were thrifty and healthy but not quite so fat as those getting skim-milk. The protein part of the milk goes into the cheese, consequently whey should be supplemented with feeds rich in this nutrient. Feeds which are high in protein, such as bran and linseed meal, should be combined with it. Whey is more generally fed to hogs than to calves, and results show that it has considerable value. The experiments carried on in different parts of the country go to show that whey is worth about half as much as skim-milk for pig feeding. No set amount can be given, as the value depends largely on the price of other feeds, and age of animals. For instance, when feeding corn and barley meal it was found that a thousand pounds of whey are equal to a hundred pounds of cornmeal for fattening swine. In another experiment 744.5 pounds of sweet whey was equal to 100 pounds of mixed meal. Figuring meal worth \$2.40 per cwt. at the present time, this would give whey a value of practically 32 cents per hundred pounds, and yet some dairymen claim that it has no value.

Taking the amount of milk delivered to the factories in Eastern Ontario and dividing it by the number of patrons, it is found that on an average a patron delivers to a factory about 33,000 pounds of milk per factory season. Considering that for each 100 pounds of milk there are in the neighborhood of 90 pounds of whey, this would be worth about \$94 to each patron for feeding hogs. Of course, with grain only half the price, whey would have only half the value.

When whey is run off the vat it has a temperature around 97 or 98 degrees, and pasteurization should begin then in order to prevent the development of acid and to take advantage of the temperature. By means of steam from the boiler the whey in the tank should be heated to 155 degrees. This temperature arrests the growth of bacteria and if the tank is properly constructed and has a tight cover, the whey will be warm and sweet when it goes into the patrons' cans the following morning. Care should be taken not to raise the temperature above 160 degrees as there is danger of precipitating the albumen and causing the whey to be slimy. The whey tanks should be cleaned out and sealed every day in order that no bacteria be left to act as a culture. At some factories a man is engaged by the season to measure out the whey to each patron and then thoroughly clean the tank, after which live steam is injected to destroy any germs which might be lurking in the corners or crevices of the tank. Unless the pasteurizing can be done properly and the tanks thoroughly cleaned every day, the results will be disappointing. This work cannot be done for nothing, and as the patrons reap the full benefit they should pay all expenses. It takes a little extra fuel to heat the whey to the temperature mentioned, but at the present price of fuel and labor it is doubtful if it would amount to much more than one-half cent per hundred pounds. True, it may require a little larger boiler than the one in use, and extra piping and a pump will be necessary, but considering everything the expense is a mere trifle as compared with the advantages of having the whey always delivered sweet. In the very near future every cheese factory should be equipped to pasteurize the whey; in fact, the patrons should demand it.



Royalton Petunia 2nd 19366.

Seven-day record: Milk, 545.3 lbs.; butter, 25.17 lbs.

consumption and do not consider it of sufficient use to draw it from the factory. Possibly because of the way whey and whey tanks are looked after at quite a large percentage of the factories, the product has little value. On the other hand stockmen have found that if it is properly pasteurized, pigs and calves do fairly well on it at a considerable saving in grain. Unpasteurized whey is not as good feed, nor is it as safe to feed as pasteurized whey, and yet although it costs only a trifle to pasteurize it at the factory only nine and one-half per cent. of the cheese factories in Eastern Ontario, and about fifty per cent. in Western Ontario pasteurized the whey in 1916.

In the making of cheese the casein, albumen, and a large percentage of the fat in milk enters into the composition of cheese, thus leaving a small amount of ash and fat and a considerable quantity of milk-sugar in the by-product. The average composition of whey is 93.4 per cent. water, .7 per cent. ash, .8 per cent. protein, 4.8 per cent. carbohydrates—which are largely sugar—and 3 per cent. fat. This is only 3 per cent. less dry matter than is found in roots, which are considered so valuable for feeding stock. Patrons of cheese factories who have once used pasteurized whey recognize its value and would be loth to return to the day when sour, ill-smelling whey was returned to them in the cans which were to carry the milk to the factory the next morning. Theoretically and in practice, whey has a feed value, especially when it is fed sweet.

There are a number of reasons why whey should be pasteurized before it leaves the factory; for instance, there is a certain amount of fat left in it and this has a

A New Canadian Milk Record for Three-Year-Old Holsteins.

EDITOR "THE FARMER'S ADVOCATE":

The junior three-year-old Holstein heifer, May Echo Posch, developed and owned by the Dominion Experimental Farm, Ottawa, has just completed a year's official R. O. M. test establishing a new Canadian milk record for the junior three-year-old class. Freshening at three years and twenty-eight days, she produced in 365 days on official test, 24,458.7 pounds of milk and 806.77 pounds of fat, equivalent to 1,008.46 pounds of 80 per cent. butter. This record of May Echo Posch places her second on the World's list of junior three-year-olds for milk production, under official test.

May Echo Posch was bred by F. R. Mallory. Her sire is Dido Count Gerben, a grandson of the famous bull, DeKol 2nd's Butter Boy 3rd. The dam of May Echo Posch is Lawncrest Rosa Posch, a daughter of the famous bull Inka Sylvia Beets Posch, and out of May Echo Darkness. May Echo Darkness in turn is a daughter of the famous sire, Sir Inka Darkness Keyes and out of May Echo Verbelle the dam of May Echo Sylvia, and in turn one of the famous daughters of the great cow, May Echo.

May Echo Posch consumed the following feed during the six weeks before freshening and the twelve months on test.

Meal at \$25.00 per ton, 6,822 lbs.	\$ 85.24
Silage and roots at \$2 per ton, 22,510 lbs.	22.51
Hay at \$7.00 per ton, 2,014 lbs.	7.05
Green feed at \$3.00 per ton, 6,875 lbs.	10.31
Dried beet pulp at \$29.00 per ton, 636 lbs.	9.22

Total cost of feed.....\$134.33

Valuing her eighty per cent. butter at 35 cents per pound, and skim-milk at 20 cents per hundred-weight would show a gross return of \$400.14 with a profit over feed of \$265.81. Had milk been sold at 8 cents per quart the gross return would have amounted to \$782.40, with a profit over feed of \$648.07.

The average per cent. fat in the milk was 3.20. Undoubtedly had this heifer been given a reasonable rest and preparation for calving, the percentage of fat might have been materially higher, at least, during the first two or three months of her lactation period. It will also be noticed that the feed cost to produce 100 pounds of milk was 54.9 cents, and to produce 1 pound of butter, 13.3 cents.

May Echo Posch finished her lactation period on the fifth day of February, 1917, in splendid condition, weighing 1,348 pounds, which was an increase of more than 200 pounds over her weight at the commencement of this period.

Canaan Beauty 2nd, a senior three-year-old Holstein heifer, owned and developed by the Dominion Experimental Farm, Ottawa, has also just completed a year's official test. Freshening at the age of three years six months and twenty-four days, this heifer produced 18,637.5 pounds of milk and 605.32 pounds of fat making 756.79 pounds of butter, testing 80 per cent. fat. Although this is considerably less than her stable mate yet it was a very good record for a heifer at this age. Canaan Beauty 2nd is a great granddaughter of the famous cow Sarah Jewel Hengerveld 3rd, and also a great granddaughter of Lilly's Jude Aakrum de Kol, the sire of many heavy producing cows of excellent type.

Canaan Beauty 2nd, consumed during the two months previous to freshening and the 12 months on official test, the following feed:

Meal at \$25.00 per ton, 6,205 lbs.	\$ 77.56
Silage at \$2.00 per ton, 21,412	21.41
Hay at \$7.00 per ton, 1,852 lbs.	6.48
Green feed at \$3.00 per ton, 6,875 lbs.	10.31
Dried beet pulp at \$29.00 per ton, 368 lbs.	5.34

Total cost of feed.....\$121.10

Valuing her 80 per cent. butter at 35 cents per pound, and the skim-milk at 20 cents per hundredweight the gross return would be \$300.02 or a profit over feed amounting to \$178.92. Valuing the milk at 8 cents per quart the gross return would amount to \$594.16 or a profit over feed amounting to \$473.06. The average per cent fat in the milk from this heifer was 3.34. The average feed cost to produce 100 pounds of milk was 65 cents, and to produce 1 pound of butter was 16 cents.

During the year's test the two heifers above mentioned at no time received all the grain or roughage which they desired. During the first eight months of the year both heifers received practically the same ration which was a mixture of:

Hay (mostly clover)	6 to 8 lbs.
Corn silage	30 lbs.
Roots when available	60 lbs.

This was fed daily in addition to which was given grain, never exceeding 25 pounds daily, and salt. The meal mixture during this period was varied from time to time but was composed of:

Bran	1,400 lbs.
Gluten feed (23%)	400 lbs.
Cotton seed meal (41%)	400 lbs.
Linseed oil meal	400 lbs.
Ground oats	600 lbs.
Peanut oil meal (40%)	400 lbs.

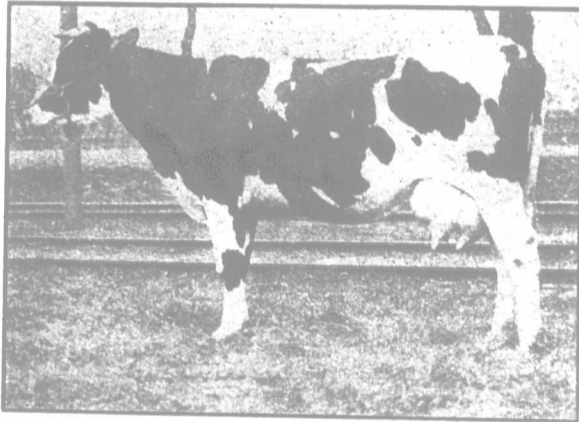
The meal mixture fed these heifers during the latter months of this test was composed of:

Bran	400 lbs.
Dried distiller's grains	200 lbs.
Gluten feed	200 lbs.
Linseed oil cake	100 lbs.
Dried beet pulp	50 lbs.

Even with the comparatively heavy feeding which these heifers received the margin of profit over the feed is exceptionally good. At no time during the period was there any evidence of the heifers being off-feed and they grew rapidly and gained in condition during the latter months on test. The accompanying photographs show these heifers after having milked several months. The credit for these and other good records of cows on official test on the Central Experimental Farm at Ottawa, is largely due to Robert Cunningham, herdsman at this Farm. E. S. ARCHIBALD, Dominion Animal Husbandman.



May Echo Posch.



Canaan Beauty 2nd.

HORTICULTURE.

The Quantity of Garden Seed Required.

The following recommendations may be useful when making up the order for vegetable seeds. The amount of seed of each vegetable is stated for certain length of row:

- Asparagus.—1 oz. to 100 ft. of drill; 2 lbs. will provide roots for 1 acre.
- Beans.—1 pint to 100 ft. of drill; 1 1/4 bus. per acre.
- Beet.—1 oz. to 50 ft. of row; 4 lbs. per acre.
- Brussels sprouts.—1/4 oz. to 100 ft.
- Cabbage.—1 oz. to 300 ft. of drill; 10 oz. produce 2,000 to 2,500 plants.
- Carrot.—1/2 oz. to 100 ft. drill; 2 1/2 lbs. per acre.
- Cauliflower.—1 oz. to 2,500 plants.
- Celery.—1/2 oz. per 100 ft. drill; 2 1/2 lbs. per acre.
- Corn.—1/4 to 1/2 pint to 100 hills; 1 peck per acre.
- Cucumbers.—1 to 2 ozs. to 100 hills; 1 to 2 lbs. per acre.
- Egg plant.—1 oz. produces 2,000 plants.
- Endive.—1/4 oz. to 100 ft. of drill; 4 1/2 lbs. per acre.
- Kale.—1 oz. to 300 ft. of drill.
- Kohl-rabi.—1 oz. to 300 ft. of drill; 4 lbs. per acre.
- Leek.—1 oz. to 100 ft. of drill; 4 lbs. per acre.
- Lettuce.—1/4 oz. to 100 ft. of drill; 3 lbs. per acre.
- Melons (musk).—2 ozs. per 100 hills, 4 x 4 ft.; 2 lbs. per acre.
- Onion.—1 1/2 oz. to 100 ft. drill; 4 to 5 lbs. per acre.
- Onion sets.—1 quart to 50 ft. drill; 8 bus. per acre.
- Parsley.—1/2 oz. to 100 ft. drill; 3 lbs. per acre.
- Peas.—1 to 2 pints to 100 ft. drill; 1 1/2 to 2 1/2 bus. per acre.
- Peppers.—1 oz. produces 1,500 plants.
- Radish.—1 oz. to 100 ft. row; 10 to 12 lbs. per acre.
- Rhubarb.—1 oz. seed to 125 ft. of drill; 3 1/2 lbs. per acre.
- Salsify.—1 oz. seed to 100 ft. drill; 8 lbs. per acre.
- Spinach.—1 oz. to 100 ft. of drill; 5 to 6 lbs. per acre in drills; 30 lbs. per acre broadcast.
- Squash.—8 ozs. to 100 hills.
- Tomato.—1 oz. produces 2,000 to 2,500 plants.
- Turnip.—1 oz. to 200 ft. of drill; 1 to 2 lbs. per acre.

Varieties of Vegetables for the Garden.

Sometimes it is rather perplexing when we have to decide on the proper varieties of vegetables to plant in small gardens. Those who have tried out different kinds, side by side, will have some ideas upon which to base their judgment this spring, but in case they have given it no particular attention we shall suggest a few varieties which are in common use in farm gardens and by the vegetable growers. We shall begin with the crops which are more or less permanent in character; then we shall mention the kinds that are usually transplanted, and third will come those kinds of crops which are seeded in the garden every spring.

Asparagus.—Palmetto, Argenteuil and Conover's Colossal are staple varieties of asparagus.

Rhubarb.—Victoria and Raspberry are good.

Strawberries.—Varieties here depend very much upon soil and local conditions. A good, all-round domestic berry is the Senator Dunlap; the Gandy is an early berry but not an exceptional bearer. The Glen Mary and Sample are two kinds that might be given a place. The Williams and Warfield do well when planted together, on account of the latter being imperfect in the flower. The Williams is very popular among growers who ship large quantities. Its green tip stands it in good stead when shipping, but it does not add to its value for domestic purposes.

Celery.—White Plume or Golden self-blanching are desirable varieties for the early crop. Paris Golden Yellow comes on in mid-season. Giant Pascal and Evans' Triumph are often planted for the late crop.

Tomatoes.—Earlianna is early and a good yielder, but is not usually so smooth as the Chalk's Jewel, which is slightly later. Stone and Success are two varieties that are used considerably under field conditions. Bonny Best, Byron Pink, Ponderosa, Plentiful and Early Detroit are other varieties from which selection can be made.

Melons.—Rocky Ford, Emerald Gem, Hackensack and Montreal Market are good kinds of muskmelons, while Hungarian Honey and Cole's Early of the watermelon type are the most likely to ripen.

Cabbage.—Jersey Wakefield is a good early variety of cabbage, and Early Winnigstadt is another. Copenhagen Market is a medium or autumn kind, while for late the Danish Ball Head is good. All Seasons and Flat Dutch commend themselves. Mammoth Rock is a good red variety.

Cauliflower.—Early Erfurt and Early Snowball should give very good specimens of this crop.

Lettuce.—Make weekly sowings of lettuce, and for varieties select from Grand Rapids, Black Seeded Simpson, Hanson, Big Boston and Paris White Cos.

Radish.—Radishes should be planted at intervals of a week or two. Rosy Jem, Scarlet Turnip, White Tip and French Breakfast are good varieties. It is nice to have two or three different kinds.

Peas.—For the early crop try Extra Early, Alaska, Nott's Excelsior, American Wonder, or Gradus; for late use Advancer or Stratagem.

Beans.—The varieties of garden beans, which are likely to give best results are: Keeney's Rustless Golden Wax, Hudson Wax, Detroit White Wax, Stringless Green Pod, Valentine and Wardell's Kidney Wax.

Cucumbers.—For slicing use Davis Perfect, White Spine, and Cumberland; for pickling, Westerfield and Chicago Pickling are good.

Citrons.—Colorado Preserving and Red Seed.

Beets.—These should be planted for early summer use and about the first of June for winter storing. Egyptian Turnip is an extra early kind. For moderately early try Early Model, Eclipse, and Black Red Ball. For late summer and winter, Detroit Red and Long Smooth Blood give good satisfaction.

Carrots.—Every gardener should try Chantenay; Danvers and Rubicond follow very closely.

Parsnips.—Two good and common varieties are Hollow Crown and Guernsey.

Turnips.—The winter supply can usually be obtained from the field crop of Swedes. For early ones in the garden try Extra Early, Purple Top Milan, and Golden Ball.

Pumpkins.—Sugar and Jumbo are two good varieties.

Squash.—For an early squash use Crookneck or White Best Scallop. Hubbard is a good late variety.

Corn.—Broadly speaking, there is no better variety of garden corn than Golden Bantam. Plantings should be made at intervals of a week or two. Country Gentleman and Stowell's Evergreen are also good, but they are later.

Onions.—The Yellow Globe Danvers, Prizetaker, Red Westerfield, Southport Yellow Globe and Southport Red Globe are the varieties grown, with preference given to the first.

Spinach.—Victoria, Virofly and Bloomfield.

Eggplant.—Black Beauty and New York Improved.

Kohl-rabi.—Early White or Purple Vienna.

Vegetable Marrow.—Long White Bush and English Vegetable Marrow.

Co-operative Vegetable Selling.

EDITOR "THE FARMER'S ADVOCATE":

The value of a single product in vegetable farming co-operatively handled is illustrated by the Annual Report on the business of the Long Island Cauliflower Association, operated and controlled solely by cauliflower-shiping farmers. No others can hold stock. It does not buy any vegetables as a speculation nor store any. It charges a certain sum for acting as a shipping agent and this is not only a smaller sum than

the farmers would be charged by the railroad if they each shipped individually, but is mostly paid back in the form of dividends, the last voted being ten per cent. made possible through earnings on seed sold, crates, rent, interest, etc. The Association is also responsible for all barrels or crates of cauliflowers lost in transit, claims for about \$1,000 worth of "shorts" being made last season when in three fall months about 451,000 crates were handled valued at over \$563,750 in cash payments to the farmers. In addition to this hundreds of tons were sold to pickle men etc., at prices ranging from \$20 to \$100 per ton, bringing up the total value of the crop to nearly \$750,000. Besides the shipments into Greater New York, which consumes the larger part of the crop, the Association handled 339 refrigerator cars to outside cities to keep the New York and Brooklyn markets from being glutted. This organization, one of the most successful in the states, was worked out and is managed by farmers themselves with a board of ten directors, and two inspectors, the officers being a President, Vice-President and Secretary-Treasurer.

ON THE WING.

POULTRY.

Two Types of Trap Nests.

Give directions for making and illustrations of a trap nest. What causes hens to eat their eggs? What method do you recommend for stopping the habit? Huron Co., Ont. T. G.

There are several advantages in using a trap nest, although it is hardly practicable with the farm flock owing to the fact that it is necessary to attend to the nest regularly. The birds should be let out at frequent intervals and this necessitates that a complete round should be made every hour or two until the laying is over for the day. If the birds are cooped up in the nests for a prolonged period each day, their vitality is impaired and production is decreased. Where individual records are desired the trap nest is essential. By its use the best producers can be picked out and the poor layers eliminated. It enables the poultryman to breed only from the best birds. It also gives the poultryman an opportunity to study the transmitting qualities of the various birds in the pen. When it is known exactly what a bird is capable of producing, matings can be made with a degree of certainty as to the results which will be obtained. Thus, while it is not practicable to use the trap nest with the average laying flock, it is serviceable for use in the breeding pen. Men who make a business of poultry raising and devote their whole time and attention to the birds are able to trap nest the whole flock, and in this way select their special breeding pens.

There are many designs of trap nests, but all are so constructed that the hen on entering the nest releases a spring which causes the door to close behind her, making it impossible for her to leave the nest or another hen to enter until the attendant comes along. The nest should be large and roomy. About 12 inches wide, 18 inches deep and 14 inches high is considered to be a satisfactory size. Fig. 1 (above) illustrates one form of trap nest. A shows the nest open and the foot board is two pieces hinged at the bottom and also in the centre. Consequently, when the bird enters the nest her weight causes the foot board to lower and the door to close as is shown in B. The side of this trap nest is removed in order to show the method of construction. The bird is unable to escape without the aid of man. A box of the dimensions previously given can be fitted up into this style of trap nest. Outside of the box itself, a couple of ordinary hinges is all that is necessary. Figure 2 illustrates a nest which is a little more elaborate and possibly a trifle more complicated than the one just described. However, it is not difficult to construct and proves to be efficient.

This style of nest was adopted in Maine several years ago. An orange box or a common box of similar size may be converted into a trap nest, or the nest may be constructed from light lumber. The nest illustrated is 28 inches long, 13 inches wide and 16 inches deep, inside measurement. Twelve inches from the rear there is a division board with a circular opening 7½ inches in diameter. This is placed across the box and the rear apartment is the nest proper. The door at the entrance is composed of a light frame covered with wire netting. This door is about 10 inches square, which leaves room at the top and bottom to prevent friction. The trap consists of one piece of stiff wire 22 inches long. It is shaped so that a part of it 11 inches long rests directly across the circular opening in the division board. This part of the wire is held in place by two clamps. The slots in these clamps allow the wire to work up and down about three inches without friction. The next section of the wire is 8 inches long and is bent at right angles to the 11-inch piece. This is fastened securely to the wall of the nest with staples. The remaining section of the wire, which is 3 inches long, is bent towards the centre of the box with an upward inclination so that it supports the door when it is open. As the hen passes under the open door and through the circular opening to the nest, she raises the wire in the slot, causing the hook which supports the door to move and let it fall. When the door swings shut a wire spring near the bottom of the box locks the hen in and prevents other birds from entering.

Egg-eating by hens is a bad habit which is difficult to control. It is frequently caused by broken eggs in the nests or on the floor, or possibly by lack of some material in their ration. Some poultrymen clip the sharp points off the bills of the culprits; others claim

satisfactory results from filling egg shells with red pepper and placing them in the nests. The trap nest will largely prevent the trouble, or if it does not the birds which are eating the eggs can be discovered and dealt with accordingly. If the nests are partially darkened the trouble will be largely overcome.

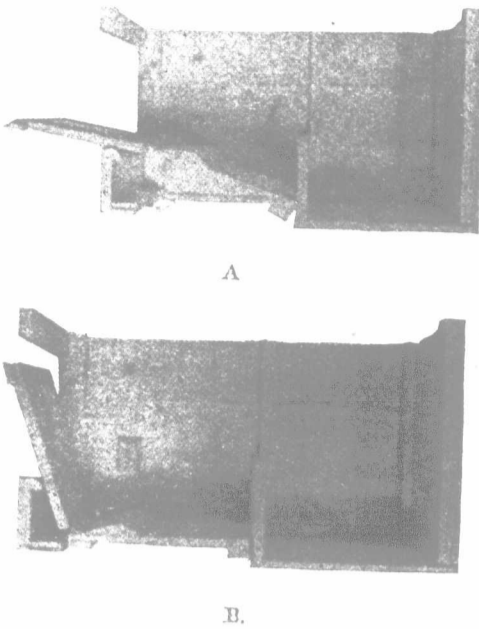


Fig. 1—An Easily Constructed Trap Nest. From Productive Poultry Husbandry.

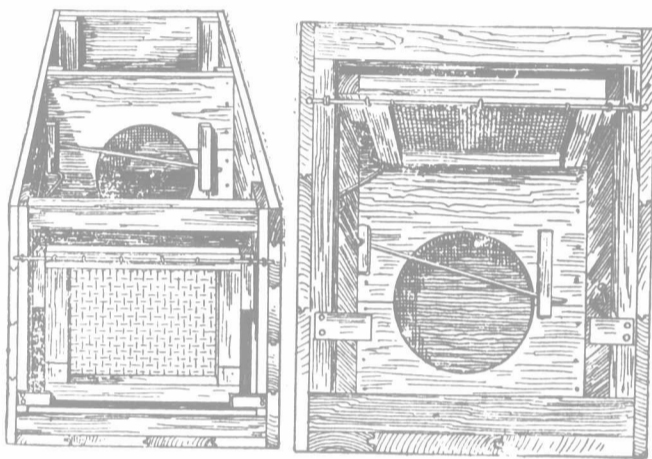


Fig. 2—A Satisfactory Type of Trap Nest.

FARM BULLETIN.

Plowing the Snow.

BY PETER MCARTHUR.

This week I learned something entirely new about road-making. My wanderings took me to a part of the Province where much work is done on roads that are even more perishing than the proverbial foundations of sand. I would tell more definitely where I was had it not been that so many of the good people I met were so apologetic about the deep snow on which they have to do so much work every winter to keep their roads passable. They seemed to regard the snow as an affliction and as a very bad advertisement for their district, so I mustn't increase the advertisement by telling where I was visiting. But I was so struck by the novelty of finding that people work on their snow roads much as we do on clay roads, that I want to tell something about it to people like myself who never heard of such a thing. I really think that the people are mistaken in considering the snow an affliction that must not be mentioned by anyone who wants to boost the district. I suspect that if a competent scientist were turned loose in that locality to grapple with the problem he would be able to show that much of the very noticeable prosperity of the district is due to the great amount of snow that falls and accumulates on the farms. He might find that the abundant fertility of the soil and the good crops are in some measure due to the snowfall. Anyway, I think that if I lived in that district I would not be afraid to mention the snow, but would start to blow about it and try to convince the rest of the county that the snowfall was one of our greatest advantages.

But it was the snow roads that attracted my attention and that I wanted to tell about. While driving across the country from one town to another we came to a stretch of road that showed evidence of having been worked on recently. As there were no drifts at this point—only a wide blanket of snow that stretched in all directions—I wondered why the road needed to be levelled, and asked the friend who was driving with me what it meant.

"No, they haven't been shovelling the road," he replied to my question. "They have been ploughing it."

"Ploughing it!" I exclaimed, my curiosity thoroughly aroused. "I never heard of such a thing."

He looked at me in surprise, and then remembering that I live in a part of the country where we do not

have so much snow he explained. It seems that when the snowfall is heavy and the road traffic considerable the snow is packed by the passing horses, cutters and sleighs, and the furrows that are made are constantly being filled by drifting snow which gets packed down to make way for new drifts, until the travelled part of the road becomes a solid, icy mass with deep, loose snow on both sides of it. If nothing is done to prevent it the runners of the sleighs begin to slip off into the loose snow, and slews are formed that soon make the roads impassable. In order to overcome this difficulty the farmers turn out with their teams and ploughs and do road work, just as we do it on our clay roads in the summer-time. They plough up the paths that are made by the horses, throwing the furrows outward towards the sides of the roads. This keeps the packed snow road-bed from getting high and rounded, and forms ridges along the sides that prevent the formation of slews. In most districts the farmers do this as part of their own work, so as to keep themselves from being snowed in for the winter. But where the work is done on main-travelled roads they do it as part of their statute labor. In one place we came to a spot where my companion showed me that the work was done differently. He amazed me by telling that the road was kept down in proper condition by working it with a disc harrow that worked the snow out towards the sides. It certainly seemed curious to think of people ploughing and discing the snow, and I wished that I had come along when they were at it, for it would have been a new sight for me. But I could see plainly that they had been doing it, and that such work needed to be done.

The deep snow also makes necessary the observance of rules of travel that are unknown in other parts of the country. I soon noticed that at frequent intervals there were what might be described as switches, such as you see on single-track railroads and street-car lines. As teams or cutters approached each other from opposite directions the drivers kept a sharp lookout for these switches ahead. When there was finally only one between them, the driver who was first to reach it would either stop in the middle of the road or pull out on the switch and wait until the other had passed. Sometimes we would hold the road and sometimes we would pull off—according to the side on which the switch was placed. As these switches were packed just like the roads, there was no danger of getting stuck in the deep snow. Of course, when we met a loaded sleigh we let it keep to the road, no matter on which side the switch lay. But the old rule that prevails in the summer-time of giving "half the road and all of the ditch" does not hold on these snow roads. One vehicle must turn off the road entirely. And I noticed another rule. Men who were driving with loads kept watch behind as well as ahead, and when they found themselves being approached by someone who was driving a light rig and going fast, they would pull up at a switch to let them pass. These rules of the road appeared to be so thoroughly understood that everyone obeyed them instinctively and there was no friction. To the people who lived in the district they were so familiar that they never gave them a thought, though to me they were as curious and interesting as the work of ploughing and discing the snow.

Having found it necessary to drive about fifty miles across the country, I feel more kindly towards railroads than I ever did in my life. Because I have been using the railroads ever since I can remember, I never stopped to think what a convenience they are. On the contrary, I have not hesitated to grumble at them and scold when trains did not arrive on time. But I don't think I'll ever do it again. When a man has to make a trip he should be full of thankfulness if his line of travel enables him to use a "jerkwater" branch line—as they call the little branches on the American desert that bring the water supply to the main line. Anything in the shape of a railroad looks good to me just now. Not even fast horses, good roads and pleasant companionship when driving can keep a man, who is not used to that kind of travel, from feeling bumped, cramped, shaken, chilled and generally bilious after taking a long, continuous drive. I enjoyed driving across the country as an experience, but I do not intend to make a habit of it.

Britain's New Agricultural Policy.

In the House of Commons on Friday, February 23rd, Mr. Lloyd-George the Prime Minister clearly defined Britain's new agricultural policy. He gave voice to a far-reaching scheme of State assistance. The chief heads of the Government's land policy were as follows:

Minimum Prices.—Farmers to be guaranteed the following minimum prices for every quarter of wheat and oats:

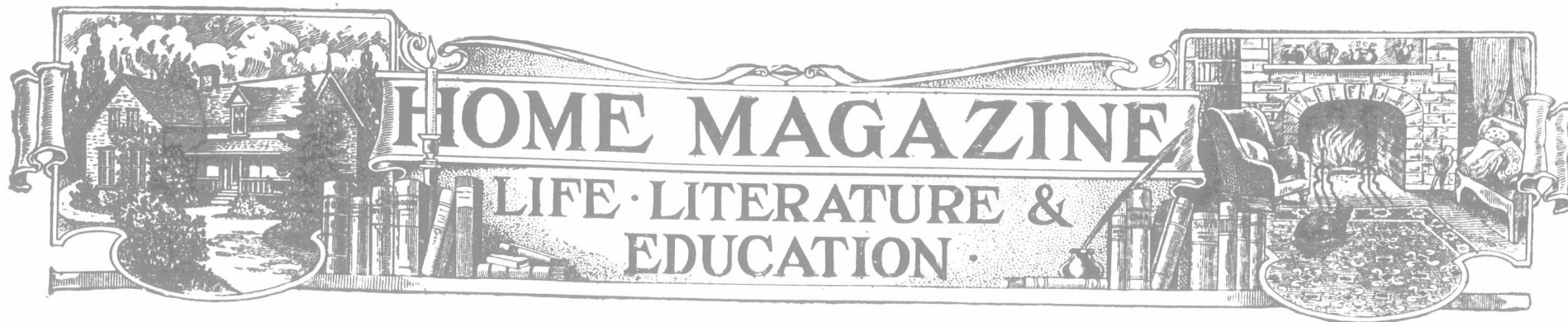
	Wheat	Oats
1917.....	60s. 0d.	38s. 6d.
1918-19.....	55s. 0d.	32s. 0d.
1920-1-2.....	45s. 0d.	24s. 0d.

The whole matter to be reconsidered at the end of four years.

Potatoes.—A guaranteed minimum of £6 a ton during the coming season.

Wages.—A minimum of 25s. a week for agricultural laborers in Great Britain. Wages to be settled by Trade Boards in Ireland.

Rent.—Landlords not to be allowed to raise rents, except with the consent of the Board of Agriculture.



For these weights, from \$12.50 to \$15.35, but the market was sold up to \$13.75 to \$14.50. Last week before the same week a week opened lbs, tops selling \$15.35, but the opening the week and during got top, handy Tuesday nothing bulk \$15.00. from \$15.00 to \$14.50. Thursday stronger, tops \$15.25, with one further advance moved at \$15.40. Cull lambs to \$14.50. very scarce all previous time. Receipts, for the week 6 head and for there were



The Czar.

True Spring.

What, spring, because a day is fair,
Because a brook is flowing,
Because a maple here and there
A flash of red is showing.

Because the frost has lost a tooth,
And ice-packers jar and splinter?
You call it "spring" because, forsooth,
It simply isn't winter!

No, spring has gladder signs than these;
I'll know that spring is coming
When lilacs blow, when velvet bees
In apple-boughs are humming.

When softer shadows fall aslant
The fragrant meadow mazes:
I'll call it spring when I can plant
One foot on seven daisies.
Arthur Guiterman in "The Laughing Muse."

The Revolution in Russia.

Unexpected, almost, as a thunder bolt came the news on the morning of March 16th that Czar Nicholas of Russia had abdicated and that Grand Duke Michael Alexandrovitch had been appointed Regent of the great Russian Empire.

Almost at the next breath the news came flying over wires and by wireless everywhere that Grand Duke Michael himself had abdicated, that the Czar's abdication included that of his son, and that, therefore, the Romanoff dynasty had come to an end.

The reading of the whole story is as interesting as any tale of romance, and intensely suggestive of the future.

For some time there have been whispers that the party most in favor about the throne have been pro-German, and that, in consequence, and against the will of the mass of the people, there has been slowness in the prosecution of the war and disregard of the wishes of the Russian people. Protopopoff, Sturmer and Rasputin, of late came to be known as the "Dark Forces", and when, a short time ago, Rasputin, "the mad monk" who was known to hold strong sway over the Czar and Czarina, was murdered, the event was regarded as a strong indication of the way in which the wind was blowing.

The immediate events that led to the great revolution, seemed in themselves no more ominous than those that have often resulted in little more than a passing brush between labor and capital. For some time there has been a food shortage, and towards the end of the first week in March food riots broke out in several places. These were followed by a strike of workers in the

munition factories, who blamed the Government for the shortage of bread. About the same time the Czar ordered the dissolution of the Duma; it refused to be dissolved and met as usual.

On Sunday, March 11th, affairs came to a head. A gathering of strikers and their sympathizers in the streets of Petrograd were ordered to disperse, and troops appeared good-naturedly among them. Nowhere was there any disturbance, but suddenly the troops were commanded to fire upon the people. They refused and instead shot their own officers. The police meanwhile fired upon the strikers, and before long troops and police were in collision.

The police having been driven back, the soldiers next marched to the fortress of St. Peter and St. Paul, and after a short skirmish with the garrison, took possession. Then on Monday, masses of revolting troops, also bands of citizens—workers and students—began to assemble in the garden of the Duma. The conflagration spread rapidly. In Moscow soldiers and civilians dropped into line with the revolutionists in Petrograd, and as the hours passed all of the leading cities, including the strongly fortified city of Kronstadt, were ranged against the Government.

With remarkable rapidity events moved. Almost bloodlessly the revolution was accomplished, the Czarina and household being placed under guard, and a provincial Government formed, with Rodzianko as leader of the Staff selected from the Duma.

A significant episode during the height of the movement occurred when the British attaché was discovered in one of the arsenals. He was loudly cheered and given safe conduct to the Embassy buildings.

The abdicated monarch is 48 years of age, and is a cousin of King George. For many years he has led the life of a recluse, appearing in public only when guarded by thousands of soldiers. He has never been very popular, although some good measures are to be attributed to him, notably the forming of the Duma, a sort of parliament which might have held with him had he not insisted on interfering with its movements and striving to make it nominal rather than effective. His establishment of prohibition in the Empire was a popular measure, but he drew much disapproval on himself, of late, by turning an obdurate ear to repeated appeals for a new Cabinet.

The Czarina is the daughter of Princess Alice (daughter of Queen Victoria) who married a German Prince, but died when her children were still quite young. The little Czarevitch, who is but 13 years of age, has been an invalid all his life.

At the time of going to press it is believed that Grand Duke Nicholas, who was dispatched by the Czar to the Mesopotamian region a year ago, will again take entire charge of the armies of Russia.

Through the Eyes of a Canadian Women in England.

January 23rd, Surrey, England.

I have said good-bye to Folkestone with all its attractions and am now in beautiful Surrey, the loveliest county in England, save one—which is Devon—so my landlady informs me. This is a sleepy picturesque village which must have had a great awakening recently by the establishment of a military training camp for Canadians near by. I feel as though I am part of a quaint picture when I see about me rows of ivy-covered, thatched-roofed houses, with numerous chimneys, surrounded by high stone walls over which peep holly and laurels,

through mid-winter the garden-plots are green, and the golden and crimson chrysanthemums have just now bowed their proud heads to the first frost. There are some little shops in which the opening door rings a bell and brings the proprietor—always a man past military age, or a woman,—from some other duties, unless he is drinking afternoon tea, when the ringing of a set of chimes would not disturb him. But the sleepy village has had to waken up—"C'est la guerre"—which changes all!

Now battalions pass by continually and one hears in the early morning and at all times, the skirl of the pipes, the martial music of Canadian Bands, and lusty voices singing "O, Canada", and "Keep the home fires burning", in accompaniment to the tramp of armed men. Then there are the necessary disagreeable noises—the heavy rumbling of huge motor-trucks carrying supplies, and the roar of cars, as well as the unspeakably horrible sound which announces the approach of my old enemy, the motorcycle.

I am domiciled in a house 100 years old with stone floors and many fireplaces. As I write, the charm of the carved oak furniture surrounding me, and the chestnut-roaster and other brasses which hang upon the wall distract my attention; my fire is small but I augment its blaze with the old bellows on the hearth. On my right are the latticed windows through which I see grass that is still emerald green, dotted with huge oak trees, and laurels, and firs trimmed in fantastic shapes. It is all very old-world and enchanting and it is with difficulty I keep my eyes from wandering.

The camp, a few minutes walk from here, is composed entirely of Canadian units; which ones are here, and how many in all, the Censor, all powerful, will not permit me to say, but I may tell you that there are many thousands of men, representing every province in Canada. Troops usually make their final move during the night and I lie awake and listen to the tramp of our departing heroes—heroes! yes, every one of them—going steadily on through the darkness singing and whistling the old familiar airs, which I shall never hear again that they do not make me sad,—some to return, and many to give up their lives. I was reminded of a favorite quotation "The bravest are the tenderest, the loving are the daring," very forcibly the other day on the train. There was a brawny Scotch-Canadian sergeant in the compartment with my friend and me, and from our conversation he evidently gathered that we were from Canada too, and began to talk to us. He had just come across from France on his way to London for a few days' leave. He opened his kit bag and offered to show us some souvenirs he had managed to get possession of—a German helmet, a gas helmet which covers the face and has a rubber tube leading to a sack of oxygen to breathe from. A German shell and several other things which interested us greatly. Then he began to talk, as they all do about "home", (it is easy to see where their hearts are), and said, "I have a dear old mother over in Canada, and I am all she has. Although I have been in France for months, she thinks I am still training in England, and I send my letters to her, in care of a friend here who forwards them for me. I do not want to give her needless worry, for she is lonely enough as it is." I said "Shall you ever confess to her?" "O, yes," he replied, "I shall sure tell her all when this old war is over—if I come through all right—if not, "he added sadly," It will not make any difference anyway. I do not care for myself but I would like to come back for her sake." They all seem to think more of the lonely ones at home than the dangers they are called upon to endure. The big, rough-looking Scottie had a tender heart, and his eyes filled



The Czarina.

with tears as he talked of the old mother waiting at home.

I came through the Big City on my way here and stopped off for a few days, and it would take hours to tell you of all the wonderful things I enjoyed there. Oh, the marvellous shops of London! which are finer than my greatest stretch of imagination ever pictured them. Even our male friends who scorn our "gazing in shop windows," look furtively into the ones on Oxford and Regent streets as they saunter by. The city is full of khaki men. One meets them everywhere; their uniforms are sufficient pass to take them through all places of interest. I finished up my sight-seeing by attending a three-o'clock service in Westminster Abbey, where the soft and beautiful music resounding through its wide aisles, flanked on either side by the tombs of great men of the past, filled me with awe. I was seated near the huge pile of General Wolfe, upon which hang the colors of several Canadian regiments for the duration of the war. After the service was over, I walked about looking and admiring until I was weary. It was with difficulty I tore myself away, and I plan to return some future time and spend hours there. The heroes of many wars with their tattered time-worn flags hanging beside them, are brought home to us with special emphasis just now when great men of our own time are making the same sacrifices for our freedom. We dare not allow ourselves to think of this age we are living in, and the future we may be called upon to face. We must place our hopes upon God and the brave men who are fighting for us.

Leaving the Abbey, I went down to see the exhibition of war-shrines, which is which is being held at S. Iffridge's, the great American store. Designers have been asked to submit samples for exhibition there and I wish all our people at home could see them. Most of them are wood and are shaped like a portico with zinc on the top to protect them from the weather. I noticed one with doors to close like a cupboard. The tablet has lines ready for the inscription thereon of the names of those who have given their lives, or are giving their services for their country, and will, I am sure, prove of great comfort and historical value to our people. The prettiest ones were painted white with the coat-of-arms of the regiment, or crossed flags in colors at the top; or of white marble with inscription in gold of such words as: "For King and Country"—and a shelf below to hold flower-vases. I hope

Hensall, Ont., and growers of grain, write and recent
o. Ratcliffe, of now carrying a three years old, in us last fall. The grand Jewel 42nd, held good and others that of our herd, great value."
Lloyd-Jones, and
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Canada will imitate this way of keeping green the memory of our soldiers.

I had so often read of a London fog that I was rather grateful when one came upon us during my visit there—such a dense one that all traffic was well-nigh impossible. In the afternoon a thick haze settled down over the city which as evening drew on increased until there was in Hood's familiar words: "No t'other side o't way." People groped about with flashlights, trams crawled along with a continuous clanging of bells, and a man was seen in Fleet street piloting a motor-omnibus with a lantern, while, in the suburbs, people were actually seen carrying candles along the street! Thousands emerging from cinemas and theatres did not know which way to turn, for the taxis which usually wait at their doors for patronage, had decided that "discretion was the better part of valour" and hurried early in the evening to their respective garages. About nine o'clock the density so increased that omnibus men were obliged to abandon their services. Many humorous and perilous incidents took place, and I was very glad to find myself near my hotel whose doors looked like a refuge. Even the greatest bump of location deserts one in a London fog, and I felt that one experience was sufficient. But I have since had another forced upon me. The other day I went to call upon an old friend from "home", a nursing sister in one of the large Canadian Army hospitals. When I arrived about four, she was still sleeping, as she was having her turn at night duty, but came down shortly afterwards, dressed ready for the ward in her picturesque blue linen uniform with the flowing white head-dress which is now in vogue, and which the invalid

soldiers describe as a "halo", for to them she is indeed an angel of mercy. I must remark, *en passant*, that military nursing in England is not in every case a pathway of roses. This faithful sister made no complaints, but I could not but fail to see the difficulties she had to contend with. In this case the hospital is an old draughty Barracks and has no means of heating except little stoves in the centre of each ward. The nurses have no home but a little hut such as our men have at camp, and in her case it was warmed by an oil stove only. In spite of all this they love their work and make many sacrifices for their Country's sake. They all speak sympathetically of the men under their care. We had a very interesting half-hour, then parted, she to go back to her duties and I to find my way home, a distance of five miles. I had a long wait for a taxi (and it was getting darker all the time), but finally spied one and asked him to drive me home. He replied that he was unable to do so as he was waiting for some officers who had engaged him to take them into the village. He could not help me any, and I felt rather alarmed. I did not wish to inflict myself on the busy sisters any longer, so I waited and waited until I perceived an officer acquaintance, who happened, fortunately, to be one of those who had engaged the taxi, and he made room for me there. In the meantime I noticed the fog settling upon us—I should certainly have got lost had I attempted to walk!—and we had a drive of terror to our destination. We were going it blindly, and slowly, blowing the horn continually to prevent collisions. I could see nothing, but could feel sometimes that we were going downhill, and then up—in fact we went around the

"Devil's Punch Bowl". The driver had only one shaded lamp to guide him as no bright lights are permitted nowadays. When a car passed us on the road, I felt like uttering a prayer of thankfulness that we had escaped running into it. Wasn't I glad to get out of that car! The owner refused to take us quite all the way and we demurred at his exorbitant charge, he insisted that it was "worth it on such a night." I shall always look back on that night as my "death-ride".

Have you noticed the restrictions which are being added day after day in England in regard to food? Yet we are living well enough, all the necessities being still purchasable, and many of the luxuries. Of course, prices are high and one wonders how the very poor keep body and soul together. Wives of English Tommies tell us that their allowance barely covers rent, fuel, and food at the present prices. Not to mention boots and clothing for the children. Sugar is very scarce and no one is allowed to bring more than a pound at a time, and the newest regulations for bakers forbid the icing of any cakes after February first, except one kind—the happy bride must not be denied her snowy wedding cake! Margarine is used largely instead of butter—(how I detest it!) and people are warned of meatless days in the near future. This last touches the Englishman very closely as he usually has meat and plenty of it at every meal—of course, this refers to the people who can afford meat. Large landowners are in some cases coming to the rescue by killing the deer in their parks, and sending the meat to hospitals, and hares and rabbits are used more than ever before. The night I arrived here the waitress said in my ear, "Juddare,

Madame"? I said yes, by way of experiment, and she brought me a generous helping of jugged hare! The growing of pigs by townspeople is becoming a popular occupation, which has brought forth all sorts of funny cartoons, in the Sunday papers, of Londoners leading on a leash a pet pig at the Sunday Parade in Hyde Park, and ladies carrying much-beribboned ones on their arms where the poodle formerly rested. The Britisher is greatly to be admired for his calm acceptance of the necessities of war-time which he converts into fashionable fads. The lady who never before carried her own parcels, now trips about town with a basket upon her arm, and when her motor is denied her because of the scarcity of petrol, she mounts a bicycle and rides cheerfully along, with the results that this mode of conveyance is quite as much in vogue here to-day as it was in Canada some years ago, and one sees bevy of women and girls continually flying by on wheels. England has made her laws, and kept them for generations, so that it has become second nature to her people to obey without a murmur, and "Mark Tapleys" are as common in this age as they were in the days of the immortal Dickens.

Beautiful Surrey is one of the literary counties of England. Here Lord Tennyson lived, and I have had the pleasure this morning of exploring his favorite walk—"Tennyson's walk" it is, and always will be, a veritable lover's lane through a wood chiefly of white-edged hollies which are now covered with scarlet berries. At the end I passed through a swinging gateway, called here a "Kissing-gate". The famous Huxley lived nearby, and there is also the big house where George Eliot lived and wrote his delightful books; while in the same neighborhood are the homes of Sir Conan Doyle and Mrs. Humphrey Ward. And now the spirit of war pervades the very atmosphere which for generations has breathed poetry and culture, and the lovely pastoral scenes are disturbed by the sound of guns and the marching of men preparing for war! In another part of the country on the London and Portsmouth Road, and in the quaint village of Liphook, still stands the old inn, the Royal Anchor, rich in mahogany and antiques, in which the great Nelson dined on his way to join the Flagship "Victory", previous to the battle of Trafalgar, where he laid down his life. The signal message that Nelson "flew" in that memorable battle holds good to-day, and has been responded to with a willingness that must spell defeat for our enemies. Still the fight goes on! The Kaiser has said that he will win on the seas. He has met his match on the field and in the air, but thinks, in his foolhardiness, that he can control the seas by submarine warfare. Not so, says Britain's navy, and the morning papers tell us of a brilliant action in the North Sea during the night, when our light forces, while patrolling, surprised the enemy destroyers, and put them to flight, sinking one and damaging others. Such is the fate which tardily, but relentlessly, has overtaken what the German Admiralty calls their "High seas forces"! So, "have a heart", and wait in patience, while England and her colonies are feeling more confident of victory every day.

SIBYL.

Insects and Birds.

I saw with open eyes
Singing birds sweet
Sold in the shops
For people to eat.
Sold in the shops of
Stupidity street.

I saw in a vision
The worm in the wheat,
And in the shops nothing
For people to eat;
Nothing for sale in
Stupidity street.

Mr. James Buckland, in a pamphlet entitled "The value of Birds to Man," points out a number of facts that may well be considered, now that summer is approaching and the birds coming back to us from the South.

Birds, he shows very clearly, are our surest safeguard against the inroads of insects upon gardens, field crops and fruit trees,—the more birds the fewer insects.

Over 300,000 kinds of insects have already been described, and it is not



Bridge of Boats, Bagdad.

improbable that twice that number remain to be described. Very few of these are beneficial to man.

The fecundity, too, of certain species is astounding.—Kirkland has computed that one pair of gypsy moths, if unchecked, would produce enough progeny in 8 years to destroy all the foliage in the United States. A Canadian entomologist states that a single pair of potato bugs would, under the same conditions, increase in one season to 60,000,000. The chinch bug has been found in a clump of grass 8 inches in diameter to the number of 20,000.—So the story goes.

And then consider how much they eat! A caterpillar for instance in one day eats twice its own weight—and we all know upon how many kinds of plants the various species feed.

Great need, then, surely, to protect and encourage the birds, the natural enemies of insects. "As we destroy the insect-eating birds," says Mr. Buckland, "the insects on which they prey will multiply to scourge us as Egyptian plagues. It is a fact, which agriculture has learned to its cost in many parts of the world."

Some years ago in Hungary, the sparrow was exterminated. Within five years it had to be brought back to save the country from famine. . . . In the island of Bourbon, once, a price was set on each martin's head. Grasshoppers took possession of the island and the exile was hurriedly recalled. . . . In 1861 the harvests of France were so bad because of insect depredation, that an investigation had to be made, and it was found that certain birds were being shot and snared for food. . . . Before 1877 red-winged blackbirds were poisoned around the cornfields of Nebraska, but 1877 brought revenge in the form of countless locusts. . . . In 1895 the destruction of birds in a district of Russian Siberia, for exportation for millinery purposes, resulted in unparalleled ravages of two species of cut worms and some 10 species of locusts. The instances might be multiplied by the thousand.

The moral of it all is that we must protect and encourage our native birds. If we do not do so, it is at our own cost. Even the birds in the orchard help more than they hinder by the fruit they eat, for their fruit diet, at worst, is confined chiefly to cherries, while they help the whole orchard by the insects they make away with all summer long. In garden, meadow and grain crops their good offices are ceaseless. Destroy the cowbird—which destroys other bird-life, and frighten off the crows if you will, but look on birds on the whole as friends. Even hawks and owls destroy field-mice, which if unchecked, prove to be absolute pests, doing an incalculable amount of damage to corn, root crops and grains: "If," says Mr. Buckland, referring to the wholesale destruction of the feathered world carried on by millinery-hunters, game hunters, egg-collectors and "sportsmen", "if the present-day wasteful and depraved practice of denuding the world of one of its most valuable natural resources is not checked, there will be wrought a mischief, a universal disaster, more awful in its results than words can express.

wedded life and left to struggle on alone. There are many sorrowful hearts to-day. We can't remove the sorrow—it would be unnatural and inhuman if those left behind did not care! Christianity is not intended to drug hearts into insensibility. Our Leader refused the narcotic, when called to endure the Cross; and He does not offer forgetfulness as a remedy for pain. St. Paul told his friends that there were two kinds of sorrow—one hopeless and the other hopeful. "Comfort one another", he said, with the coming reunion of those who have been separated for a time.

How lovely were the words of JESUS to His sad friends, who were heart-broken at the thought of the terrible death which was only a few hours away from their loved Master. After nearly two thousand years, those words of good cheer ring out like a chime of golden bells.

"Let not your heart be troubled: ye believe in God, believe also in Me. In My Father's house are many mansions: if it were not so, I would have told you. I go to prepare a place for you. . . . I will not leave you comfortless: I will come to you. . . . Peace I leave with you, My peace I give unto you. Let not your heart be troubled, neither let it be afraid."

Could any words of good cheer surpass that parting message? There was no

shallow optimism, no denial of the awfulness of the swiftly-approaching sorrow. He faced it all, refusing to give or receive an opiate, but declared that joy awaited His friends beyond the sorrow, that darkness would be dispelled by the sun.

We are apt to make the most of our troubles, refusing to be comforted—as if our love for one "out of sight" could be best shown by making the everyday life of those "in sight" as dreary as possible. To give way to hopeless sorrow—"even as others which have no hope"—is to dishonor Christ and His promises. Such hopeless sorrow is an open profession of faithlessness. One who thinks that death is the "end", instead of being an "incident in life," has some reason to be hopeless when a young life is—apparently—cut off. But if you claim to be a Christian, and yet speak or act as if life were no longer worth living, then you will injure the cause of Christ far more than you know. Others will be convinced that you have no real trust in His love and wisdom, no faith in the reality of the new and wonderful life beyond death. Faithlessness is almost as contagious as faith. Human relationships mean so much to us; and it may be that our Lord's words about marriage (S. Matt. 22:30) have distressed and bewildered many, who fancy that He meant death would dissolve the most sacred relationships of earth. If you

read the context of that startling statement, you will see that He was speaking of a relationship that was far from sacred. It was just a physical and temporal union, which death was bound to end. But, when He spoke of the real marriage of one man with one woman, He solemnly declared that God Himself had joined them together—and God does not change. (S. Mark 10.)

Are you afraid that death will introduce us into a communal existence, in which home life can find no place? The Father's love has provided a home for you here—not a Home with a capital "H"—and, if that dear word, "home", were to be only a memory after death, our Lord says tenderly, "I would have told you." The Father's house is one, but it contains many mansions—"abiding places" (R. V.) The New Jerusalem is a "city"—and a city is made up of houses as well as streets.

When David's child died he did not feel that hope had died too. "I shall go to him," he exclaimed, as he faced life and its duties with brave cheerfulness. His child would not be lost in a great multitude of children, but was still his own peculiar treasure.

As one after another "passes on" ahead of us we realize more clearly the reality of the life on the other side of death. This war—horrible as it is—keeps the door of the Garden of God open, so



Typical Scene on the Principal Street of Bagdad, Recently Captured by the British. Underwood & Underwood.

Hope's Quiet Hour.

Hopeful Sorrow.

I would not have you to be ignorant, brethren, concerning them which are asleep, that ye sorrow not, even as others which have no hope.—I Thess. 4: 13.

"Yea,—we have lived and loved" (she said)

"What counts this passing pain?"

"What counts this hour, I wait until We love and live again? Bear out his body where ye will— He stays—my Love, my bridegroom, still! God made us one—the living God— Death cannot make us twain!"

E. P. CLARKE.

I saw in this morning's paper that there are hundreds of thousands of widows on the British pension list. How many new widows there must be in the world!—young women, just beginning their

that we can almost see through. We, all of us, know young men, full of the joy of this life, who have paid out that great treasure unhesitatingly at the call of duty. If death were to end all, what madness such sacrifice of life would be! We know they are not dead: Our hearts emphatically ratify that saying of our Lord: "He that loseth his life for My sake shall find it."

Our Canadian poet, R. W. Service, tells of a lad whom he called "a fool", because he flung away his chance of fame, and fell—with hand clenched on his broken blade, and his face turned to the foe. Though he "called" the boy a fool, he did not really think him one, for he says:

"A fool! Ah no! He was more than wise,
His was the proudest part;
He died with the glory of faith in his eyes,
And the glory of love in his heart.
And though there's never a grave to tell,
Nor a cross to mark his fall,
Thank God! we know that he 'battled well'

In the last great Game of all."

On March 25—The "Annunciation Day"—we remember the angel's salutation to the mother of JESUS. "The Lord is with thee: blessed art thou among women," he said.

On April 6—"Good Friday"—we see that woman beside the Cross. Is she really "blessed?" She has drunk deep of the joy of motherhood, and now the agony of her Son is like a sword through her heart. Rather more than thirty years before that Sacrifice was laid upon the altar, she exclaimed in her eager gladness: "All generations shall call me blessed." Her words were true, and yet she is also called: "the Mother of sorrows." If given her choice, do you think she would have refused the joy in order to escape the sorrow? Would you—you mothers of sons who have bravely suffered and died? Would you change places with the women who have no sons, lovers or husbands, bravely doing their duty at home or abroad? There are plenty of women still who are more interested in a book of fashions than in the sorrow of the world; who are lighthearted because trouble has not touched them personally, and the tragedy of millions of wrecked homes is nothing to them. We may call the mother of sorrow "blessed among women", but can we call the women who care nothing for the world's sorrow "blessed"? There are worse things than trouble, and hard-hearted indifference is not to be desired.

The shortest verse in the Bible—"JESUS wept"—shows us how our Lord felt the troubles of His friends. He was not indifferent then, and He is not indifferent now. He is the ladder on which we can climb. This—the place we are standing—is the gate of heaven and the gate stands always open—no prison walls can bind the soul.

"Is it the Lord that shuts me in?
Then I can bear to wait.
No place so dark, no place so poor,
So strong and fast no prisoning door,
Though walled by grievous fate,
But out of it goes fair and broad
An unseen pathway, straight to God,
By which I mount to Thee
When the same love that shut the door
Shall lift the heavy bar once more,
And set the prisoner free."

DORA FARNCOMB.

A Thank Offering.

Your thank offering, "A. M.," went out (the day it reached me) to cheer a discouraged woman. You have helped her to bear a very heavy burden. If you send me your address I will tell you particulars.

With thanks, HOPE.

The Dollar Chain

A fund maintained for the soldiers and all who are suffering because of the war.

Contributions from March 9th to March 16th: H. W. Palmer, Shetland, Ont., \$2.00; "Plain Country Woman", \$2.00; W. F. Alexander, Hensall, Ont., \$5.00; W. E. Byrons, R. S. London, \$1.00; Mrs. John Edmonds, Silver Water, \$1.00; F. H. Atkins, Aldershot, Ont., \$2.00; "Toronto," \$2.00; H. B. E., Watford, Ont., \$1.00; Mrs. A. B. Switzer, Glanford Stn., Ont., \$2.00; Clara Westington, P. O. Box, Ont., \$1.00.

For Byron Military Hospital: Plain

Country Woman, \$1.00; Mrs. Jas. L. Watson, Walter's Falls, Ont., \$1.00; W. E. Byrons, R. S. London, \$1.00; W. F. Alexander, Hensall, Ont., \$10.00; R. Armour, \$1.00; Mr. and Mrs. Andrew Derby, R. 1, Hanover, Ont., \$2.00; H. B. E., Watford, Ont., \$1.00; Gavin Barbour & Sons, Crosshill, Ont., \$2.00; M. F. & I. Park, Choisy, Que., \$5.00; Wm. Grant, Dobbinton, Ont., \$1.00. "A Cairo Friend" \$1.00

—The total amount received up to March 16th for the Byron Hospital for soldiers was \$162.50, leaving \$337.50 still to be gathered for the equipment of the ward.

Amount previously acknowledged.....\$4,030.75

Total to March 16th.....\$4,075.75

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

Fashions Dept.

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. Price fifteen cents PER PATTERN. If two numbers appear for the one suit, one for coat, the other for skirt, thirty cents must be sent. 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.

Positively no pattern will be sold under 15 cents each, regardless of date published, owing to advance in cost of same.

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

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

Dresses and Hats for Spring and Summer.

Notwithstanding the war the fashion papers continue to come forth as merrily as ever, and, on this continent at least, the women continue to examine them almost as interestedly as ever. The changes in style, however, are not startlingly marked. Perhaps the greatest innovation is the so-called "barrel silhouette", which means that we shall look narrow at the shoulders and narrow at the foot of the skirt, but bulged out somewhat above the knees. Sometimes this effect is secured by the cut of the skirt, sometimes by large flaps or pockets. Pockets, indeed, are seen on nearly all of the skirts except those meant for very dressy wear, but it is to be doubted whether we shall be permitted to put anything in them. At all events it is good to know that the new skirts are somewhat narrower than during the past year, although it is to be hoped that never again will they be reduced to uncomfortable tightness or drawn out to unsanitary length.

In many practical dresses and suits the "sports motif" is very apparent, the long belted blouse holding its place quite persistently. Instead of belts, however, the girdle which resembles, somewhat, a sash with the ends hanging down in front, is favored. Gabardine, Jersey cloth, Shantung printed silk, and cotton materials will be used for these sports dresses, according to the season. Quite as popular for the same materials are the semilitte "chemise dresses," often pleated from the yoke down, and caught at the waist with a loose girdle. Different material may be used for the sleeves and collars of these dresses, and touches of embroidery in colored silks may be used to brighten dark colors.

In the dressier gowns of soft silk, crepe de chine, etc., transparent sleeves and vestees of chiffon or Georgette crepe are as popular as ever, Georgette crepe being one of the most popular materials of the season for this purpose and for

separate waists. When the sleeves are not made of different material, or when sleeves and yoke are of the same material, the old kimono effect is often used. Some of the newest collars, by the way, flare up high at the back.

A trip through the millinery stores this week revealed hats of all shapes and sizes, so no one need go away dissatisfied. Some of them are made of satin, some of silk, but many are of straw, "lisiere" or shining, varnished effects being very fashionable for general wear. In every case, however, line counts for more than trimming. Very little trimming is to be seen except, perhaps, a flat ornament of beads or pleated ribbon. Sometimes colored embroidery is worked on the straw, and sometimes the embroidery appears on a veil fastened over the hat, which itself is perfectly plain. Upon the whole the spring hats are pretty and becoming.



9239.—Russian Blouse, 34 to 44 bust.
8851.—Two-piece Skirt, 24 to 34 waist.



9248.—Blouse with vestee, 36 to 46 bust.
9247.—Four-gored skirt, 24 to 32 waist.



9348 Girl's Dress
4 to 8 years.



9349—Girl's cape, 2 to 6 years.



9334—Girl's dress, 4 to 10 years.

The Ingle Nook.

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

Dear Ingle Nook Friends,—Now that the fact that Ontario has conferred "the vote" upon women has had time to simmer into the consciousness of all of us, we may find it interesting to settle down to have a talk about it—and I do hope that I shall not have to do all the talking myself; it's so much more interesting when a number of folk take their share.

To begin with, I just know that the most of you were glad when the step was taken—and so easily too. The reason I know you were glad is that I remember occasions and occasions—oh, ever so many of them—at Women's Institute conventions, when very spontaneous applause burst forth whenever anyone chanced (or dared, rather,) to express an opinion favorable to "votes to women." And it did take daring to bring up the subject at all. For some inexplicable reason—perhaps the fear that it might breed strife—it was taboo at Women's Institute meetings. And what a time poor Mr. Putnam had fending it off!

However, even he "came round," and at the very last convention—I can't remember whether in Toronto or London—reached the point of expressing his opinion that before long the Government would act favorably in regard to the matter.

It did. So now what next?

It seems to me that the very next step must be to prepare ourselves for voting, for I don't believe that many of us are wholly ready yet. A vote is a trust. We ought to vote, since we have the right, but better not at all, perhaps, than blindly; and yet the more one thinks of it the more one realizes that to use the privilege is one of the hardest things in the world. It is easy to cast a vote (isn't it "cast" they call it?) but it is very hard to get ready to do so.

To begin with, one should know *why*. It is not advisable to do exactly as some male friend advises, because, you see, *he* may not be seeing straight; they don't always see straight, these men, no matter how nice and splendid they are in many ways. . . . But the trouble is to know how to see straight oneself; there are so many things to bias one's judgment. For instance, there is heredity. It is so easy to lean to the party to which one's father has belonged, and one's grandfather, and one's great grandfather—as far back as voting runs. And yet conditions have changed in the years—to say nothing of the fact that the first voter *may* have been swung on to a wrong line. . . . Again, political affairs are so muddling. It is hard to get the real ends of any of the strings that lead either to causes, or conditions, or effects. Most of us, too, make the fatal mistake of reading but one political paper. We swear by *The Globe*, or the *Mail* and *Empire*, on their prototypes in our nearest city, without ever pausing to reflect that the "other side" may occasionally have a reasonable case to present, too. On the other hand it must be admitted that even reading both sides may not always serve to set things straight—may even seem to make "confusion worse confounded." I remember that, once in my life, I determined that I *would* understand things political by reading at the fountain head, and so I began *Hansard*. Needless to say that was when I was very young, or that it did not take me long to find out that one might as well essay to read all the books in the library of the British Museum.

It is all like a Chinese puzzle, isn't it? Nevertheless, I am reasonably convinced that it is better to be a bit confused than to be hopelessly, stubbornly, stupidly one-sided.

Ah, well, it all comes to this, that we must just do the best we can, following the little bits of light that we honestly see. There will always be a few measures that we can follow clearly, and it may be that we can work up a few laws and changes in laws, necessary to women and children. So many of these things have been overlooked, simply, perhaps, because the voters have all been men, and so have not been able to *feel* the situations involved.

And one thing is sure: "That Government is of pre-eminent importance.

If all of us were perfect we would need none. Since not one of us is, and since there are always unscrupulous people in the world who are ready to manipulate or bully things, for personal gain, into channels that are all wrong for the great mass of the people, we must have some sort of ruling. Even Governments, it is true, have been charged, at times, with manipulating for the benefit of individuals

this way will feel it a duty to do so and a shirking to hold back, a time when the Lloyd-George spirit shall be abroad, even though such service mean, as it has meant to him, anxiety and buffeting and even danger. When men are big enough to do this generally—and they will be—then shall we see Government as it may be, and the little homes everywhere, all over the land as happy and progressive as they may be.

In the meantime, as I said before, we women must get ready for voting. We must try to see and to understand. It would be easier not to bother at all about it, but it might not be right. We must not be bribed nor blinded. We must act just as intelligently and as unselfishly as we can. It is easy to cast a vote—but to cast it well needs a lot of thinking.

* * * * *

While we are on this subject it may interest you to see to-day the picture of Miss Jeannette Rankin, which accompanies this. She is the first woman "Congressman" in the United States, and was elected by the State of Montana, where her father was, for many years, a farmer, owner of a large cattle ranch.

Miss Rankin, who is 34 years of age, and a university graduate, is said to be a woman of high ideals, a great deal of commonsense, and a clear, cool mind. Her work heretofore has been chiefly "settlement work" in large cities, and social welfare legislation will be her chief interest in Congress. No doubt, however, she will still find time, at odd moments, to serve the dainty afternoon teas for which, in her own social circle, she has been famed.

It is interesting to note that Miss Rankin's father was born in Canada, but of Scotch parents.

* * * * *

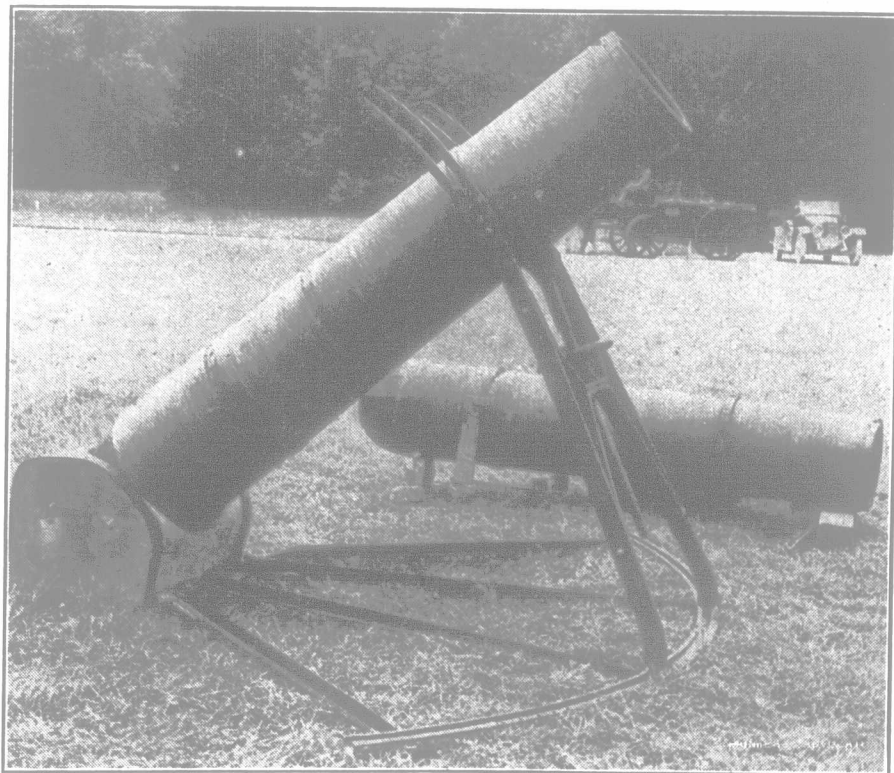
By the way, I thought, for two minutes last night, that I was looking at John Burroughs. It was at a lecture on Browning's "Caliban Upon Setebos," given by Dr. Moulton, of Chicago University—a wonderful lecture by a wonderful man. But the man who, I thought, was John Burroughs, came in and sat in the front seat. He had the same beauty of head, the same benevolence of expression, the long, white beard, the figure



Hon. Jeannette Rankin.
First woman to enter U. S. Congress.

and cliques—"graft" is a word all too well understood in these days. But, after all, the whole matter should be pretty well in the hands of the whole people. As a writer in the current number of *The Independent* says, "Good or bad governments must go back to good or bad citizenship, to intelligent, or ignorant, to honest or dishonest electors,"—and really, if we only understood it so, the vote is a powerful instrument.

Perhaps our greatest guarantee of good government is to send to Parliament as our



A German Mine Thrower taken by the British.
International Film Service.

representatives, not the men who are cleverest, it may be, not the best "talkers," but those who are known to be clear thinkers and filled with a sense of their responsibility for the public good. There are always some of them in every neighborhood, men who are too big to stoop to do a mean thing for personal advantage, men who are absolutely honest and sincere, men who say what they mean and mean what they say—whose word is as good as their bond any day.

Only such as these should be elected to Parliament. The trouble is that so many of them refuse to stand for election. Yet let us take hope. The exigencies of "after the war" may hasten the time when men fitted to serve the people in

with which we are so familiar in the pictures of the dear old naturalist. But he was not John Burroughs. He was a man noted as a book-lover, who in our neighboring city of Stratford, has built up one of the finest and most unique libraries in the Dominion of Canada. I had heard of him often before as greatly beloved and greatly revered.

Possibly he has never seen the long-bearded naturalist of the Hudson, and yet I know that they two are twin brothers. They have found out the true worth of a life of interest and beauty. What a talk they would have if they met! And the end of it would be, I fancy, that the Sage of the Hudson would take the Sage of Stratford away out,

these spring days, and open to him a new book. The Sage of Stratford would love that one too, even though it were not in Kelmscott type, for to love one thing greatly is to know how to love another too. JUNIA.

Meals and Mentality.

An article with the above heading in "Woman's Century" points out how surely bad feeding affects health, happiness and efficiency. It is a subject that demands more attention than is usually given it. Ill-balanced diet,—for instance a steady diet that includes too little protein, as contained in such foods as cereals, meat, fish, cheese, eggs, beans and milk—is sure to produce insufficiently nourished bodies. A certain amount of fat, as contained in meat, cream, butter, cornmeal, etc., is also necessary. On the other hand, too great a preponderance of greasy foods, especially if served up with soggy pastry and doughy bread, gives rise to indigestion with all its attendant ills. If green vegetables and fruits are left out of the bill of fare the almost certain consequence is constipation, and constipation is the cause of dozens of diseases, including appendicitis.

It is certainly high time that women everywhere should realize the importance of this subject, and apply themselves to working out reasonable menus for every day. Perhaps the best general working rule is to provide a great variety in foods—not a great variety at each meal, but from day to day. Let each meal contain some protein, and make free use of vegetables and fruits.

It has been aptly remarked, "An Astor or a Gould pays thousands to his chef, but whoever heard of a really noted woman cook?"—Yet why not? Do women in general not pay sufficient attention to the subject?

Once more—and kindly keep this list: The *proteins* are met with in the form of lean meat, fish, white of eggs, curd of milk, cereals to a certain extent, beans, macaroni. Proteins are necessary for *up-building* the body and keeping it in repair.

The *carbohydrates* are in the form of starches and sugars. Among them also may be mentioned bread and cereals of all kinds, potatoes and many vegetables. They are energy and heat producers, and also help to build up the body. The sugars are found in all kinds of sugar, corn, beets, syrups, honey and some grains.

The *Fats*—also heat and energy producers, are found in the fat of meats, yolk of egg, cream, olive oil, butter, etc.

Besides these, *bulk* in food is necessary to keep up peristaltic action and prevent constipation, and it is for this reason that coarse foods, such as brown bread, bran muffins and biscuits, and oat cakes are so advisable for many people.

Above all things try to keep balance in meals. Don't serve beef, cheese, plum-pudding and nuts all at one meal. A steady diet of too much protein gives rise to gout, rheumatism and Bright's disease.

A sweet apple, juicy pear or peach, orange or piece of grapefruit eaten at the beginning of breakfast is excellent for the majority of people.

Toast, when well chewed is easily digested, but never use liquid to soften a substance in the mouth. Liquids may, however, be freely taken at meals, "between bites."

Well-cooked rice is both nutritious and digestible, and may be used very frequently, as may also cornmeal porridge.

Rhubarb should not be eaten by people who suffer from rheumatism or "nerves," as it may aggravate the disease.

Raisins and well-cooked prunes are very "safe" and useful. Pineapple also helps the digestive processes, as do celery and lettuce, even sauerkraut, which is more easily digested than cabbage prepared in any other way except, perhaps, in raw salad, which must be well chewed.

Milk must not be used as a drink, as it clogs in the stomach. When *sipped* slowly, with other foods, it is, however, very nourishing. Buttermilk is more easily digested than sweet milk, is very digestible, and should be used freely in every house in which it can be procured.

Seasonable Cookery.

Pickled Carrots—Scrape the carrots and slice thick lengthwise. Boil until tender and drain. Put into jars, adding a couple of peppers and a good piece of

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HIS MAJESTY KING GEORGE

OUR soldiers must be fed; the people at home must be fed. And—in spite of Germany's murderous campaign to cut off the Allies' Food supply, by sinking every ship on the High Seas—an ample and unflinching flow of food to England and France must be maintained.

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This appeal is directed*

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INFORMATION BUREAU
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**Dominion Department of Agriculture
OTTAWA, CANADA.**

HON. MARTIN BURRELL, Minister.

PLANT a garden—small or large. Utilize your own back yard. Cultivate the vacant lots. Make them all yield food.

WOMEN of towns can find no better or more important outlet for their energies than in cultivating a vegetable garden.

Be patriotic in act as well as in thought.

*Use every means available—
Overlook nothing.*

onion. Pour in vinegar to cover and keep in a cool place. A little sugar may be added to the vinegar if liked.

Cream of Carrots.—Scrape 6 small or 3 large carrots and cook in a quart of boiling water, adding a medium-sized onion and 2 stalks of celery if on hand. When tender mash fine. Add a pint of milk and a tablespoonful of butter rubbed in 2 tablespoons flour. Let cook, season with salt, cayenne and a dusting of nutmeg. Serve very hot with biscuits or toast, for supper.

Griddle Cakes.—Mix two cupfuls of flour, one tablespoonful melted butter, two cupfuls of sour milk, one-half teaspoonful of salt, one teaspoonful of soda, one egg,

and one tablespoonful of sugar. Drop by spoonfuls on a hot griddle greased with butter. Cook until browned, turn and cook on the other side. Serve hot with butter or maple syrup.

Sour-Milk Biscuits.—Mix together two cupfuls of flour, three tablespoonfuls of butter, one teaspoonful salt, one-half teaspoonful of soda, and one in a cupful of sour milk. Knead lightly on a floured board, roll to one quarter of an inch in thickness, cut with a biscuit-cutter, place on a greased tin, and bake from twelve to fifteen minutes in a hot oven. This will make twelve biscuits.

Maple Syrup Cookies.—Mix together one egg, one cupful of white sugar, three

tablespoonfuls of butter, one cupful of sour cream, one teaspoonful of soda, three tablespoonfuls of boiling water, and one-half teaspoonful of salt. Add enough flour to make of the right consistency to drop from a spoon. Grate maple sugar on each cookie and bake eight minutes in a moderate oven.

Date Loaf.—Three cupfuls of flour, half a cupful of butter, half a teaspoonful of salt, one compressed yeast cake, half a cupful of milk, two eggs, one cupful of chopped dates and half a cupful of Sultana raisins. Sift the flour and salt into a warm basin, add the raisins and dates. Heat the milk and butter together, then cool slightly and mix with the yeast cake.

Pour them among the flour and add the eggs well beaten. Knead lightly and allow to raise for one hour. Knead again with a little flour and put into a buttered tin. Allow to raise for half an hour. Bake in a hot oven for three-quarters of an hour. When cold cut in slices.

Gingerbread With Whipped Cream.—One cup molasses; 2 cups butter, 1 teaspoon ginger, 1/2 teaspoon powdered cloves, 2 teaspoons cinnamon, 1/2 teaspoon powdered allspice, 2 teaspoons soda, 3 cups flour, 2 eggs, 1 cup boiling water, 1 teaspoon baking powder. All measurements level. Beat butter and sugar to a cream, stir in the spices, then add the molasses and the hot water, to which the soda has been added. Add the flour and baking powder sifted together, and lastly the well-beaten eggs. Turn into a greased and floured tin and bake in a moderate oven until it shrinks from the sides of the pan. Serve plain when cold, or hot with whipped cream.

Veal Loaf.—Mix well together 3 lbs. finely chopped veal with 1/2 lb. salt pork. Add 4 crackers rolled fine, pepper and salt to taste, add 1/2 teaspoonful nutmeg. Add 3 beaten eggs and make into a loaf. Bake 1 1/2 or 2 hours in a slow oven, basting with butter from time to time. Put a little rolled cracker on the outside of the loaf. If preferred, only one egg may be used, but add 1/4 cupful milk.

Pineapple Salad.—Two cupfuls shredded pineapple, 1 cupful diced celery, and two-thirds cupful nut kernels. Mix together and place on lettuce leaves, with a boiled salad dressing to which has been added some powdered sugar and whipped cream.

Fish Omelet.—Cook together 1 level tablespoonful flour and 1 of butter. Add gradually 1/2 cupful hot milk and a little pepper. Pour boiling water on 1/2 cupful shredded codfish, drain and mix with the thickened milk, then add 2 cupfuls cold potatoes chopped fine. Melt a tablespoonful of butter in a spider. When hot turn in the fish and cook slowly until a crust has formed on the bottom, then fold over and serve on a hot platter.

Oatmeal Cookies.—Three cups oatmeal, one of sugar, three of flour and one cup of lard rubbed together; one teaspoon soda dissolved in one-half cup or more of water, salt, roll very thin, and bake in hot oven.

Graham Muffins.—Two cups sour milk, one egg, one spoon melted lard, one heaping teaspoon each of salt, soda and sugar, and Graham flour to make quite stiff. Hot oven.

Lemon Tarts.—Grated rind and juice of two lemons, or three small one, two eggs, two cups sugar, put on stove and simmer until like jelly.

The Scrap Bag.

To Protect Stocking Tops.

To protect the tops of stockings from being torn by suspender clasps, stitch a piece of old kid glove over the top of the stocking at the point of contact. Another plan is to stitch a bit of tape in which a small buttonhole has been worked, at the top of each stocking. The "button" of the clasp goes through the hole.

Left Over Porridge.

Add to the porridge enough milk to make it into a soft batter, a little soda, 1 egg and a little flour. Beat well and make into griddle cakes. Serve hot with syrup, butter and sugar or jam.

A Sanitary Flour Bin.

A swinging shelf with protecting sides is better for flour than a bin. Place the flour in the bag on this shelf, and keep the shelf well dusted off. When the bag is empty wash and boil it. A flour bin is hard to keep in good condition, as old bits of flour adhering to it are likely to become musty.

To Make A Broom Last.

Soak the broom well before using and from time to time, and when it is not in use, keep it hanging with the brush side up. This will make it last longer and will keep it from running off to one side in shape.

To Wash Colored Satins.

Colored satins, like most other materials, can be washed, provided the operation be carefully performed. There is a decided knack in carrying out such

The Beaver Circle

Grimps or Grumps.

BY ROBERT SEEVER.

It is better to be a Grimp than a Grump, It is also more pleasant by far, So if you will listen, I'll tell how you can Discover which species you are. If you wake in the morning and do not get up

Until after the breakfast-bell rings; If you can't find your book or your gloves or your bag,

And some one has hidden your things; If every one's sober, and nobody smiles; If the sun has gone under a cloud; If nobody pays much attention to you, Although you may speak very loud;

In fact, if you find every one in the dumps, You may be very sure you belong to the Grumps.

But if you get up with a smile on your face,

And whistle a tune as you dress; Your hat or your gloves may not be in their place,

You're good humored, nevertheless; If you look for the sunshine in others you meet,

And give it, unmeasured, to all; If you think that the world is as right as can be,

And that no one is petty or small; If you conquer the Grouches and similar umps,

You may be pretty sure you belong to the Grimps.

There isn't much difference really, you see, In deciding the sort of a person to be. The only distinction, you'll find, if you try, Consists in the use of the U or the I. And whether this latter is I or is U, Depends most of all on your own point of view.

Little Bits of Fun.

Little Don had been going to school for several weeks when one day he came home and said: "Mother, I do wish I had some warts or freckles on my face like the other boys. I hate to look so plain and smooth."

All Right.—Teacher—"Now, boys, I want to see if any of you can make a complete sentence out of two words, both having the same sound to the ear."

First Boy.—"I can, Miss Smith."

Teacher.—"Very well, Robert. Let us hear your sentence."

First Boy.—"Write right."

Teacher.—"Very good."

Second Boy.—"Miss Smith, I can beat that. I can make three words of it—Wright, write right."

Third Boy (excitedly).—"Hear this—Wright, rite right."—Tit-Bits.

Some Bits from Competition Letters.

Some very nice little bits appeared in letters which were not prize-winners in the last competition. We have found room to publish a few of these to-day.

Charlotte Carmichael, Ilderton, had a very pretty thought when she said in her essay on Florence Nightingale, "Of course, there are many difficulties and hardships to put up with in being a nurse, but I think the pleasure, hope and delight of seeing those whom we care for, slowly but steadily recover, would overshadow all that we ourselves might have to suffer."

Charlie Worrall says: "I think that a soldier is the most honorable person to be at the present time."

Harold Peterson, who wants to be a successful businessman, says he would pay his assistants good wages—a very kind idea for a budding businessman.

Stewart Hill admired very much the way Sir Sam Hughes hurried men overseas at the beginning of the war; while Janet Grieve, with boylike ambition, would like to be a great commander so that she could "give back freedom and peace" to the Belgians and other nations.

A letter with no name signed, gives a nice little sketch on the life of Alfred the Great. We do not know whether it was meant for the competition or not.

A Problem.

Some time ago Marian Mundle sent the following problem: A boy spent 40 cents more than two-thirds of his money and had 16 cents left. How much had he at first?—the problem to be worked without algebra.

work; and the great point in attempting washing colored satins is to do the washing, drying, and ironing evenly, otherwise there will be marks on the surface which will look like stains. Wash the dark material quickly in a lather of soap-jelly and warm water, and rinse in warm water, to which has been added a tablespoonful of cloudy ammonia. Shake the material backwards and forwards. Hang out the satin in the shade without wringing, and when half dry iron on the wrong side.—Sel.

Cleaning A Spotted Bath Tub or Sink.

Fill tub half full of boiling water then pour in half a can of concentrated lye and with an old broom scrub well. Rinse with clear water and wipe well.

A Dustless Duster.

A little "O-Cedar" oil will convert any soft cloth into a dustless duster. If it is not on hand, soak the cloth in coal-oil and hang in the open air until dried. Repeat each time after the cloth is washed.

A Housecleaning Hint.

A strong stick with a notch in the end of it is a great help to the housekeeper in taking pictures from the walls.

A Rusty Stove.

Before attempting to polish a rusty stove go all over the surface with a soft rag dipped in vinegar. If very rusty a second application may be necessary after the first one dries. Let dry, then polish as usual.

Fish Bone in Throat.

A raw egg swallowed immediately will usually remove a fish bone which sticks in the throat.

Glaze for Starched Articles.

To give a nice glaze to starched articles drop a piece of alum, about the size of a walnut, into the starch while it is still hot.

Dandelions for Greens.

Don't forget, as spring opens, that dandelions make excellent greens. They should be gathered when very young, boiled in salted water, seasoned with pepper and butter, and served very hot, with potatoes and meat or on buttered toast for tea.

To Remove a Knot.

How many needlecrafters know how to take a knot out of thread when sewing? Just take hold of the thread firmly—between the work and the knot—with your left hand, and with the right hand catch your needle into the knot and jerk quickly from you; the knot will come out every time.

Current Events.

The Duchess of Connaught died in London on March 14th.

Sir Edward Kemp, Minister of Militia for Canada, will call for 50,000 men to begin training almost immediately.

Another German air raid was made on Kent Co., England, March 16th.

China has broken off diplomatic relations with Germany, and all German representatives in the Empire have been handed their passports.

The revolution in Russia still holds the center of attention in world events. There is likely to be little further trouble in consolidating it, as the army is proving itself solidly with the provisional Government, and soldiers are everywhere rounding up and imprisoning the police. One of the first steps of the new regime has been to declare freedom of speech and of the press, and a general amnesty to all religious and political prisoners with fair trial to all. . . . From the Western front comes the news that Haig's troops are still making good in the Peronne region. Among the Allies the development of affairs in Russia is looked upon as a blow to the Teutons. Bapaume was taken by British troops during the week, as was also the city of Van, in the Mesopotamia Valley, where Gen. Maude has now advanced 75 miles beyond Bagdad.

The Power Behind the Profitable Farm

Farmers to-day have the best chance ever to make money—if they can only solve the labor problem!

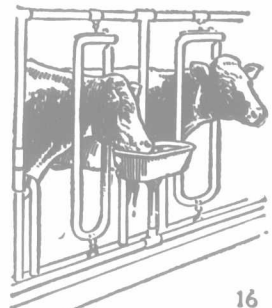
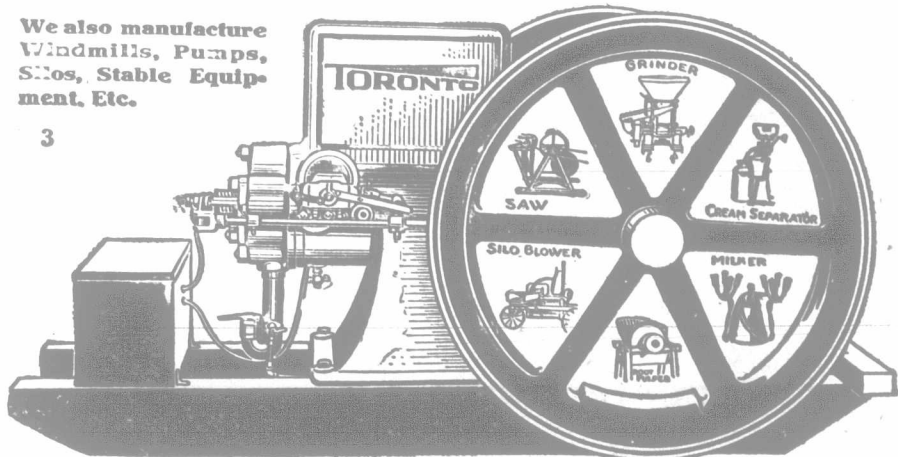
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The same answer—\$1.68—was sent by Mary Wishart, Paris; Albert Richardson Crosshill; Mary Coates, Essex; Graeme Kirstine, R. 2, Walkerton; Grace Smith R. 2, Brantford.

Albert Richardson's is given: The boy spent 40 cents and two-thirds of his money and had 16 cents left. 40 and 16 equal one-third of his money, or 56 cents. Three-thirds equal 56 multiplied by 3, or \$1.68.

Senior Beavers' Letter Box.

Dear Puck and Beavers.—As I have nothing to do now I thought I would write a letter to your Circle. I suppose it won't be long before spring now. I am sorry to see winter go as we cannot sleighride and skate and play our winter games, but am glad to have spring just the same.

At Easter we try our best examinations

for higher classes, and in June the final. I have two Angora rabbits which I call Curly and Dolly. Not long ago I had four little bunnies, but they all died on account of it being too cold.

Well, I will close, Wishing the Circle every success, as I have written quite a lot for this time. Can anyone guess the answer to this riddle?

What only letters of the alphabet would be late for dinner if all were invited? Fonthill, Ont. A. CLARK.

Dear Puck and Beavers.—It is quite a long time since I have written to the Circle. How are you all Beavers? Say, I want a whole lot of the Beavers to write to me and I will reply promptly. Say Puck, can you give me the addresses of these girls: Eva Scott and Margaret somebody who wrote the story about the burglars, etc.? I believe her last name was Darling or something. It is very

cold here now, about 21 or 22 below zero. I tried in the contest, Puck, but I don't expect to be so lucky as to win another prize. There are lots of parties and skating parties around here now. Well, I will close now with a riddle.

Why is a mouse like some hay? Ans.—Because the cattle eat it (cat'll eat it).

Well now Beavers be sure and write.

Yours sincerely,

JANET M. GRIEVE.

Seaforth, Ontario, Box 287.

P.S.—Are you going to have a garden competition Puck? If so I would like to enter it.

We shall not have a garden competition this year, Janet. Too few of the Beavers took it up the last two years.

Perhaps the girls whom you mention will send you their addresses.

Dear Puck and Beavers.—My father has taken "The Farmer's Advocate" for about twenty years, and I always like to read the letters. I go to school. My teacher's name is Miss Irene Morrison. I like her very much. In cold, stormy weather my brother takes me in the sleigh. I have three cousins in the war and one killed. I wish this war would soon come to an end. I have read a few books: "Lost in the Back Woods," "Through the Looking-glass," "Black Beauty," and a few others. As my letter is getting long I will close with a riddle.

As I went over London bridge I met a little boy crying; I asked him what was the matter, and he said his mother dyed on Saturday and went to church on Sunday. Can anyone tell the answer? Hope the w.-p. b. has had its dinner.

MARY MACFARLANE.

R. F. D. No. 1, Kelso, Que.
(Senior Grade IV, Age 11.)

Honor Roll.—Edward Harrison, Vera Graham, Mary Scott, Munroe Lawrence Mona Middleton, Kathleen Hunter, Ernest De Long, Edith McKinnon, Margaret Savor (New Brunswick).

Beaver Circle Notes.

Correspondents Wanted.—Edward Harrison (age 12), R. 2, Ripley, Ont.; Mona Middleton (age 11), R. 2, Merlin, Ont.; Munroe Lawrence (age 13), R. 3, Harrowsmith, Ont.; Mary Scott (age 12), R. 7, Woodstock, Ont.; Ernest De Long (age 11), R. 6, Picton, Ont.; Edith McKinnon, Box, 13, Paisley, Ont.

Riddles.

What has one foot and its heart in its head? Ans.—A cabbage. Sent by Minnie Wettlaufer.

Why is a young colt like an egg? Ans.—He has to be broken before he is used. Sent by Ivan Calhoun, Dobbinton.

What has four legs and cannot walk? Ans.—A stove. Sent by Margaret Savor, Upper Dundee, N. B.

Junior Beavers' Letter Box.

Dear Puck and Beavers.—Here comes another leaf to hang on your lovely tree. My father has taken "The Farmer's Advocate" as long as I can remember, I don't believe we could do without it. I enjoy reading the letters which the Beavers write.

How many of you like reading? I do. I have read a number of books. Some of them are: "Wild Kitty," "A Bunch of Cherries," "Little Mother to the Others," "Five Hundred Dollars," "Through Forest and Fire," and many others.

I go to school every day. I am in the Jr. III class. There are nearly forty attending our school now. At school we play Rachel and Jacob, White Worry, and other games in the winter-time, and in the summer-time we play prisoner's base, two deep, run a mile, hide-and-seek and baseball.

Well, as my letter is getting long I will close with a riddle.

Sixty (tea) cans upon a shelf, one fell off, how many were left? Ans.—Five.

Hoping this escapes the w.-p. b., I remain, your friend,

ALEXANDER MORRISON.

Cremore, Ont., R. R. No. 2.
(Age, 9 years.)

Dear Puck and Beavers.—My father has taken "The Farmer's Advocate" for some time, but I have never written to your charming Circle. I enjoy reading your letters very much. We have four little calves, which my sister and I named Jack and Jill, Bob and Bill. I like reading very much. Some of the books I have read are: "Sowing Seeds in Danny," "The Second Chance," and "Lizbeth of the Dale." I am in the second book at school. I will now close with a riddle.

As I walked through a field of wheat I picked up something good to eat. 'Twas neither fish, flesh nor bone, and after awhile it could run alone. Ans.—An egg. May I come again?

WINNIFRED ROBERTS.

Denfield, Ont., R. R. No. 2.

Dear Puck and Beavers.—I am going to tell you about my baby brother, he has three teeth and is starting to creep. Whenever he sees mamma he will laugh. I like to play with him; he is not very cross either. And he got a little dolly that will squeak, from Santa Claus. My letter

is getting long, I will close. I am in the junior second class. Age 8. ISABEL BROHMAN. R. R. No. 2, Ariss, Ontario.

The Windrow

The city of St. Thomas, Ont., will hold a Tulip Festival on May 11, 12 and 13 (Tulip Sunday). St. Thomas is noted for its beautiful flowers, much of its energy in flower growing being due to the enthusiasm and energy of one man, Dr. Bennett, who is the present President of the Ontario Horticultural Association. At the time of the Tulip Festival 25,000 beds will be in bloom.

An equestrian statue of Col. Wm. F. Cody, "Buffalo Bill", is to be placed upon a mountain peak which commands a view into four states of his beloved "wild west."

A number of Belgian newspapers, although very small ones, are being printed and circulated, in spite of the most vigilant efforts of the Germans to discover where they are printed.

Many Canadian artists are at the front, among them Jas. L. Graham, Pte. A. Y. Jackson, Capt. Ernest Fosbery, (landscape painter), Pte. J. W. McLaren who served with the "Princess Pats," R. S. Hewton, Sergt. Maillard, Lieut. Storm of Weston, who has received a Military Cross, and Louis Keene of Montreal. Pte. Jackson and Capt. Fosbery have been wounded.

Heavy steel nets have been laid at the entrance of all harbors on the British coast. They are to stop torpedoes aimed at shipping.

A typewriter especially constructed for the use of one-armed men has been invented in the United States. Prof. Jules Amar, a Frenchman, has invented a wonderful hand which can be used to run an ordinary typewriter. So crippled soldiers are being provided for.

Newspapers in England are being reduced in size owing to restrictions on the importation of paper. Mr. Lloyd-George, in referring to this item on the restrictions list, remarked that he did not know whether newspapers ought to be treated as "a luxury, a stimulus, a necessity, or a nuisance in life."

Farming in Alaska.

The following from an article "Among the Homeseekers of Alaska" by Frank G. Carpenter, is most interesting. He is speaking of the Tanana Valley, in the vicinity near Fairbanks.

"As we rode up the valley it was difficult to realize that we were on the border of arctic Alaska. The thermometer was at 90 degrees in the shade. There was no snow on the tops of the mountains, and the hills and valleys were covered with green. At times we passed through plains spotted with wild flowers. There were beds of buttercups as yellow as gold, and daisies as pink as the cheeks of a baby. In some places the ground was covered with blueberry bushes, the fruit as large as cherries and loaded with juice. Now we passed through forests of birch, spruce and cottonwood. Some of the trees were two feet in diameter. Where the woods had been cut or burned away there were vast expanses of flaming pink flowers as high as the wheels of the car, and everywhere the roadside was hedged with green grass and red-top that reached to the hubs. Now and then we went over corduroy, our automobile bouncing high under the fast driving of the Jehu of this northern frontier.

"We passed many small farms cut out of the woods, with oats, hay and potatoes in blossom. We saw cattle grazing, and by and by came to the experiment farm which the government has established in the heart of the Tanana Valley, about four miles from Fairbanks. The farm is beautifully located. It consists of 1,280 acres of gently sloping hillsides and bottom land, sloping at one side to a wide stream and rolling thence on up and over a low range of hills.

"At one end of the farm is the site recently selected for the Alaska Agricultural College, the cornerstone of which

was laid in 1915. The college will stand on a hill, giving magnificent views for fifty miles up and down the Tanana Valley, taking in the Fairbanks and also the Blue Mountains, far off in the distance. On a bright day Mount McKinley is visible."

"The winters", he says, "are cold in the Tanana Valley, the mean temperature in January being about 20 degrees below zero. The thermometer ranges from the freezing point to 60 or 70 degrees below zero during December, January and February. After the freeze-up, which begins about the last of October, there is steady cold weather from then until May. The ground is frozen as hard as a rock; quiet bodies of water become ice to a depth of six feet; and there is from three to six feet of ice on the lakes and streams. The Yukon has three or four feet of ice. The streams are then the sled roads, and travel is easier than in the summer. The ice and snow begin to melt in April and early May. The small streams flow into the larger ones, raising the ice sheet so that it is torn away from the shore. It breaks into pieces and starts on its way to the sea, the cakes of ice grinding against one another and piling up in great masses. As they go on they carry every movable thing in their path. This movement lasts for a week or so, when the streams clear, and the boats start out from their winter quarters."

—Adverse circumstances, it would seem, yet what can stop the true pioneering spirit?

Mid-winter.

Much of the history of the human race could be deduced from the meaning which the word winter has come to have, and from the months of the year which it calls to mind. The dominance of the northern hemisphere is written into it.

Probably, to the majority of persons who have passed their youth, winter is a rather gloomy and depressing season. They find themselves shut away from their favorite pastimes, restricted by the snow to more circumscribed geographical boundaries, and chilled by the cold from which their uncomfortably heavy clothing does not shield them.

This is not at all as it should be, or need be. When old winter pushes you with his rough hand, push back, instead of cringing. You will find that instead of maltreating you further, he will henceforth hail you as a brother.

The slavery of clothes is the greatest single hindrance to the enjoyment of a northern winter. Lumbermen and hunters and all savage races know this; but the majority of the civilized men still cling to hard, close-fitting leather shoes, stiff hat and gloves. With a proper disregard of style, one can be perfectly comfortable outdoors in mid-winter anywhere south of the arctic circle. Two pairs of woollen stockings, moccasins, mittens, and a cap that can be drawn over the ears would be an emancipation proclamation for many a man who now dreads the winter; and exercise would warm him better than his furnace fire.

To those who understand it, mid-winter is a beautiful season. The air is purer than at any other time, for the snow covers the baleful dust, and cold arrests those processes in nature's laboratory, which, although necessary, are not always pleasant. In the woods the delicate tracery of the feet of birds and beasts lays open secrets that are hidden during the rest of the year. A sled gives one the fastest motion man is capable of enjoying without help of a beast or machinery, and a pair of skates the easiest and most graceful motion. Children enjoy the winter, and the man who will do as the children do will find himself growing young.

The scene was a kinema palace where the Somme battle pictures were being flickered. As the Warwickshires were seen going over the top to the attack, an excited Birmingham man exclaimed triumphantly, "What about your Highland regiments now?" As luck would have it, there was a short, bandy-legged Scot in a kilt within hearing. He flared up, and replied: "What about oor Hielan regiments? Why, they are keepin' back the Germans while your men are gettin' their photographs taken." — London Opinion.

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Select Yellow Dutch Onion Setts...lb. 35c, 5 lbs. \$1.70
XXX Guernsey Parsnip, fine, smooth roots...Pkg. 10c., oz. 20c., 4 oz. 50c.
Detroit Dark Red Table Beet (round)...Pkg. 5c., oz. 20c., 4 oz. 50c.
Chantenay Red Table Carrot...Pkg. 5c., oz. 25c., 4 oz. 65c.
Rust Proof Dwarf Black Wax Butter Beans...lb. 50c., 5 lbs. \$2.25
Early White Cory Sweet Table Corn...lb. 35c., 5 lbs. \$1.50
London Long Green Cucumber (great cropper)...Pkg. 5c., oz. 15c., 4 oz. 40c.
XXX Solid Head Lettuce...Pkg. 10c., oz. 25c., 4 oz. 75c.
Improved Beefsteak Tomato...Pkg. 10c., 1/2 oz. 35c., oz. 60c.
XXX Scarlet Oval Radish (mild, crisp)...Pkg. 10c., oz. 20c., 4 oz. 50c.
Little Marvel Garden Bush Peas, very early...4 oz. 15c., lb. 40c.
Early Branching Asters, Crimson, Pink, White or Mixed...Pkg. 10c.
Mammoth Fringed Cosmos, mixed colors...Pkg. 10c.
XXX Mammoth Verbenas, superb mixture of colors...Pkg. 10c.
XXX Spencer Giant Sweet Peas, all shades mixed...Pkg. 15c., oz. 35c.

"Pakro" Seedtape. "You Plant it by the yard." 2 packets for 25c. Ask for descriptive list.

Rennie's Seed Annual Free to All. Delivery Free in Canada.

Order through your LOCAL DEALER or direct from

RENNIE'S SEEDS WM. RENNIE CO., LIMITED King and Market Sts., TORONTO Also at MONTREAL WINNIPEG VANCOUVER

Ornamental Iron Fence



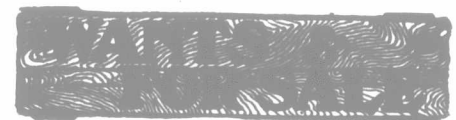
BEAUTIFY your farm home by erecting a handsome permanent DENNIS iron fence. It is surprising what an air of solidity and prosperity your place will take on, and how its value will be enhanced by the improvement in its general appearance. A good DENNIS iron fence costs no more than wood or wire, in the end, and looks better all the time. We have dozens of designs. Write for illustrated printed matter today.

Agents Wanted

Good live agents can make big money, acting as our representatives, and securing orders for iron fence and other lines we produce.

There are several good prospects around you right NOW. Why not get into this business for yourself? Write for particulars, stating age, married or single, occupation, etc.

The Dennis Wire and Iron Works Co., Limited, London, Can.



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

TERMS—Three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order. No advertisement inserted for less than 50 cents.

"EXPERIENCED GIRL FOR GENERAL housework, no washing, good wages. Mrs. J. E. McConnell, P. O. Box 505, London, Ont.

FOR SALE—FIRST CLASS 50 ACRE FARM all wire fenced, with good buildings. Barn 42 x 52, with good stabling, all-steel granary. Soil 1/2 grass with two acres fall wheat. On the property is 1 1/2 story red brick veneer dwelling. Near railway and school. Bargain for immediate sale. H. J. Cotty, Real Estate and Insurance, 103 Downe St., Stratford, Ont.

MAID FOR GENERAL HOUSEWORK; 3 IN family; wages twenty dollars per month. Apply Mrs. Garvey, corner Elmwood avenue and Ridout street, London, Ont.

THOROUGHLY EXPERIENCED YOUNG farmer, single, wishes position for himself and friend to work and manage farm of 100 acres or over; full details expected; highest of references. Apply Farmer's Advocate, Box M, London, Ont.

WANTED AN EXPERIENCED FARM HAND (single) for general farm work and stock feeding for a term of eight months or 1 year. George D. Fletcher, Erin, R. R. 1, Ont.

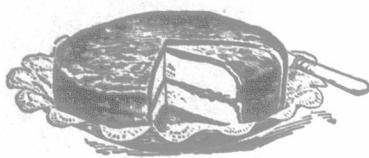
WANTED—AN EXPERIENCED STOCKMAN single, or a young man desirous of learning. Apply to Robt. McEwen, R. R. 4, London, Ont.

WANTED—GOOD, RELIABLE FARM HAND, good milker and teamster. Yearly engagement. Give reference, nationality, wages expected. Wm. Manning & Sons, Woodville, Ont.

WANTED—A MARRIED MAN FOR STOCK farm. Yearly engagement. Free house, garden and fruit. State wages etc. Box 3, Farmer's Advocate, London, Ont.

SEED BARLEY, O. A. C. Tests 50 lbs. per bushel. Price, \$1.50 per bushel. Bags free.

JOHN TAYLOR, JR., R.R. No. 4, Galt, Ont. When writing please mention Advocate.



Coffee Icing

Cook two cups of Lantic Sugar with half a cup of strong coffee until the syrup forms a soft ball when dropped in cold water. Add a teaspoonful of vanilla extract and beat until cold enough to spread.

Lantic Sugar

"The All-Purpose Sugar"

is specially good for cake baking on account of the fine granulation.

The Sugar with the red ball trade-mark

Packed in 100-lb. Bags

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Atlantic Sugar Refineries, Ltd.
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POULTRY AND EGGS

BARRED ROCK EGGS FROM BRED-TO-LAY, trap-nested stock, which have size and quality combined. Our stock have free range; should hatch well. Eggs, \$1.00 per 13; \$6.00 per 100. Biggar Bros., Oakville, Ont.

BARRED ROCK COCKERELS FOR SALE—Write for free circular and prices. John Pringle, London, Ont.

BARRED ROCKS—GRAND LAYING STRAINS. Cockerels, pullets, eggs. Prices right. Central Poultry Yards, Colborne, Ont.

BUFF ORPINGTONS, WHITE WYANDOTTES Imported and "International Laying Contest" strains. Eggs, \$3 per thirty. Express prepaid. Buff Orpington cockerels \$3. "Ingleside Farm", Ancaster, Ont.

BLACK LEGHORNS—WINNERS CANADA'S best shows. Eggs, \$5, \$2.00 and \$1.50 per fifteen. Also stock. Fred de Gex, Kerwood, Ont.

CHOICE S.-C. BROWN LEGHORNS, S.-C. Reds. Cockerels, \$2 each. Wm. Bunn, Denfield, Ont.

EGGS FOR HATCHING—WHITE WYANDOTTES—From winners and layers, 9 chicks guaranteed. Prices \$3.00, \$2.50 and \$2.00 per fifteen. Write for my mating list. Frank W. Read, Sydenham, Ontario.

EGGS FOR HATCHING, SINGLE-COMB brown Leghorns from imported stock, mated with vigorous cockerels; very persistent layers, getting 160 eggs daily from 220 hens. Price \$1.00 per 13; \$2.25 per 40, or \$5.00 per 100. W. C. Shearer, 1 night P. O., Ont.

INDIAN RUNNER DUCKS, SPANISH Barred Rocks, Brahmas, White Leghorns, Hamburgs, African geese, white Guineas, Pearl Guineas, Bourbon red turkeys. Eggs only. Send stamp for mating list. John Annesser, Tilbury, Ont.

RINGLET BARRED ROCKS—PURE-BRED Trap-nested, heavy winter layers. Beauty and utility combined. Setting \$2.00. 100% fertility guaranteed. Book order now. Particulars F. Goldham, Barriefield, Kingston, Ont.

ROSE-COMB RHODE ISLAND REDS 240-egg strain. Martin and Gull's 220-egg strain White Wyandottes; 15 eggs, \$1.25. Special pen Reds, \$3.00 setting; Barron's white Leghorns, \$2.50 setting; baby chicks and yearling hens. Wesley Shanlin, Ilderton, Ont.

REGAL DORCAS WHITE WYANDOTTES champions eleven years at New York State Fair also wonderful records in laying contests. Stay white Utility Cockerels, \$3.00 and \$5.00 each. Pullets, \$2.50 and \$3.00 each. Hatching eggs, \$3.00 and \$5.00 per setting. Send for free illustrated catalogue. John S. Martin, Drawer F Port Dover, Ont.

S.-C. WHITE LEGHORNS, DAY OLD CHICKS from vigorous heavy laying stock, \$15 per hundred. Order now. Live chicks guaranteed. Wm. Adcock, Denfield, Ont.

ROSE-COMB BROWN LEGHORNS Cockerels for sale. Bred from our heavy laying strain, winners at Chicago, Detroit, Ont. etc. Prices reasonable. We need the room. Galloway & English, Box A, Ingersoll, Ont.

Questions and Answers.

1st—Questions asked by bona-fide subscribers to "The Farmer's Advocate" are answered in this department free.

2nd—Questions should be clearly stated and plainly written, on one side of the paper only, and must be accompanied by the full name and address of the writer.

3rd—In veterinary questions, the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.

4th—When a reply by mail is required to urgent veterinary or legal enquiries, \$1.00 must be enclosed.

Miscellaneous.

Thrush.

I have a mare which is lame in the front feet. The hoofs appear hard but there is a very disagreeable odor from them. I believe the trouble is due to thrush. What causes this trouble and what remedy do you recommend?

Ans.—Thrush is caused by irritating material being allowed to remain in the cleft of the frog. Horses standing in semi-liquid manure or grazing on damp pasture ground sometimes suffer from this trouble. In order to prevent the trouble the cleft of the foot should be cleaned out regularly. As a rule the whole frog becomes soft and lameness is in proportion to the extent of the disease. Place the animal in a clean, dry stall, remove any partially detached portions of the frog and apply a little sulphate of zinc into the cleft and work it down to the bottom with some blunt instrument. It is a good plan to fill the cleft with padding to prevent the entrance of foreign material. This treatment soon arrests the discharge and dries up the affected part so that the growth of new horn takes place. An application of formalin one part to four of water is also considered a simple, cheap, safe and effective remedy.

Whitewash.

We have a frame kitchen which has been either whitewashed or lime washed on the outside. How should the wash be made and what is the best method of applying it?

Ans.—A receipt which has been highly recommended is for whitewashing a building: Take half a bushel of unslaked lime, slakewith warm water and cover it to keep in the steam. Strain the liquid through a fine sieve and add one peck of salt, previously dissolved in warm water, 3 lbs. of ground rice boiled to a thin paste and stirred in boiling hot, then add ½ lb. Spanish whiting and 1 lb. of dissolved glue. Add 5 gallons of hot water to the mixture, stir well and allow it to stand for a few days. It is advisable to apply this mixture hot, and one pint is supposed to cover about a square yard. This will give some idea of the amount of material required. It can be applied with either a brush or a spray pump. If using the pump care should be taken to thoroughly strain the wash so that there will be no danger of the nozzles clogging.

Tuberculosis in the Flock.

My flock of hens suffered from tuberculosis. I killed all that showed symptoms and kept the apparently healthy ones. Some of them lost all their feathers, leaving the body covered with stubs or pin feathers about three-eighths of an inch long. Has this any connection with tuberculosis?

2. Is there any danger of this disease being communicated to stock, or to man?

3. How should a badly infected flock be treated?

Ans. 1.—We do not know that there is any connection between the hens losing their feathers and the disease spoken of. We cannot state what would cause the birds to lose their feathers at this time of year unless it is a late moult. We know of flocks where a number of the hens did not moult in the fall but lost their feathers in February.

2. Some authorities claim that the bacilli of the avian, bovine and human types of tuberculosis are entirely different. However, a good deal of experimenting has been done in order to ascertain whether or not avian tuberculosis was communicable to mammals. It is claimed that the bacilli are not so different but that each may grow in the environment best suited to the other. While it is not generally conceded that there is much danger of man contracting the disease from birds, yet Pearl, Surface and Curtis, in their book on "Diseases of Poultry" state: "It thus appears that while fowl are not very likely to contract tuberculosis from domestic animals or from

man, yet fowls that have the disease are a serious menace to the other animals on the farm, as well as to the poultryman and his family."

3. If the flock is known to be badly infected with tuberculosis it is advisable to destroy the entire flock and then thoroughly disinfect the premises. The ground which the birds frequented should be dug or plowed and given a coat of lime. All utensils as well as the building should be thoroughly gone over with some strong disinfectant. This disease is becoming very common and every precaution should be taken to stamp it out. Certain birds in an infected flock may not show symptoms of the disease, but at the same time may be sufficiently infected to transmit the disease to other birds with which they come in contact. It is claimed that pigeons and sparrows may carry the disease from one flock to another. To what extent this has been proven we are not aware, but nevertheless every poultryman should carefully guard his flock from this disease which is so fatal and so hard to control.

Gravel for Silo.

1. How many yards of gravel will be required to build a silo 14 by 30 feet, calculating according to the thickness of wall you recommend? How much gravel would be required for two 12 by 30-foot silos? How many barrels of cement will be required?

2. What must the dimensions of a box be to hold one yard, 1½ yards, and 2 yards of gravel?

3. Would brace wire twisted together and placed every six inches apart in the concrete be satisfactory reinforcement?

4. Where 10 acres of corn are grown, would it not be advisable to build two 12 by 30-foot silos, rather than one 14 by 30, when only six or seven cows and a few young cattle would have to be fed silage?

5. Would you consider it advisable to build a round hen-house of concrete? Could we build a hollow wall? In such case what thickness would you recommend the two walls to be and what space should there be between the walls?

6. In building a hollow wall or foundation for a barn, should each of the walls be made five inches thick? What space should be left between?

7. If a cement wall is plastered inside and out, will the action of frost be reduced?

8. Do you not think that by filling a silo with a blower there is more air left in the silage than by filling with carriers?

9. Where could I obtain information about wireless telegraphy?

Ans.—1. A silo 14 by 30 feet with an 8-inch wall will require about 35 yards of gravel and 30 barrels of cement. Two 12 by 30 feet will require about 60 cubic yards of gravel and 51 barrels of cement.

2. The dimensions of a box to hold one cubic yard is 9 feet long, 3 feet wide, and one foot deep. To hold a yard and one-half the box would have to be 6 inches deeper, and it would be necessary to have it 9 by 3 by 2 feet to hold 2 yards. If it is not desired that the box be that deep, it might be made a little longer or a little wider.

3. Brace wire, barb wire or quarter-inch round iron, are good materials for silo reinforcement.

4. We would prefer the smaller-sized silo where a small herd is to be fed. It is necessary that a certain amount of silage be removed from the surface each day after the silo is opened, in order to prevent the feed spoiling. A depth of about two inches is recommended to be removed each day.

5. A round hen-house would be a new type. While it may work, we doubt the advisability of using concrete for the walls of the hen-house; lumber is drier, and dryness is essential to the health of the bird. Four-inch walls with a 3 or 4-inch air space would be sufficient in thickness if it was decided to build a double wall.

6. Each wall should be 5 or 5 inches thick with a space of about 4 inches between walls.

7. Plastering concrete walls fills up any slight opening and tends to lessen the amount of frost which will come through.

8. The force with which the corn is blown in the silo tends to make it more solid than when it drops from the carrier. Consequently there is less air in the silage.

9. Write the School of Practical Science, Toronto.

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MAKE your home and farm brighter and better for all the family—enjoy brilliant, clear electric light made without trouble by a

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Simplest and most reliable Lighting Plant made—comes all set up on one platform—or in separate units—lights house, barn and out-building for a few cents a week.

Also operates churn, separator, pump, washing machine, etc. Belts to any make of engine—stores current while engine is doing other work.

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POTATOES

9 4/5 bushels from 1 lb. of Seed

Three potatoes, planted in 56 hills, in Huron Co. Ohio, yielded this amount. The seed, the planting, and the crop harvested are matters of County record. You can do as well or even better by following my instructions. It is not a matter of variety of seed, or soil, or fertilizer used, important as each of these matters is, but it is the selection and cutting of seed and treatment. It was these elements that enabled me to produce the yield of 552 lbs. of potatoes from one pound of seed. Full information as to how it was done, the seed used, the soil, the fertilizer employed, the tillage and the methods of producing this large crop will be sent for ONE DOLLAR. Send your order now and grow more potatoes from less seed. Any one that feels too poor to spend a dollar to learn how to increase the yield in raising potatoes, send me your name and address. Planting time is near. Send your order to-day and raise more potatoes from less seed.

A. R. GIBSON, Brookfield, Ill.

For Sale

GOOD CLYDESDALE MARES, Registered and in-foal, and Fillies. Write me your wants. R. T. CARSON, Atwood, Ontario. Bell Telephone. Perth County.

PATENTS, Trade Marks and Designs Special attention given to Patent Litigation. Pamphlet sent free on application. Crown Life Bldg. RIDOUT & MAYBEE, Toronto, Ont.

Children in Foster Homes.

Many people are skeptical concerning the treatment accorded the children in foster homes and it is quite common to hear remarks that all adopted children are simply taken for the work that can be got out of them, and receive in return nothing but harsh treatment. This is occasionally true, for this is an imperfect world, but is not at all true of the great majority of children placed in foster homes and under the supervision of the Children's Aid Department.

During the past three months a list of some 40 children placed in foster homes in New Ontario was sent by the Provincial Superintendent of Dependent Children to Mr. Robt. Le Heup of Haileybury, with instructions that he was to personally visit each child and make an unbiased report as to the conditions existing. He furnished the Department with a report concerning each child and in summing up his work says:

"I wish to report that I have now either visited or received a reliable report on every child on my list, and where it has been necessary to remove and re-place a child I have done so. The work of visiting our little friends in this district has been a source of pleasure and education to me for one cannot see these children in their present surroundings without being impressed with the wonderful work being done by your Department, and filled with an enthusiasm for that work that will carry one over the rough spots that we find along the way."

During the past year over five thousand children were visited and the same testimony is borne by other official visitors.

J. J. KELSO.

Gossip.

Geo. Amos & Sons of Moffat, Ont., write: "Our cattle have come through the winter in good condition, and we have a fine bunch of calves coming on, and in order to make room for them we are offering at prices that will move them in the next thirty days. We have some of the best young bulls we ever offered, show material, and the very best of breeding. We have also a goodly number of cows and heifers bred, and with calves at foot. We would be pleased to have intending purchasers inspect our herds."

The London Shorthorn Sale.

The time is drawing near for the Western Ontario Consignment sale of Shorthorns, to be held in London on March 28. Those who have ever bought at this sale in the past will no doubt be present at the coming event, but those who have never attended before should get a catalogue from the Manager, Harry Smith, Hay, Ontario, and see what a good offering will be presented. Many good bulls and heifers have passed through the London sale-ring and the breeders promise a better sale on March 28 than they have ever held in the past. See the advertisement and correspond with the Manager.

Oxford District Sale of Holsteins.

Recently M. L. Haley, Advertising Manager of the Oxford District Holstein Breeders' Club wrote "The Farmer's Advocate" thus regarding their semi-annual sale to be held in Woodstock: "This will be the greatest sale the District has ever brought together. There will be two head offered, which are sired by a brother to the 50-lb. cow; also three head in-calf to him; several daughters of the great champion show bull, Prince Abbekerk Mercena; also females closely related to the new 37-lb. cow, which gave over 100 lbs. milk in a day. In addition to these there will be offered a three-quarter brother to Madam Posch Pauline, daughter of Prince Aaggie Mechthilde. Then there are bulls whose eight nearest dams averaged 24 lbs. Also a bull whose dam and sire's dam averaged 29.73 lbs. butter, and the dam gave over 100 lbs. of milk in one day. Further, there is a son and daughter from a 30-lb. cow, a 21-lb. three-year-old record from a 27-lb. cow, and sweepstakes winner in the dairy test. Buyers will also have a chance to procure bulls sired by a son of the \$50,000 bull. Most of the females have R. O. M. records or are from R. O. M. dams."

Lloyd-Jones' Dispersal Sale.

When sending a few notes regarding the stock which he will sell on March 26 and 27, J. Lloyd-Jones, of Burford, Ontario, writes: "The cattle will be sold on Monday, March 26. The Jerseys are winners, of choice breeding, and the Aberdeen-Angus are in good breeding condition. The dairy cows are a nice lot and the beef cattle are also in good condition. The Welsh ponies are all sired by the imported Welsh stallion, Daylight 2nd, and three are from our Dolly Imp. She has won \$250 and two championships at Toronto. They are all show ponies and anyone wanting a good one should not miss this sale. The sheep are all choicely bred and in nice condition. The ram lamb that won third at Toronto and first at Ottawa, weighs 170 lbs. and is one of the best lambs in America. There are three other registered lambs by the champion ram, all choice. The best pen of ewe lambs weigh 137 and 140 lbs. The breeding ewes are a choice lot. In the Southdowns, three ram lambs weigh 145 and 155 lbs.; the ewe lambs, 140 lbs. each. This will be one of the best sheep sales ever held in Canada. Do not miss this opportunity to get some new blood in your flock or start a new flock. Sheep will soon be higher than they are now."

The advertisement regarding this sale appeared in the issues of March 8 and March 15. Refer to it and write Mr. Lloyd-Jones for particulars.

Welland Shorthorn Breeders Organize.

For the purpose of furthering the interests of all breeders in Welland County and district as well as the Shorthorn breed in general, live stock men from all over the county met recently at the office of E. K. Hampson, District Representative for Welland and organized under the name of the Welland District Shorthorn Breeders' Club. The object of the club will be not only to create good fellowship and co-operation among all breeders of the district, but also to launch a systematic publicity campaign as to the merits of the herds in Welland county. It was also stated that from the numerous good herds throughout the district, buyers from a distance could, by visiting the various members of the club obtain a car load or two of good cattle at all times. The officers of the club, elected were as follows: Hon. Pres., W. H. Gainer; Pres., A. E. Howell; Vice-Pres., A. Vanderburg; Sec.-Treas., Chas. Gainer. Board of Directors: K. Bradshaw, W. H. Crowther, E. Bean, Jno. Ware, W. H. McDonagh. Hon. Directors: C. T. Ware and E. K. Hampson. All correspondence regarding the sales' list, etc., should be addressed to the Secretary, Chas. Gainer, Welland, R. R. 1, who was instructed to issue a monthly list of the cattle that were for sale.

Some Choice Shorthorns.

"Shorthorn breeders in need of a good, young bull or heifer should look up those offered by the Nicholson's of Park Hill, at the London sale of March 28. Messrs. Nicholson have topped the London sale twice with bulls and we feel safe in saying the present offering far exceeds any previous contribution. The bulls and two of the heifers are sired by Best Boy, a bull with a reputation as a sire. Corsican Boy is a roan Campbell Clementina and a thick-fleshed bull, very straight and smooth; with his breeding he should go to head a good herd. Trusty Shield a dark red, dam Princess Sunbeam by the champion bull, Prince Sunbeam, is a low-down, sappy bull with lots of character. Any one in need of a stock bull should not overlook him. Original is a beautiful roan, one of the real good ones, very low and thick with a wonderful coat of hair and a splendid top. He is a well-bred Nonpareil and we think one of the best prospects for a sire we have bred.

Among the females we might mention a couple. Clementina 15th is a fine heifer, promising to make a good cow, and she should be valuable, as the family is one of the oldest and most reliable of the Campbell tribes. She is safe in-calf to the service of Browndale Winner, recently purchased to assist Best Boy. Another very attractive heifer will be found in Nonpareil Countess 17th, a roan, one year in April. Her breeding is the best and she has the quality to back it up. She is a little too thin to bring her value, but should be a bargain at any price."

KEITH'S

THE FARMERS SEEDSMAN SEEDS FIFTY-ONE YEARS SERVICE

1866 1917

THE WISE FARMER should not delay ordering his seeds for spring planting—the supply is limited this year, and the demand is very heavy.

SEND IN YOUR ORDER EARLY

We pay railway freight on all orders of \$25 or more, in Ontario and Quebec

SEED CORN					
Ontario Grown.	Rack Cured in Crates. Per Bushel	Crib Cured in Bags Bushel	Govt. Standard No. 1 Red Clover.....	\$14.00 to \$14.50	
Wisconsin No. 7.....	\$3.15	\$2.50	No. 2 Red Clover.....	12.50	
Golden Glow.....	3.15	2.50	No. 1 Alsike.....	\$14.00 to 15.00	
Bailey.....	3.15	2.50	No. 2 or 3 (No. 1 for purity).....	\$13.00 to 14.00	
White Cap.....	3.15	2.50	No. 1 Timothy.....	5.50	
Longfellow.....	3.25	3.00	No. 2 (Extra No. 1 purity).....	\$4.25 to 4.50	
N. Dakota.....	3.25	2.75	Alfalfa—		
Compton's.....	3.25	3.00	Montana Grown No. 1.....	15.00	
Rack cured in bags at 15c. per bush. less than in crates.			Ont. Variegated No. 2 (almost No. 1).....	\$23.00 to 25.00	
O. A. C. No. 3 Oats.....	2.00		Lyman's Grimm.....	80c. lb.	
O. A. C. No. 72 Oats.....	1.35		North-West Grimm.....	75c. lb.	
Banner Oats, registered (in sealed bags of 2 3/4 bus.)	1.50		O. A. C. No. 21 Barley.....	\$1.80	
Banner Oats, unregistered.....	1.20		Marquis Spring Wheat.....	2.50	
Yellow Russian Oats.....	1.30		Goose Wheat.....	2.50	
Amber Sugar Cane.....	7c. lb.		Early Britain Peas.....	3.00	
White Intermediate Carrot.....	60c. lb.		Rape (Dwarf Essex).....	11c. lb.	

MANGELS: Keith's Prizetaker, Danish Sludstrup, Yellow Leviathan, Yellow Intermediate, Giant half Sugar and Mammoth Long Red in lb. pkts., 25c.; if 5 lbs. or more of one variety, 23c.

We are buyers of Alfalfa, Red Clover, Sweet Clover, Timothy and Seed Grain. Send samples. We are especially in need of Rye buckwheat, Spring Rye, Emmer, O. A. C. No. 72 Oats, and Black Oats.

Send for our 1917 Catalogue. It is Free.

GEO. KEITH & SONS SEEDS **124 KING ST. E. TORONTO**

Ladies!

How to Help Your Church

RAISING FUNDS for country churches is always more or less of a problem.

We have a method whereby our subscribers can not only build a considerable fund with ease, but will benefit everyone who assists in raising the money.

Write us for full information to-day.

Raise Red Cross and other Funds this way!

A few whole-souled, energetic ladies can do wonders in raising funds by this method. The Farmer's Advocate and Home Magazine will contribute to the success of your efforts.

Let us give you all particulars. Just use the coupon.

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DATE.....

Fund Dept., THE FARMER'S ADVOCATE AND HOME MAGAZINE, London, Ont.

Please send me particulars of your method of fund-raising. I am interested in raising funds for..... and can get..... other ladies to assist me.

(State purpose of fund) (State number)

NAME.....
(State whether Miss or Mrs.)

ADDRESS..... R. R. No.....

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**What Sort of Man
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Boy Going to Be?**

REMEMBER the days when youth spread out for you the accomplishments of life, how often you wished you could play the piano. Don't let YOUR boy only WISH. Let your foresight enable him to reach into the deep stores of life and bring forth more of the warmth of heart that music gives to all. Now, while he is young, alert and quick to learn new things, is the time to commence his enjoyment of music. The pure, enduring tone of the

Williams Piano
New Scale
ENDORSED BY GREAT MUSICIANS

is your assurance that his ears will acquire a correct foundation and appreciation of music. In homes everywhere throughout the country little ears are being guided in the mastery of good music through the perfect, lasting tone that distinguishes Williams Pianos.

A post card mailed today will bring you absolutely FREE a beautiful booklet showing the latest designs in Williams Pianos. Write now!



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Gossip.

The "Boys' Live Stock Feeding Contest" inaugurated at the last International Live Stock Exposition, Chicago, proved very popular and aroused so much interest among the boys, that it is to be renewed at the 1917 Show, with some minor changes. With a view to enlarging the scope of the contest, and to make eligible entrants in various other state contests, the feeding period has been moved back to April 1st instead of August 1st as formerly, and the following general rules cover the 1917 contest:

1. Contestants: Any boy or girl over 10 and under 19 years of age January 1, 1917.
2. Entries close April 1, 1917. Sometime between April 1st and April 30th the calf will be weighed and then accurate record of feeding will be kept.
3. Pure-breds, grade or cross-bred steers, spayed or martin heifers, dropped since January 1, 1916.

The following prizes are offered: 1st prize, \$50.00; 2nd prize, \$40.00; 3rd prize, \$30.00; 4th prize, \$20.00 5th prize, \$10.00.

Entry cards and other information concerning the contest may be had upon application at this office.

Robt. McEwen, of Byron, Ont., writes: The enquiry for Angus cattle continues brisk, and since the New Year the following sales have been made: Mr. Hockstein got 4 strong, low-down, blocky young bulls; L. Goodreau, a beautiful quality Pride two-year-old and 2 two-year-old, in-calf heifers; Mr. A. Mongeon, a yearling bull of show calibre; Joseph Asselin, 2 nice, straight bull calves; Peter Hensen, a very smooth, three-year-old bull, and Messrs. Connor & Hutchinson, 4 choice young heifers. The above all went to Saskatchewan and Alberta. Channon & Son, Oakwood, Ont., bought a high-class stock bull in the American-bred Kinnaird Lad, the sire of the first-prize calf herd at the Western Fair, London, in 1916, and 2 prize-winning heifers. Messrs. Channon & Son will be heard from this fall at the shows.

In Southdowns a carload of rams has been sold to go to United States, and many orders for stock rams and show sheep have been booked.

At the Madison Square Garden, New York dog show, Collies were one of the features, and my Wishaw Queen won everything she could compete for, 5 firsts, championship and 4 specials, including special for the best Collie of the show.

"The Hawthorns," Peterborough, Ont.

While in the vicinity of Peterboro recently our representative called at the 150-acre farm of Allan B. Mann, known to nearly every man, woman and child throughout the country as "The Hawthorns". Its great productiveness, and all round neat appearance has, of course, been the chief feature that has made it stand out so prominently, but the fame it has attained outside the county has been chiefly through the splendid animals that have gone out year after year from the Hawthorn herds and flocks. Shorthorn cattle, Leicester sheep and Yorkshire swine have for years played a most important part in making the farm productive as well as the owner prosperous and at present, as in the past, each of these departments is quite up to the same high standard. As many of our readers are already familiar with the breeding of Mr. Mann's stock it will be needless for us to go very far into details. The Leicesters are headed by a Douglas-bred ram; the Yorkshires by a Brethour-bred boar, while the Shorthorn sire in service is the noted sire and show bull, Royal Choice, of Duchess of Gloster breeding by Royal Chief. The present offering in Shorthorns is chiefly young bulls, 6, 8 and 10 months old, and one two-year-old bull of strong dairy breeding that has been also used to some extent in this herd. It might also be of interest to mention that nearly all of the horses kept on the farm are registered Clydesdales. The mares are all by imported sires, and the stallion that is in the stud at present is a thick, good quality and well-moving four-year-old son of Golden Gleam (imp.). There are some choice yearlings in the stables by him, and these as well as their sire are for sale, as the management is gradually drifting from the horses to give more attention to the faster growing herd of Short-horns.

Of course, you can buy cheaper teas, but

"SALADA"

is undoubtedly the most economical and what appears to be 'cheap' in price will prove to be extravagant in use. The fresh young leaves of "Salada", will yield you generous value for your money.

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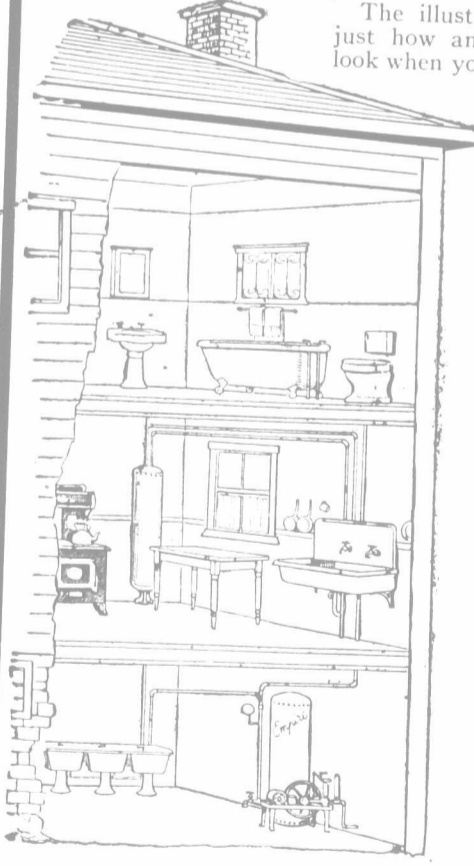
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For Sale

Sharples Mechanical Milking Machine, two units, just used two years, in A.1. running condition. A bargain. Apply: Box 5, Farmer's Advocate, London, Ont.

Gossip.

Manor Farm Bulls in Demand.

Chas. Haviland, Waterford, Ont., recently visited Manor Farm, the property of Gordon S. Gooderham, Clarkson, Ont., in search of a well-bred bull calf. He selected a son of the senior herd sire, King Segis Pontiac Posch. The dam of this calf is Nicolo Pontiac Pauline, which has a seven-day record of 25.75 lbs. of butter as a three-year-old. She is sired by Pontiac Korndyke, with 135 A. R. O. daughters, 11 over 30 lbs. Another recent sale was made to Wallace B. Spafford, Sydenham, Ont. He also took a young son of "King". This calf's dam, Manor P. H. Canary, made, as a three year old, 17.71 lbs. of butter in seven days. She is sired by Prince Hengerveld of the Pontiacs, which is a son of the renowned King of the Pontiacs.

A Holstein Sale in the Home District of Champions.


The Belleville District Holstein Breeders' Club extend the invitation to all to attend their sale at Belleville, on April 4. This is the home of May Echo Sylvia and many 100-lb. cows. The whole District is famous for such breeding and now the opportunity is presented to acquire some of this blood. The sale will include sons of King Segis Alcartra Spofford, a son of the \$50,000 bull, and they will be from high-record cows. Surely this event cannot be overlooked. See the advertisement in this issue and write to the Secretary, Manager or President for a catalogue, and detailed information. The gentlemen in charge of the forthcoming sale will be glad to see you present whether you bid or not.

Dairy Shorthorns and English Black Figs.

It is doubtful if there is any other pure breed of cattle that are finding more ready sale throughout Canada to-day than the Dairy Shorthorn. In the past few years the progress of this particular breed has been most marked, and it is also doubtful if there is a breeder or importer in Canada who deserves more credit for the advancement of this great dual-purpose cow than Frank Cockshutt of Brantford, Ont. His numerous importations during the past five years have not only supplied Canada with a number of high-producing cows, selected from some of the most noted dairy herds in England, but have also included some of the highest priced dairy Shorthorns sires that have ever come across the water. The Rosebud-bred bull, Director, from one of England's best producing cows by the Bates-bred bull, Conjuror, is one of the most noted of these. He went to the Hon. Ducan Marshall, for the Alberta Department of Agriculture, while Lyon Duke, another young sire, got by Anchorite and out of a 7,437-lb. two-year-old daughter of Conjuror went to the Dominion Government for the Experimental Farm at Brandon. It was Mr. Cockshutt's intention to keep one of these sires for service in his own herd, but after disposing of them, he imported the young sire, Thanet Marquis, to head his own herd. He is got by Kingstrop Marquis, one of England's most noted dairy sires, and on the dam's side is a brother to the noted 10,000-lb. heifer, Red Tulip. There are several of the imported cows that are calving now to Director, and they will all be bred to the newly imported sire. There are several bulls among the calves referred to, by Director, and as all are from the imported cows, they will no doubt be picked up quickly. Any of our readers who might be interested in these should get particulars early. In closing we would like to mention that during the past summer Mr. Cockshutt also imported a number of sows and one boar, known in England as the large English Blacks. These are an exceptionally popular hog throughout the British Isles, being considerably thicker than our bacon types, and much favored in England for their great length. Two of the sows were almost due to farrow at the time of our visit and these litters will be the first offering Mr. Cockshutt will have for sale. Fuller particulars regarding these as well as the Shorthorns will gladly be furnished by Mr. Cockshutt at all times.

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It is a very perfect substitute for new milk, and calves thrive rapidly on it. Simply mix our Calf Meal into a gruel, according to directions on the tag, and feed when slightly warm.

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To fence a county 36 miles square, with roads one mile apart, divided into fields averaging 10 acres in size, takes over 23,000 miles of fencing, equal to about 35,000 tons, over 2,900 carloads. When you consider there are hundreds of counties in Canada, the extent of the possible fence business can be seen.

To take care of this immense business we need help, and we welcome any competitors supplying a good fence. The only kind of competitor we object to—and the farmer should object to him as strongly as we do—is the manufacturer who seeks to gain an unfair advantage by putting out cheaply-made fence from low-grade material. Such a manufacturer brings the whole fence business into disrepute and gives the buyer something infinitely less than he expects for his money.

We advise fence buyers to exercise unusual care in selecting fence this year. Be sure the fence you get is the fence you expect to get.

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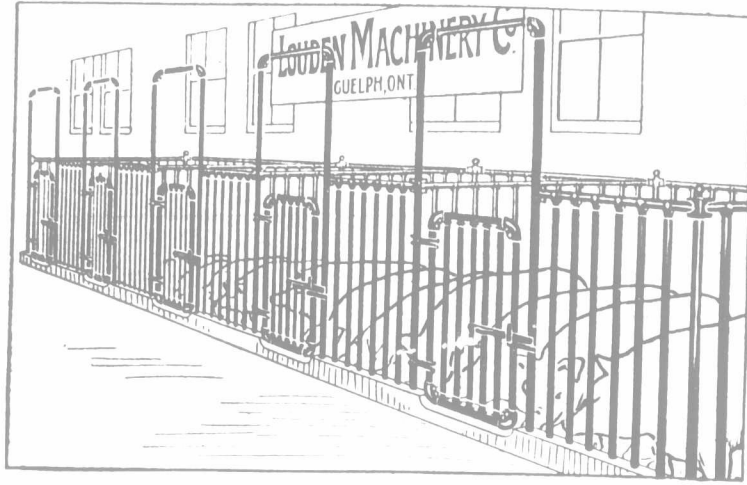
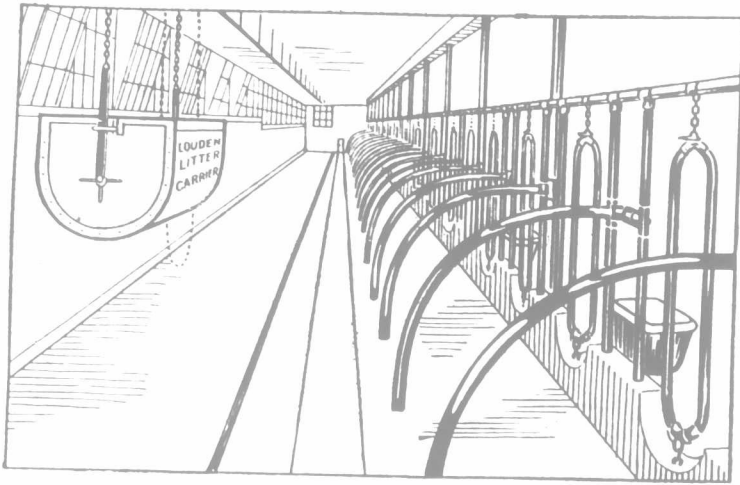
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By breeding your best cow to King Segis Alcartra Calamity, the \$2,000 bull. Mr. Stock paid us \$40 for the service of Baroness Madoline, and sold the offspring for \$1,000. Better get in touch with "King" and make some easy money.

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What it Costs and How it Pays

THE LOUDEN Sanitary Steel Stable Equipment costs no more — frequently less — than equipment made from lumber.

PAYS, because it is easily installed, because it is permanent, and because your cows will be cleaner, more comfortable, and easier to care for.

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Better your stable conditions, lessen your labour, save your time, and benefit your cows. A stable is incomplete unless equipped the Louden way. Write to-day for catalogue and copy of our Plan Book.

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We are paying for Furs, Silver Grey and Black Foxes, as high as \$2000.00. For Red Foxes, up to \$2000.00 each. We want Furs, all kinds of Foxes, Silver Grey, Black, Blue, and Cross Foxes. We are looking for Lynx, up to \$2000 each, Dark Marten, up to \$2000. We want Bear, Beaver, Skunk, Rat, and all kinds of Furs. **Self Direct To Us.** We export and supply manufacturers. The Old Square Deal Home Business for 50 years. A 100% Profit. About us. Blue Trappers Guide Free.

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Please mention Farmer's Advocate

Gossip.

Holsteins At Highland Lake Farms.

To men born and reared in the country, no matter how successful they may become in any business or profession, almost 100 per cent. seem to have a tendency to develop, at some time or other, the get-back-to-the-land fever which often becomes so irresistible that sooner or later they usually give in and finally migrate back to the farm and nature. Often, however, too many having followed other walks in life for a living seem to farm, as Peter McArthur phrases it, "only to amuse their neighbors," but this cannot be said of R. W. E. Burnaby of Highland Lake Farms, Jefferson, Ont. His 150-acre farm combined with 100 head of pure-bred Holsteins must prove a paying commercial proposition, and thanks to the Holsteins it is now running on this basis. The milk sheets alone, showing 50, 60 and 75 lbs. a-day cows, as seen by a representative of this paper recently, were sufficient proof that there is always a balance on the right side of Mr. Burnaby's ledger. Aside from this, however, there is a long list of 19 young bulls that have gone out since December 1, 1916, to head various good herds throughout the province, and it seems that the returns from these without the dairy products should pay very good interest on even a much larger investment. In many cases these young bulls were sired by the young sire, King Segis Pontiac Canada which, until recently, has been the chief sire in service. He is by King Pontiac Artis Canada, a 31.71-lb.-bred son of King of the Pontiac's and has more 20-lb. two-year-old daughters at five years of age than any other sire of the breed. While his three-year-old daughters run up as high as 33.13 lbs. King Segis Pontiac Canada has wonderful lines of breeding, but in selecting as the future sire, Avondale Pontiac Echo, a son of the world's champion, May Echo Sylvia, Mr. Burnaby is going still higher in obtaining the strongest that can be had in production. Avondale Pontiac Echo, individually is of splendid type and almost a ton weight, and is one of only two 41 lb.-bred sires in Canada today. He is sired by King Pontiac

Artis Canada, (mentioned above), while his dam, May Echo Sylvia, holds the world's record for milk production for seven, thirty, sixty and ninety days, and the Canadian butter record for seven days. We might add that this great sire is at Highland Lake Farms only under lease and for the express purpose of breeding to the majority of the 50 daughters that Mr. Burnaby has of a 33.31-lb.-bred son of King Segis, a brother to the sire of Segis Fayne Johanna, the world's record mature cow, 50.68 lbs., also the world's record senior four-year-old, 46.84 lbs., and the world's junior four-year-old, 40.32 lbs. These are an exceptionally fine lot of heifers, the oldest of which are only two years of age and should in another year bring many new laurels to the herd in the way of excellent records. As to their offspring, sired by Avondale Pontiac Echo, their future is already assured. Speaking of the more mature cows, these are granddaughters of such noted sires as King of the Pontiacs, King Segis Pontiac Alcartra, Pontiac Korndyke and King Walker. With few exceptions they are all from tested dams and have records themselves up as high as 26 lbs. of butter in 7 days. An exceptionally promising cow, Simcoe Mercedes Queen, which has now only a 22.37 lb., four-year-old record has just dropped a nice heifer calf, by King Segis Pontiac Canada, and she has every indication of being Highland Lake's first 30-lb. cow, before this appears in print.

Fifty Head of Pure-bred Ayrshires

The members of the Southern Counties Ayrshire Breeders' Club believe the sale they have announced for April 5, at Woodstock, will be the best they have ever held. Canadian and world champion Ayrshire cows have come out of this District, and the breeders have just as good or better stock now than they ever had. The event on April 5 will afford a splendid opportunity to purchase females or choice young bulls. The champion Ayrshire bull at London last fall will be included in the latter offering. John McKee, Norwich, Ont., is Secretary and sales manager. See the advertisement and write Mr. McKee for a catalogue and full particulars.

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As we anticipated, Gasoline and Coal Oil has advanced one cent per gallon during the past week. The oil market is very strong.

Our price lists on Implements, Groceries, Seeds, Potatoes, etc., will interest you.

We can handle your Butter and Eggs at best market prices.

Why don't you purchase a copy of "The Farmer and the Interests"? We are sure you would enjoy reading it. We have these booklets for sale at sixty cents each, delivered in Ontario.

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Questions and Answers. Miscellaneous.

Trap nests.

I purpose going into the poultry business and would like some information regarding making trap-nests. M. G.

Ans.—Trap-nests are discussed and two types illustrated in the poultry department of this issue.

Registering Sheep.

How many crosses are required for sheep to be eligible for registration? What does it cost to have a lamb registered? J. S.

Ans.—There is no system of grading up sheep for registration. In order to record lambs they must be the progeny of registered parents. Regarding the cost of registering sheep, write John W. Brant, Accountant, National Live Stock Records Ottawa, regarding your particular breed.

Abortion.

I have a 13-year-old mare. She had a foal 1914 and another 1915. She reared both of them without any trouble and worked nearly every day. I bred her June 3rd, but she came in heat after, so I bred her again June 20, 1916. The result was that she foaled February 18, (eight months) and had twins; both dead, but one seemed to be developed a month or so more than the other; besides being much larger. What was the cause of this? The mare was not hurt to my knowledge. Is a mare carrying twins subject to abortion? Should this mare be bred again? When? Is she more likely to mis-carry in future? Should I breed to the same horse these twins are from? B. J. P.

Ans.—It is difficult to state definitely the cause. It may have been due to an accident or it might be contagious. These things sometimes happen without any apparent cause. As a rule a mare carrying twins is no more liable to abort than one carrying a single colt. She might be bred again this spring with a degree of safety, although if it was contagious it would be advisable to delay breeding until fall or next spring. There is greater danger of mis-cariage in the future and every care should be taken of the mare. If the horse is satisfactory there is no reason why you shouldn't use him again.

Corn for Silage.

1. How much corn for silage should be sown to the acre, and how far apart should the rows be?

2. Will corn in drills produce more silage to the acre than if sown in hills?

3. Which is considered the best method of seeding?

4. Has the corn planter any decided advantage over the ordinary seeder?

5. I have built a stable for twenty-four milk cows and have drained it to a cess-pit to hold the liquid manure. What is the proper or best means of taking the liquid manure out of the cess-pit and putting it on the land? At what season of the year and on what crops would you advise putting it? K. R.

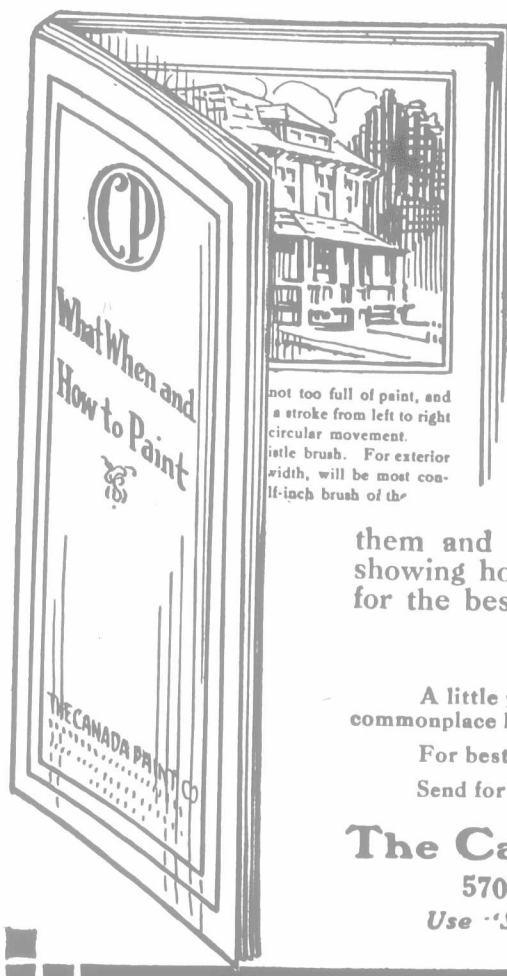
Ans.—1. It depends on how the corn is planted. Some plant one peck to the acre and some less than that in hills, depending on the germination of the corn. When planting in drills, from 20 to 30 pounds per acre is the common seeding. Thirty-six or 42 inches apart is a fair distance to have the rows.

2. It is generally conceded that it will. As a general rule the seeding is heavier in drills than in hills.

3. For producing seed corn the hill method is usually followed, and is very commonly followed when corn is grown for silage purposes. It affords a little better means of cultivation, as the horse cultivator can be used to cultivate both ways. Sowing in drills gives good results, but in order to keep the field clean a little hand hoeing may be necessary.

4. The corn planter can be used satisfactorily for either planting or sowing the corn, although the ordinary seed drill will sow the corn quite satisfactorily.

5. The proper method would be to have a large tank equipped with a sprinkler. The liquid would be pumped into the tank and then sprinkled over the land. Almost any of the crops would be benefited by it. No doubt the pit will have to be emptied during the winter, and the liquid could be sprinkled on land for spring crops or on hay land. It may be applied to root land in early summer, or to the land or crop most in need of being fertilized.



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This free book tells you in clear, understandable English just What, When and How to Paint. It will inform you on every conceivable detail concerning paint and painting, inside the house and out.

This book gives information everyone needs. It suggests how to decorate the bedrooms, living room, dining room, library and den, also the wood finishes to harmonize with them and the furnishings. It solves the floor problem by showing how to select and apply finishes to all kinds of floors for the best result.

Contains complete Color Schemes for Outside and Inside Painting.

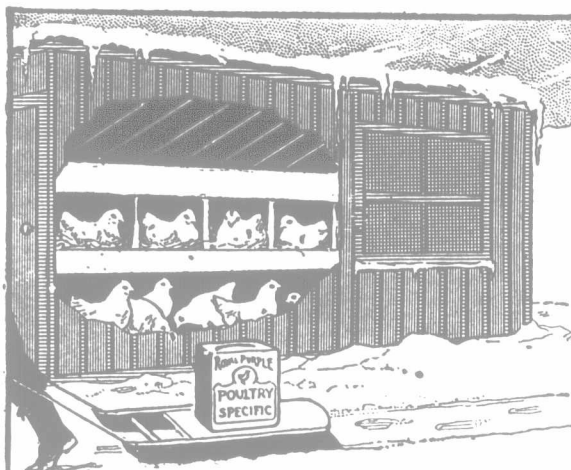
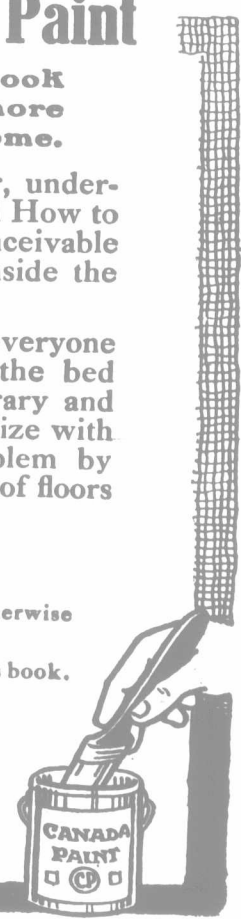
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Under the most severe weather conditions, you will get plenty of eggs if your hens are properly housed and fed Royal Purple Poultry Specific as directed.

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

Royal Purple Poultry Specific

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

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

Secure these products from our dealer in your town.

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

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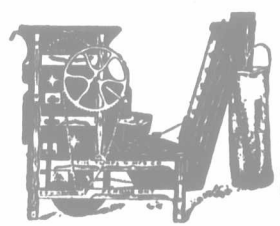
The farmer must consider two points now—Price and haulage.

Bricks are increasing in price, owing to the cost of fuel, and the weather controls haulage.

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Free samples sent on request.

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The best and latest mill for Cleaning and Grading all kinds of Seed and Grain.

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Vegetable Plants

Asparagus, Conover's Colossal, two years old, 100, 60c.; 1,000, \$5.00; Early Cabbage, Jersey Wakefield, 100, 40c.; 1,000, \$3.50.

Other vegetable plants in season. HEROLD'S FARMS, Beamsville, Ont. (Niagara District)

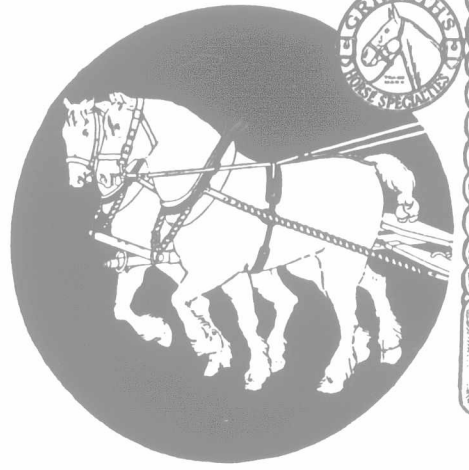
Grow Strawberries

Write at once for our Free Catalogue of choice Strawberry Plants. Dunlaps, Williams, Warfield, \$3.50. Sample, Arnout, and Buster, \$4.00 a thousand. Our season is three weeks later than Ontario. Buy hardy Nova Scotia plants and set while still dormant. Our stock is first class, well rooted, and true to name. Try us.

CYRUS & MANNING ELLS, Port Williams, Nova Scotia

REES & SHRUBS BROWN BROTHERS Co. BROWNS NURSERIES, ONT.

Griffith Team Outfit



GIVES MORE SERVICE COSTS LESS Work harness has to stand mighty rough usage. Only an exceptionally strong harness can give lengthy service under such conditions. A good quality all-leather harness comes high on account of the scarcity of leather. That is why Griffith's Team Outfit is such a big help to farmers. It will stand a tremendous amount of wear and costs much less than leather. Outfit consisting of Giant Rope Traces, Giant Yoke Ropes, hames, hame straps, plow pads, belly bands and billets, costs \$13.00 (\$14.00 west of Fort William). Griffith Giant Rope Traces only, set of four with heel chains, \$4.50 (\$5.00 west of Fort William). Griffith Giant Yoke Ropes, per pair with snaps and slides, \$1.00 (\$1.25 west of Fort William). If your dealer can't supply you, order direct. Write for booklet. G. L. GRIFFITH & SON 68 Waterloo St., Stratford, Ont.

DANGEROUS

as well as painful

Backache Neuralgia
Lumbago Rheumatism
Stiff Joints Sprains

Combault's Caustic Balsam
WILL RELIEVE YOU.

It is penetrating, soothing and healing and for all
Sore or Wounds, Felons, Exterior Cancers, Burns,
Boils, Carbuncles and all Swellings where an outward
application is required. CAUSTIC BALSAM HAS NO
EQUAL. Removes the soreness—strengthens the muscles.
Price \$1.50 per bottle. Sold by druggists or sent
by express prepaid. Write for Booklet L.
The LAWRENCE-WILLIAMS COMPANY, Toronto, Can.

Good For Man And Beast



Kendall's Spavin Cure has now been refined for human use. Its penetrating power quickly relieves swellings, sprains, bruises, and all forms of lameness. It is just what you need around the house. Write for many letters from users to prove its effectiveness.

T. J. Smith, Spencerville, Ont., says—
"Have used Kendall's for many years in my stable and house and it never has failed us yet."

Kendall's Spavin Cure

For Horses—And Refined for Man.

—has been used by horse-men, veterinarians, and farmers for over 35 years. Its worth has been proved, for spavin, splint, curb, ringbone and the many other hurts that come to horses.

112



ADRIEL, Ind., 1915.
"Kendall's Spavin Cure is about the best all-round liniment for both man and beast that I know."
THE HUDSON'S BAY COMPANY.
Get Kendall's Spavin Cure at any druggist's.
For horses \$1. bottle—6 for \$5.
Refined for man 50c.—6 for \$2.50.
Treatise on the Horse free from druggist or write to
Dr. B. J. KENDALL CO.
Enosburg Falls, Vt. U.S.A.

BE SURE AND ASK FOR THE
Maxwell

Line of WASHERS, CHURNS, BUTTER-WORKERS, FOOD CUTTERS, GAS ENGINES, etc. Write for Catalogue.
MAXWELLS LIMITED, St. Mary's, Ont.

Clydesdale Stallions FOR SALE

Shawano King (imp.) (15708) Brown, with star and white hind feet; foaled, May 31, 1913.
Baron Knight (14176), Chestnut, stripe, legs white; foaled June 29th, 1909. Imported sire and dam.
Both inspected and enrolled, form one.

J. SOCKETT & SONS,
Rockwood, Ont., R. R. No. 5

MORE HORSE-POWER if your teams are equipped with



These pads prevent Sore Shoulders and cure Gall Sores. Your dealer will supply you, or write BURLINGTON BLANKET CO., LTD., 793 KING STREET WEST, TORONTO, CANADA.

DR. BELL'S Veterinary Medical WONDER. 10,000 \$1.00 bottles FREE to horsemen who give the Wonder a trial. Guaranteed for Colic, Inflammation of Lungs, Bowels, Kidneys, Fevers, and Distempers, etc. Send 25 cents for mailing, packing, etc. Agents wanted. Write address plainly DR. BELL VS. KINGSTON ONT.

Clydesdales & Shorthorns

We have a number of choice female Clydesdales, also 2 choice, pure-bred Shorthorn bulls, 14 months old—a red and a roan, from heavy milking dams.
J. B. Calder, R. R. 3, Glanford Str., Ont.

Questions and Answers. Miscellaneous.

Lime for Corn Ground—Worms in Horses.

1. Part of my corn ground for this year is heavy loam and I believe the soil is sour. What would you advise using to correct this? I was considering applying lime. Would this benefit or injure this year's corn crop? If lime is advisable, what quantity should be applied per acre, and what is best method of applying it? In what form is lime usually applied to correct acidity of the soil? What is the usual price per ton?

2. Describe plan of hen-house suitable for wintering 60 hens, birds to roost in open shed in summer. Shed is to form part of building.

3. What is meant by the "hopper" system of feeding poultry?

4. What is a good remedy for small white worms in colts and horses?

M. B.

Ans.—1. An application of ground limestone is one of the best means of correcting the acidity of the soil. If the land is at all sour there is little doubt but this year's corn crop will be benefited by an application of from one to two tons of the ground limestone. This may be applied any time previous to planting the corn. Some spread it direct from the sleigh or wagon in the winter-time, others put a layer on top of a spreader load of manure and apply it in this way. Others use the regular fertilizer drill. It is advisable to spread it on the ground and cultivate it in, as the roots of the corn plants are rather extensive and practically meet between the rows. The agricultural or ground limestone is the form in which it is usually applied. If burnt lime is used, smaller quantities may do the work. The price varies, but ranges around \$4.00 per ton.

2. There are several types of hen-houses which give very good satisfaction. A pen 15 by 16 feet would give sufficient space for the number of birds mentioned. The type of house described in the February 1 issue gives very good satisfaction. One section of the house would accommodate your flock, and the method of construction is there given in detail. This does not provide an open shed, but we cannot see the necessity of it as the window and the cotton may be left open in the summer-time, and it is necessary to leave the cotton open most days in the winter. The low-down, open-front houses also prove very satisfactory. These pens are about 4½ feet high at the back, 7 feet at the centre, and 3 feet at the front. The front is entirely open. A door is placed in the east end and a large window in the west end. Birds have come through severe weather in pens of this style without being frosted in any way. The air while cold is dry, and the birds become used to the cold if placed in the pen in early fall. Building a house about 6 feet high and then putting on a gable roof makes a very satisfactory type. The gable could be filled with straw which would absorb dampness. The front of the pen could be one-third closed, one-third cotton and the remainder glass. Pens built as described furnish the essentials of good poultry houses. A scratching shed could be attached to any of the houses mentioned, but the dimensions given furnish what is generally considered sufficient floor space.

3. The grain or mash is put in a hopper and the birds are allowed to feed at will. These hoppers are made wider at the top than at the bottom, with a flat trough projecting several inches, or as far as the top of the hopper. During the winter-time it is a common practice to fill these hoppers with rolled oats or a mash mixture. In the summer-time the hopper is commonly used where a large number of chicks are raised. They may be made large enough to hold a bag or two of grain. While the birds may feed when they feel like it, they seldom gorge themselves. Under this system there is little danger of them missing their feed.

4. For mature horses take 1½ ounces each of sulphate of iron, sulphate of copper and tartar emetic and one ounce of calomel. Mix and make into 12 powders. Give a powder every night and morning in damp feed, or mixed in a little water as a drench. Eight hours after giving the last powder, administer a purgative of 8 drams aloes and 2 drams ginger. Feed bran only until purgation commences and do not work the horse until the bowels

Secure More Pails of Milk From Your Herd

Royal Purple will increase the flow of milk from 3 to 5 lbs. a day if used according to directions. Mr. Norman C. Charlton, Scott, Sask., states:

"I am from Ontario and fed your Royal Purple Stock Specific when in Brownsville. My cows made the largest average and tested 5 pounds over average at C. M. P., Brownsville. I believe you make the best conditioner on the market."

Royal Purple Stock Specific

The great farm animal conditioner and fattener is used in almost every progressive stock-raiser's stable in Canada. Good for all stock in a run-down condition. Can be used occasionally or continually without showing bad after-effects. Royal Purple Stock Specific is purely a digester and blood purifier. It aids digestion to such an extent as to produce the very best results and obtain the maximum amount of good from the food eaten. It will enable you to fatten your steers and hogs a month earlier, thereby saving a month's feed and labor.

Mr. Malcolm Gray, of Comoka, states:

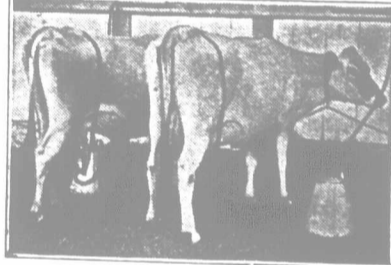
"In regard to the feeding of Royal Purple Stock Specific, I had two lots of hogs. To the first lot I fed Royal Purple Stock Specific, and when I sold them they averaged 196 lbs. each. On the second lot I did not use Royal Purple Stock Specific, and at the same age they averaged only 150 lbs. each. They were both the same breed and one lot had as good a chance as the other. We have also fed Royal Purple Poultry Specific with excellent results."

Royal Purple Stock Specific is put up in 50c. packages and large \$1.50 and \$5.00 tins. Secure our products from our dealer in your town. Write for free booklet on how to treat all common diseases of stock and poultry. Tells how to build hen houses and how to raise calves without milk.

W. A. Jenkins Mfg. Co., Ltd.
London - Canada 36



HINMAN THE UNIVERSAL MILKER



Hinman Economy

With HINMAN MILKERS one man is enabled to do three men's work—and that is making you a lot of money. One horse-power will operate three machines.

Get approximate cost of Hinman outfit and surprise yourself at its low installation cost.

Write for FREE Booklet "H" —'tis interesting.

H. F. BAILEY & SON : GALT, ONT.

Manufacturers under HINMAN Patents

Our Latest Importation of CLYDESDALES

arrived at our barns late in November. A number of them since, have been prominent winners at both Guelph and Ottawa. But we have others (both stallions and mares) that were never out, the majority of the stallions weigh around the ton, and better quality and breeding were never in the stables. Come and see them, we like to show them. Smith & Richardson, Columbus, Ontario

Bell Telephone

HILLSDALE FARM

Farm ¾ miles east of Ottawa

B. ROTHWELL

BREEDER OF HIGH-CLASS CLYDESDALES

Write me for prices on champion mares.

R. R. No. 1, OTTAWA, ONT

ABERDEEN ANGUS

We have a number of young bulls to offer at reasonable and attractive prices. At the recent Canadian National Exhibition, with 15 animals shown, we won 24 prizes, among which was Grand Champion and Gold Medal for best female of the breed. To insure prepotency of the right kind in your next herd bull, buy him from SHROPSHIRE AND SOUTHDOWN SHEEP **LARKIN FARMS** QUEENSTON, ONTARIO
Twenty-minute trolley ride from Niagara Falls.

ROBERT MILLER Pays the Freight on his Shorthorns

I have six Lavender bulls over a year old, two Duchess of Gloster bulls over a year, four other bulls from good families, all have good bone and good feeding qualities, and they are naturally thick-fleshed, but not highly fitted in some cases. They are half reds and half good roans. I have some heifers in calf and some to be bred soon.

You can get the right kind from me at reasonable prices.

ROBERT MILLER,

STOUFFVILLE, ONT.

Escana Farm Shorthorns

FOR SALE—Two imported bulls, proven valuable sires; 12 bulls, 10 to 20 months old, all by imp. sires and from high-class dams; also for sale, 20 heifers and young cows, several with calves at foot, all of very choicest breeding and especially suitable for foundation purposes.

MAIL ORDERS A SPECIALTY. SATISFACTION GUARANTEED.

MITCHELL BROS.,

Jos. McCrudden, Manager. Farm, ¼ mile from Burlington Jct. BURLINGTON P.O., ONT.

regain their normal condition. For a colt take 4 drams each of the drugs mentioned, mix and make into 12 powders. Give a powder night and morning. After the last powder has been taken give one-half pint of raw linseed oil. Feed bran only for 24 hours after giving the purgative.

Questions and Answers.
Miscellaneous.

Bots.

Is there such a thing as bots in a horse's stomach? How can they be gotten rid of? What is the life-history of the bot?

M. J.

Ans.—The grubs or bots develop from the larvae of the bot-fly and are present in greater or less numbers in the stomachs of all horses exposed to the attacks of the fly. They attach themselves to the stomach by their tails. They let go in the spring, burrow in the sand and develop into the bot-fly to bother the horses the following summer. It is only in rare cases that they cause much trouble; that is when they let go in large numbers and form a ball which occludes the passage from the stomach to the intestines. When this happens death soon follows. Their presence can be suspected where recurrent attacks of colic occur without apparent cause. Proof positive is when the bots or grubs are found in the faeces. Treatment consists in mixing 3 ounces each of sulphate of iron, sulphate of copper and tartar emetic, making 24 powders. Give a powder night and morning and follow with a purgative of 8 to 10 drams aloes and 2 drams ginger.

Heifer Losing in Flesh.

I bought a heifer last spring. She is not doing very well and is quite thin in flesh. She is fed good hay and chop. She started going down in flesh last summer, and continued to lose in flesh until she went into the stable. I started feeding her chop but it does not make any improvement on her. Her appetite is not good and her hair has a rough appearance. She was fat and her hair had a slick appearance when I bought her. This heifer was driven about fourteen miles in warm weather and became tired out, so she was left behind until another day. When I received her she appeared all right but her feet were very sore. She seemed all right the next two or three months, then she started going down in flesh. She comes in heat regularly. What is the best treatment. Is it advisable to breed her while I am treating her?

L. N.

Ans.—Evidently the trouble can be traced to the heifer being overheated and tired out last summer. Complications may have set in which her system is unable to shake off. When an animal continues losing flesh, in spite of good care and feed, it is an indication that she may have tuberculosis, although the only way of telling accurately is to have her tuberculin tested. If she does not react then the trouble must be due to some other ailment. Unless she is seriously ill she should flesh up if well fed on legume hay, rolled oats, bran and linseed meal, or some other highly nitrogenous feeds. It is advisable to call in your veterinarian. It is not good practice to breed a heifer that is ailing and very much out of condition.

Veterinary.

Skin Trouble.

Mare is losing her hair. It commenced in a small spot around her head about 10 days ago, now two-thirds of her body is bare. The outer skin keeps peeling off. She has been fed on corn fodder, oat straw and ear corn. What can I do to make the hair grow quickly?

W. A. B.

Ans.—The condition is largely due to the nature of the food. Give her hay for roughage and rolled oats and bran for grain, also a raw turnip, mangel or a couple of carrots daily. Give her a thorough scrubbing with warm soap suds to remove all the scales. Rub until dry after washing, and then dress two or three times daily with 1 part carbolic acid to 35 parts sweet oil. The hair cannot be made grow quickly, but the above will tend to promote its growth.

V.

GREAT SPRING
Sale of Shorthorns

90 HEAD 50 BULLS 40 FEMALES

The strongest lot of Breeding Cattle we have ever offered. At our Semi-Annual Sale, FRASER HOUSE STABLES, King St.

London, Ontario, Wednesday, March 28th, 1917

50 BULLS and 40 FEMALES, Consigned by Leading Breeders.

There are sons and daughters of such noted sires as **Bampton Mandolin (Imp.), Blarney Stone, Newton Friar (Imp.), Senator Lavender, Sea Foam, Regal Sultan, Gold Drop, Clipper King, Archer Sultan, Prince Augusta, Prince of Orange** and others.

The families are: **Mysie, Clipper, Rosewood, Marr Flora, Nonpareil, Marr Emma, Cruickshank Butterfly, Lavender, Secret, Wimple, Bruce Mayflower, Mina, Jilt** and others of equal popularity.

Among the bulls offered are a number of prizewinners at different fall fairs throughout Western Ontario, and every one is guaranteed a breeder. The same holds true with every female consigned; those of breeding age must be sure and regular breeders. "Good Cattle, Good Breeding, Fair Prices and Fair Treatment" has always been our motto.

No matter whether you are in search of high-class herd-bull material, a couple of young heifers, or a few cows heavy in calf, it will pay to attend this sale. Come and see them sold.

The Western Ontario Consignment Sale Company, Limited

FOR CATALOGUES WRITE

HARRY SMITH, Manager, HAY, ONT.

Capt. T. E. Robson, J. W. Laidlaw, Auctioneers

A Choice Offering Shorthorn Bulls—We have several good, thick low-set bulls that are now just ready for service, all reds and roans, and mostly of Booth breeding. We would like to have you see these. **THEY ARE PRICED TO SELL.**

GEO. E. MORDEN & SONS, Halton Co. Bell Phone. Oakville, Ont.

Pleasant Valley Herds—For Sale: Several good young bulls, reds and roans of the very best breeding; also females of all ages; all the leading families represented; 100 head to select from. Inspection invited. Farm 11 miles east of Guelph, C. P. R., 1/2 mile from station.

Geo. Amos & Sons, Moffat, Ont.

BLAIRGOWRIE SHORTHORN OFFERING

Imported and Canadian Bred. More bulls to select from than any herd in Ontario, all of serviceable age; also a large number of females, which are bred right and priced right, all the stock for sale.

JOHN MILLER, ASHBURN, ONTARIO Myrtle Station, C.P.R. and G.T.

Spruce Glen Shorthorns—of such popular strains as Minas, Fames, Miss Ramsdens, Florences, Emilys, etc. Present offering, our stock bull, Ear Derby 2nd, 5 yrs. old, a show bull, hard to beat. Also a few young, thick, mellow fellows, fit for service.

JAMES McPHERSON & SONS, DUNDALK, ONTARIO

ONE 7-MONTHS' ROAN BULL

from a heavy milking dam, and another red bull the same age. These are the dual-purpose kind, and will prove their worth; also females. In Clydesdales, 1 filly rising three years, and 1 stallion colt, one year. Yorkshire pigs, either sex. Everything priced to sell.

ALLAN B. MANN, R. NO. 4, PETERBOROUGH, ONTARIO

ELDERS for BULLS

This herd of about 60 head is one of the most healthy and prolific herds in Canada, and of the good, dual purpose kind. Present offering is 7 bulls, 10 to 18 months of age, at \$125 to \$185. Cows bred or with calf at foot, at \$100 to \$300. All reg'd.

Jno. Elder & Sons, Hensall, Ontario

The Manor Stock Farm SHORTHORNS

Bulls all sold, except the four listed in the London Sale, March 28, a Rosemary, a Wimple, a Mina and a Julia.

John T. Gibson, Denfield, Ont.

BRANT COUNTY SHORTHORN BREEDERS' CLUB

Many of Ontario's leading herds are represented in Brant County. Write now for our Sales List.

GEO. L. TELFER, Secretary, PARIS, ONT. JAS. DOUGLAS, President, CALEDONIA, ONT.

Shorthorns, Shrops., Clydesdales—If you want a good young bull, a promising stallion colt, or a young cow or heifer of Scotch breeding and beef type, having dams eligible or good enough for R.O.P. Come, see, and satisfy yourself and please the owner. Prices reasonable, that they may be sold. Visitors welcome.

Wm. D. Dyer, R. No. 3, Oshawa, Ont. Brooklin, G. T. R. and C. N. R., Myrtle, C. P. R.

Spring Valley Shorthorns

Herd headed by the two great breeding bulls, Newton Ringleader (imp.) 73783, and Nonpareil Ramsden 83422. Can supply a few of either sex.

Kyle Bros., Drumbo, Ont. Phone and telegraph via Agr.

Welland District Shorthorn Breeders' Club

are in a position to supply Shorthorns in any number—from one animal to carload lots. Our herds represent some of the strongest blood in Canada. Get our Sales Lists. Write or phone.

Chas. Gainer, Secretary, Box 607, Welland, Ont. A. E. Howell, President.

IMPORTED SHORTHORNS

Cows and heifers in calf, or with calf at foot. Yearling bulls and bull calves. One of the best importations of the year. You will be surprised when you see them.

Will A. Dryden, Maple Shade Farm, Brooklin, Ont.

You can assure your family a **MONTHLY INCOME FOR LIFE** or assure yourself an income during your old age, by means of an

Imperial Monthly Income Policy

Write for particulars now, and mention The Farmer's Advocate. Address: **Imperial Life Assurance Co. of Canada Head Office: TORONTO**

H. Fraleigh, Forest

**LINSEED MEAL
FLAX SEED
OIL CAKE
COTTON SEED MEAL**
Write for Prices.

Alloway Lodge Stock Farm

Angus—Southdowns—Collies

SPECIAL this month:

CHOICE BULLS

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

MESSRS A. J. HICKMAN & CO., (late Hickman & Scruby,) Court Lodge, Egerton, Kent, England, exporters of

PEDIGREED LIVE STOCK

of all descriptions. Specialty made of draft horses, beef and dairy breeds of cattle, show and field sheep. Illustrated catalogues and testimonials on application. All enquiries answered with pleasure. Now is the time to import. Prospects were never better, and insurance against all war risks can be covered by payment of an extra 1% only.

Aberdeen-Angus. For sale, several choice young bulls, one from imported sire. Present head of herd, Middlebrook Abbot 2nd, first prize in class, Toronto and Ottawa, 1915. Apply A. H. Mansmore, Manager, "Grape Grange" Farm, Chathamburg, Ont. 1 1/2 miles from Thornbury, G. T. R.

BALMEDIE ABERDEEN-ANGUS

Get a high-class Angus bull and breed the champion steers. I have show-ring quality bulls from 10 to 24 months of age; also choice 1 and 3-yr.-old heifers. **T. B. BROADFOOT FERGUS, ONT.**

Beaver Hill Aberdeen-Angus bulls, from 15 to 24 months; cows with calves at foot, and bred again; females all ages. Rose-comb Rhode Island Red cockerels from good winter laying strains, \$2.50 each. Write **ALEX. MCKINNEY, R. R. No. 1, Erin, Ont. L.-D. phone.**

HEREFORD BULLS

by Refiner 35th, ten to sixteen months. Fit to head pure-bred herd. 21 females, 12 bred.

A. Nokes, Manilla, Ont.

Shorthorn Bulls for sale, by Mina Boy 18th sire of first-prize calf at Guelph. Also one imported Clydesdale stallion. **GEO. B. ARMSTRONG, Teeswater, Ontario, Mildmay, G. T. R. Teeswater, C. P. R.**

The **Lankford**
HUMANE HORSE COLLAR

Cures while working
Cure your horse of galls and sore shoulders with the Lankford collar, without the use of medicine—even while he does his heaviest work.

We guarantee a cure when properly fitted. Get the genuine Lankford collar. Made of best white saddle cloth, trimmed in extra heavy leather, stuffed with clean, downy, curled, medicated cotton, will not pack or harden. Also comes in special brown waterproof duck. Fits any shaped neck, always soft and pliable. Absolutely prevents galls, sore shoulders.

Buy a Lankford Now! See your dealer. If he does not have Lankford, send us his name and ask for our literature on the Lankford Guaranteed collar.

Powers Mfg. Co.
Waterloo, Ia.

This trade-mark protects you. Look for it.

GREATER RETURNS

"MAPLE LEAF" OIL CAKE
contains over 35% protein and 33% carbohydrates. As a fattening food, OIL CAKE MEAL stands far ahead, and will make animals ready for market quick and most economical.

Write to-day for our free booklet, "Facts to Feeders"

CANADA LINSEED OIL MILLS LTD
TORONTO AND MONTREAL

Cockshutt Drills

Ensure perfect seeding. Write us for Drill Folder to-day.

Cockshutt Plow Company, Limited
Brantford, Canada

—FOR SALE—
4 Young Shorthorn Bulls
Ages from 9 months to 1 year, all reds, and from dams that are good milkers.—sired by J. T. Gibson's herd-header. Will also sell Jilt's Victor #93844, 5 years old, in prime condition, good handler, active and sure. His progeny commends him. All will be priced right. Come and see, or write.

PETER L. GRAHAM,
Maplehurst Farm, R. R. No. 2, Ilderton, Ont.

GLENFOYLE SHORTHORNS

Seven bulls, big, straight, smooth, fleshy fellows some from cows milking 40 to 60 lbs. a day. Also a few outstanding heifers that are bred. Three young cows. Prices right. Bell phone.

Stewart M. Graham, Lindsay, Ont

Scotch Shorthorns

FOR SALE—1 extra good young bull of breeding age, with best Scotch breeding; also bull calves and females of different ages. Write your wants.

Geo. D. Fletcher, Erin, Ont., R.R. 1
Erin Stn., C.P.R. L.-D. Phone.

MARDELLA SHORTHORNS—Bulls; females,
size, quality, breeding; dual-purpose cattle; over 40 years. The Duke—dam gave 13,599 lbs. milk, 474 lbs. butter-fat—at the head. **THOMAS GRAHAM, PORT PERRY, ONT. R. R. 3.**

Shorthorns We have some young cows with calf at foot or to calve by the Augusta bull, Augustine (imp.) #201804—Also 2 red and 3 roan bulls, smooth and fleshy. We invite inspection. **JOHN SENN & SONS, Caledonia, R. R. 3, Haldimand Co., Ont.**

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

F. MARTINDALE & SON, Caledonia Ont

Shorthorns For Sale—Three good bulls, ten to twelve months, reds and roan, well bred, at reasonable prices. Write, or come and see them.

N. A. McFarlane, No. 2, Dutton, Ont.

BROWNLEE Offers a choice lot of young bulls ranging in ages up to nine months and sired by the Nonpareil bull, Royal Saxon. See these before buying elsewhere. Could also spare a few females. **Douglas Brown, Bright, Ont., R. R. 3, Ayr Station, C. P. R.**

Scotch Shorthorns We are offering five choice young bulls, Roan, Ladys and Killbuck Beautys, sired by Barmpton Sailor, two are fifteen months old; also Yorkshire pigs. **Arch'd McKinnon, R. R. No. 1, Erin, Ont. Hillsburgh or Alton Stn. L.-D. phone.**

Wanted.
Young Ayrshire bulls, age about 1 year, by Farmers' Clubs, for further particulars apply **J. D. CASHMAN, R. R. 1, Kirk's Ferry, Que.**

Questions and Answers.
Miscellaneous.

Ferrets.

What is the right time to first breed a ferret? How many broods will one doe raise in a season? Should the male and female be kept in the same box, all or part of the time? Is there any place where I can obtain literature on the raising of ferrets?

P. L.
Ans.—There is no particular time. The doe raises two litters of from 6 to 8 in a year. Unless the male is kept away from the nest at the time young are born there is a danger of him devouring the young ferrets. All other times the male and female can be kept in the same box. Information on the subject can be found in encyclopedias and in books on wild animals.

Conveniences in the House.

I purpose putting a bath and toilet in my house this summer, but we have no sewer connections. Our land is a deep gravel soil. How could I get the best outlet for toilet? Which are considered the best cesspools or septic tanks? How are they constructed? How far from the well should the tank be? What size sewer pipe should be put in? What is the best way to get water to the bath-room? I have no place for a tank above the toilet.

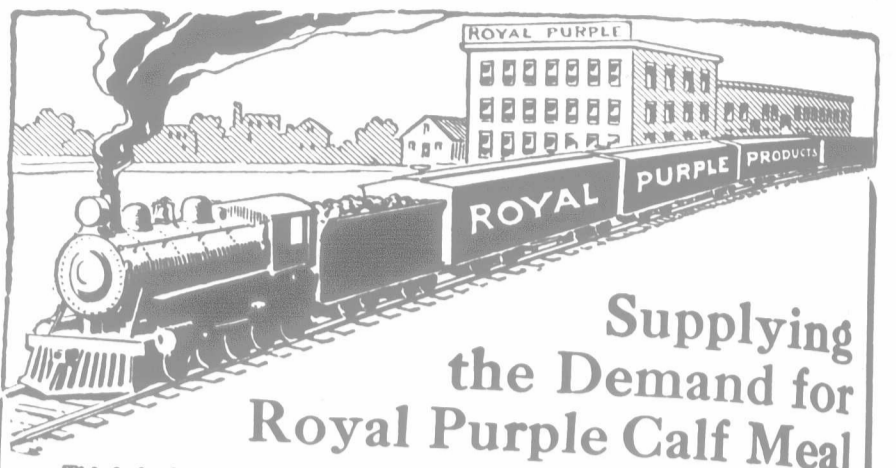
J. E. P.
Ans.—In porous soils a cesspool gives very good satisfaction but should be built a considerable distance from the well. Septic tanks are an efficient and practical means of disposing of sewage. A full description of building the tank and installing the system was given on page 395, March 8 issue. It is necessary to have the water supply higher than the bath-room in order that the water may flow to the bath and toilet. Where there is room in the attic for a tank that is a convenient place to have the water supply. The water tank could be in the barn and the water piped from there to the house. In some sections it is common practice for the water tank to be built outside and elevated sufficiently to give water pressure in any part of the house or barn. The pneumatic water system, whereby the water is pumped by hand or power against air pressure in a metal tank, forces water to all parts of the house. This system may be installed in the cellar.

Director's Rights

Our cheese factory is owned by its maker, who is paid a certain price per lb. for making cheese. Owing to high prices of rennet and supplies last year the board of directors, at their last meeting, voted him an extra \$25.00, thinking they had the approval of the patrons and the right to do so. This board of directors is appointed by the patrons at the annual meeting. The board appoints the salesman from among its members, and finances the factory during the year. Not selling on a cheese-board it is necessary to pay the patrons before all moneys can be collected, and the bank requires that directors give bonds as security. Has this board of directors the authority to make such a grant without calling a meeting of the patrons? Five patrons thought they had not though willing to give their share of this amount had they been consulted first. Were they acting within their rights?

H. H. W.
Ans.—It will depend somewhat on the constitution and by-laws governing the running of the business. As the board of directors were empowered by the annual meeting to choose their salesman and conduct the business of the year, we would consider that they should be justified in increasing the maker's salary, or voting a sum of money to meet the high cost of rennet and other supplies. Unless the constitution specifically states that no moneys shall be granted except by vote of the patrons at the annual meeting, the directors were within their rights.

Southern Counties Ayrshire Sale.
The Southern Counties Ayrshire Breeders' Club are preparing for a spring sale of about 50 head, to be held at Woodstock on April 5. On account of the great scarcity of farm help several of the club members find it necessary to reduce their stock, and in consequence are placing an extra choice lot of mature females in this sale. A few choice young bulls, including "Snow King," champion at London last fall, are included. Write the Secretary, John McKee, Norwich, Ont., and get a catalogue with full details of the sale.



Supplying the Demand for Royal Purple Calf Meal

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

Calves Gain Rapidly Without Milk

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

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

Note—The above Mr. Croxall keeps a large herd of pure-bred Holstein cattle, and is an excellent authority on Calf Foods.
Royal Purple Calf Meal is equally good for young colts, lambs and young pigs. Put up in 25-lb., 50-lb. and 100-lb. bags. Secure it from our dealer in your town.

W. A. Jenkins Mfg. Co., Ltd., London, Can.
35

Usbridge, Aug. 5th
our druglist, Mr. T. C. Nicholls, of Usbridge, and can speak of this meal in ever tried. I never saw a calf gain more rapidly and thrive better than mine did while using your "Royal Purple" Calf Meal. I can cheerfully recommend it to all our stockmen who wish to raise large, healthy calves.—Stanley W. Croxall.

FREE BOOK
Send for our 86-page book which describes the common diseases of stock and poultry; also methods of feeding and our many products. Get a copy to-day.

SALEM SHORTHORNS

Herd headed by Gainford Marquis (Imp.), undefeated in England and Canada. Sire of the winning group at Can. National, 1914, 1915 and 1916. Can supply cattle, both sexes, at all times.

J. A. WATT, ELORA, ONT.

Imported Shorthorns 35 imported cows and heifers forward in calf to service in Scotland. Our 1916 importations are all choicely bred and see us.

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

Glengow Shorthorns, Cotswolds
For the present, we have sold all the Cotswolds we wish to spare, but we have a choice offering in young bulls fit for service. They are all of pure Scotch breeding, and are thick, mellow fellows, bred in the purple. **WM. SMITH, Columbus, Ont., Myrtle, C.P.R., Brooklin, G.T.R., Oshawa, C.N.R.**

SHORTHORNS AND SHROPSHIRE—T. L. Mercer, Markdale Ont.
Have sold all the Shropshires I can spare this season. Present offering in Shorthorns—ten really choice young bulls, sired by Broadhooks Golden Fame #50018—(imp.), and out of such noted families as Campbell-bred Clarets, Nonpareils, Marr Missies, Stamford's, Crimson Flowers, Village Girls and Charming Gems, ranging from 9 to 16 months old. All are good reds and roans.

IMPORTED SHORTHORNS
Have just received from Scotland some very superior Shorthorns. All cows and heifers have either calves at foot or are close up to calving. Also four imported bulls and a number of good Canadian-bred cows. These cattle will strongly appeal to the most exacting. Visitors can be met if notified.

A. G. FARROW, OAKVILLE, ONTARIO

MEADOW LAWN SHORTHORNS
F. W. EWING, ELORA, ONT.
In order to make room for the crop of calves coming on, attractive prices are being made on the offering of bulls ready for the trade. They are of extra quality and choice breeding, by that great sire, Eacana Ringleader, by Right Sort imp. Few bulls their equal are to be had.

Maplewood Farm Shorthorns and Lincolns
Present offering—10 young bulls, ranging in age from 7 to 18 months. Most of them are of the most fashionable Scotch breeding, others of the dual-purpose. All are priced to sell. Also a number of ram lambs. **WOODSLEE STATION, M.C.R. L.-D. phone. GORDON SMITH, WOODSLEE, ONT.**

Parkhill Shorthorns
Herd comprising over 70 head representing noted Scotch families. Bulls all sold except those listed in London sale, March 28th next. A few heifers well in calf will be sold right.

Visitors always welcome to this herd of long-established reputation.

R. & S. NICHOLSON, PARKHILL, R. NO. 2, ONTARIO

Hospital for Insane, Hamilton, Ont.
The choicest lot of young bulls we ever offered is the best description we can give you of the half dozen we are now pricing—from our Korndyke bull and R.O.P. dams, testing 4.08 per cent. butter-fat. Ages range from three to twelve months. No females offered.

Apply to Superintendent
HIGHLAND LAKE FARMS

Herd sire, **Avondale Pontiac Echo** (under lease), the world's record cow for milk production, and Canadian record for butter—41 lbs. Only one other 41-lb. bull in Canada. Our herd of one hundred includes nearly fifty daughters of a 33.31-lb. son of the great King Segis, brother to the sires of three world's record butter cows: Mature, 50.68; sr. 4-yr.-old, 46.84; jr. 4-yr.-old, 40.32 lbs.

Junior herd sire, **King Segis Pontiac Canada**, a half brother to Avondale Pontiac Echo, out of a 30-lb. Segis cow. He is for sale.

If this combination of breeding interests you, write for prices on either males or females.

R. W. E. Burnaby, Farm at Stop 55, Yonge Street Radial, Jefferson, Ont.

Riverside Holsteins Herd headed by "King Johanna Pontiac Korndyke," a brother in 30 days—world's record when made. His ten nearest relatives have official records that average 34.94 lbs. butter in 7 days. His daughters have made good in official test. The present R. of P. cow of Canada was bred here. Choice young bulls for sale.

I. W. RICHARDSON, R. R. No. 2, Caledonia, Ont.

KING SEGIS WALKER'S
oldest daughter with first calf made 456 lbs. milk and 24 lbs. butter; with her second calf, 560 lbs. milk and 29 3/4 lbs. butter. His first jr. daughter, through his sons, at 2 yrs. 2 months, made 440 lbs. milk and 23 1/2 lbs. butter.

A. A. FAREWELL, OSHAWA, ONT.

TOP DRESS all your Crops with Nitrate of Soda, no matter what other fertilizers you may have used — 100 pounds to the acre for seeded crops and 200 pounds to the acre for the cultivated ones. The increase will yield large profits over the cost.

Write on post card for our money making books

WILLIAM S. MYERS, Director
25 Madison Avenue, New York

Questions and Answers.
Miscellaneous.

Ashes—Annual Pasture.

1. What is the value of soft-wood ashes as a fertilizer?
2. Are ashes as valuable as most grades of commercial fertilizer?
3. I have two pigs three months old, which cough and sneeze when they are eating. They act as though they were partly choked. I am feeding skim-milk and shorts. What is the trouble and remedy?
4. Would sweet clover sown with oats, rye and sorghum kill out if not pastured until July?
5. What is the best annual pasture mixture?
6. Is the variety of beans known as Yellow Eye a good variety to sow? What rate of seeding do you advise?
7. What crop would you recommend sowing in an orchard that would produce feed for calves about the first of June?
8. Has sugar-sand that is found in maple syrup boiling pans any commercial value? Where can it be disposed of?

J. M.

Ans.—1. Ashes contain from six to eight per cent. of potash and from one to one and one-half per cent. of phosphoric acid, besides a large percentage of lime. The value of these constituents will depend on the care the ashes have received and the kind of wood. Some of the soft woods have a more valuable ash than certain of the hard woods. Swamp elm and black ash, according to analysis, are particularly high in potash, but below the average in phosphoric acid. Potash is readily available to the plant, which tends to bring immediate results from the application of ashes. They are particularly valuable for roots, legumes and fruits. It is difficult to place a value on the ashes owing to the increased price of potash, but if potash and phosphoric acid could be purchased at five cents a pound, the ashes, according to average analysis, would be worth about 40 cents per cwt. for fertilizing purposes. Under present conditions they would really be worth more than this.

2. No. Commercial fertilizers usually contain a certain percentage of nitrates which are not found in ashes, and as a rule the percentage of phosphoric acid and potash is higher than that found in ashes.

3. It is rather difficult to diagnose the case without seeing the pigs, and it would be advisable to have a veterinarian see them in order to determine accurately what is the matter. We are inclined to believe that the coughing is due either to lung worms or infectious bronchitis, either of which does not yield well to treatment. For these two diseases treatment consists of shutting the pigs in a closed building, with all openings closed, and then burning sulphur until you can no longer withstand the fumes. Open the door or windows to admit fresh air, and if necessary repeat treatment in ten days. It is just possible that the coughing may be due to some other cause, which a veterinarian would be able to determine.

4. No, unless the oats and rye were sown so thickly as to smother the young clover plants.

5. An annual mixture which has been recommended consists of 1½ bushels oats, 30 lbs. of sugar cane and 6 lbs. red clover. This sown in the spring gives good summer and fall pasture. However, in certain districts the sugar cane does not amount to much. Excellent results have been obtained from sowing 3 bushels to the acre of a mixture of 1 bushel of wheat, 1 bushel of barley, 1 bushel of oats, and 6 lbs. of red clover. This if sown at the regular seeding time should be ready for pasture the latter part of June. Turn the stock on before any of the grains head out, and as the crop is pastured down it will keep growing up fresh. The clover may give a little feed in the fall and can be left for hay or pasture the following season. This pasture gives fresh feed during the summer drought and usually up to the time the snow flies.

6. The Yellow Eye variety of bean is a favorite in some districts. It is a good yielder. The amount to sow per acre depends on the size of the beans, and it varies from three to five pecks per acre. The Yellow Eye would possibly come in about mid-way, but even in a

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"Eastlake" Galvanized Shingles, coupled with "Haltus" Ventilators and "Acheson" Roof Lights make a perfect roof. "Metallic" building materials defy the elements. "Eastlake" roofs laid over thirty years ago are good today.

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Before buying any building materials write us for Booklet and complete information. We can save you money.

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Will Cure Cows of Caked Bags

Three applications guaranteed

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No matter how old the blemish, how lame the horse, or how many doctors have tried and failed, use

Fleming's Spavin and Ringbone Paste

Use it under our guarantee—your money refunded if it doesn't make the horse go sound. Most cases cured by a single 45-minute application—occasionally two required. Cures Bone Spavin, Ringbone and Sidebone, new and old cases alike. Write for detailed information and a free copy of

Fleming's Vest-Pocket Veterinary Adviser

Ninety-six pages, durably bound, indexed and illustrated. Covers over one hundred veterinary subjects. Read this book before you treat any kind of lameness in horses.

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Write for our Price List
We Pay Express and Postage

E. T. CARTER & CO.
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Ask your dealer or write for prices.

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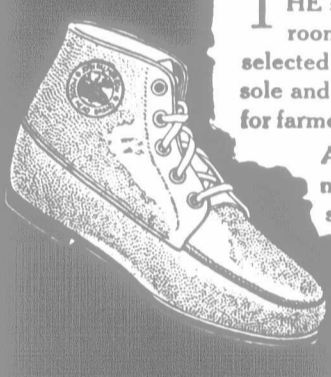

Palmer's Summer Packs

THE shoes for aching feet—light in weight, durable, roomy, comfortable and waterproof. Made from selected Skowhegan leather with water-proofed leather sole and heel and solid leather insoles. The ideal shoe for farmers or others working on the land.

Also specially suitable for woodsmen, trackmen, millmen, sportsmen, laborers—all who require strong, easy fitting footwear.

Get a pair of Palmer's "Moose Head Brand" footwear from your dealer. They will give you foot comfort and great wear.

JOHN PALMER CO., Limited
Fredericton, N. B., Canada

Seventh Annual Consignment Sale
OF THE

Belleville District Holstein Breeders' Club

Will be held in the City of BELLEVILLE, at the Albion Hotel Stables, on

Wednesday, April 4th, 1917
75 HEAD

For High-class Holsteins, come to Belleville—The Home of Champions and Hundred-pound Cows.

Listen, there will be sisters—and many of them, of the world's record cow, May Echo Sylvia, 152 lbs. of milk in one day. How could this offering happen? Her sire stood at service for eight years in this district of champions.

There will be daughters and gr. daughters of the 100-lb. sire, Count Segis Walker Pietertje, whose 5 two-year-old daughters average over 23 lbs. butter in 7 days. Daughters of a son of the great foundation cow, May Echo, who for 5 years was champion in the R.O.P. Her prepotency in the stamping of hundred-pound quality stands unequalled still. There will also be daughters of the 30-lb. sire, Fairview Korndyke Pontiac, and out of a sister of the 30-lb. cow, Victoria Burke. Several other cows with records up to 25 lbs., and sisters galore, to 30-lb. cows. Our 1917 females are overflowing with quality and production.

In bulls, the offering is extraordinary, the majority being sons of King Segis Alcartra Spofford, a son of the \$50,000 sire, and from the high-record cows of the district. There are bulls whose two nearest dams average over 29 lbs. One of these is by the same sire as Lady Perfection Korndyke, 40.43 lbs.

Our Motto: "A square deal to all." No by-bidding. Let us see you at Belleville. Apply for catalogues at once to:

F. R. Mallory, Sec. Frankford, Ont. **Jas. A. Caskey, Sales Mgr.** Madoc, Ont. **R. Parks, Pres.** Napanee, Ont.

IF YOU HAVE A
Steel Truss Barn
you won't be afraid of
Lightning
It is fire-proof, durable and roomy.
ASK FOR CATALOGUE
The Metal Shingle & Siding Company, Limited
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THE OMEGA MILKING MACHINE

has these advantages over other machines: Transparent celluloid milking tubes instead of rubber ones which harbor germs and are difficult to clean. Pail and teat cups are suspended from the back of the animal. The udder has no weight to carry. The pail cannot be knocked over and the teat-cups cannot fall on the stable floor and suck up straw or filth. The OMEGA milks fast and milks clean.

OMEGA—The Best by Test

The OMEGA is used and recommended by Mr. R. R. Ness, of Howick, Que., one of the largest importers and breeders of record Ayrshire cattle in Canada. He writes regarding the Omega as follows: "It certainly has all other machines beaten in point of cleanliness with those celluloid tubes instead of rubber, the pail hanging on the cow's back—never touching the floor, the position in which the teat cups are held insuring the most cleanly way of milking known to-day."

WRITE NOW for our FREE illustrated booklet describing the many superior features of the OMEGA.

C. Richardson & Co., St. Mary's Ontario

CREAM WANTED

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

Our guarantee is:
 Prompt Service
 Accurate Records
 Highest Prices

Write for particulars—it will be worth your while.

TORONTO CREAMERY CO., Ltd.
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LIVINGSTON BRAND
 The purest and best.

OIL CAKE MEAL

THE DOMINION LINSEED OIL CO., Ltd.
 Manufacturers, Baden, Ont.

CREAM WANTED

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

Ontario Creameries, Limited
 London, - Ontario

18 HOLSTEIN BULLS FOR SALE

Eleven months and under. Also 1 cow; 8 heifers, freshening from March till September, from tested and untested dams.

R. M. HOLTBY, PORT PERRY, ONT. R. 4

Willowlea Holsteins Offers a 20-months son of Sir Natoye Oakland. Others younger by Slepkie of Lakeview 2nd. Ask us also about our females.

A. E. MIGHT, BRAMPTON, R.R. 6, ONT.

RIDGEDALE HOLSTEINS offers three young bulls (one ready for service) at special prices. One is by Pontiac Hengerveld Pietertje, and the others are by King Segis Pontiac Duplicate. Can also supply a few females. **R. W. Walker & Sons, Port Perry, R.R. 4. Manchester, G.T.R., Myrtle, C.P.R.**

variety there is a tendency for the seed to vary in size.

7. Oats and clover would possibly give the best results for such early pasture. As the oats are picked off they will come on fresh again and the clover will come in for fall feed. Of course if the ground is shaded very much by the trees no crop will do particularly well.

8. We are not aware of sugar-sand having any great commercial value. This precipitate is calcium malate and may have a slight value from the lime which it contains.

Questions and Answers.
Miscellaneous.

Feeding Goslings.

1. How should goslings be fed?
 2. How much grain should geese get in winter?
 D. S.

Ans.—1. Goslings should be kept warm and given a little bread soaked in water for the first few days. If the weather is at all warm, let them run out on fresh grass. They do not require much care, as a rule. If they have a stream of water and a pasture field available they will pretty much take care of themselves. A mash composed of two-thirds bran and one-third cornmeal is sometimes fed to month-old goslings.

2. No stated amount of grain can be given. It will depend altogether on the appetite of the birds. Avoid feeding much corn as there is danger of the geese becoming too fat. Wheat, oats and barley make a good ration. Geese will also eat considerable finely pulped turnips during the winter.

County Road System.

I believe very few persons, including municipal councillors and Reeves, are acquainted with the Ontario Government's good-roads scheme. What is involved by the adoption of the system? It has been reported that some farmers in the adjoining county are complaining of the increased taxation, resulting from the good roads. What is the increase in taxes per \$1,000 of assessment, and what percentage of the work has been completed in Middlesex County? Which of the roads in Lambton County have been decided on to improve under this system? Who are the officials to decide this matter? I understand there has been some recent legislation whereby a person can take action to have certain roads improved. I would like to have particulars of the same, and to have advice on how to proceed to take advantage of the said Act. What is the frontage tax, if any, in this system?
 T. E. McM.

Ans.—Out of the 37 counties there are 24 which have adopted the Good Roads System, and a number of others are on the eve of doing so. The plan must be initiated by the County Council, who pass a by-law setting forth the roads which are to be included in the County Road System. The by-law is then submitted to the Department of Public Highways, and when approved the County Council is authorized to proceed with the work. The Province contributes 40 per cent. to the construction of roads, including culverts and bridges, and 20 per cent. to the cost of maintenance. The contribution to maintenance commences as soon as the system is assumed by the county. In Middlesex County there is a total of 390 miles under the Good Roads System, of which about 140 miles have been completed to date, in addition to a considerable amount of bridging, construction of culverts, grading and drainage work on the uncompleted portions. The County of Lambton has not yet established a system of good roads, although we believe the matter is under their consideration. No frontage tax is applied under this system. The cost of building the roads depends a good deal on the material at hand. If the gravel and stone are available the cost is much less than when this material has to be brought in by rail. A road which has no bottom is more expensive to build up than one which a lot of gravel has been previously spread. It is claimed that an annual rate of one mill or one and one-half mills on the county assessment would enable most counties in the province to finance construction. In Middlesex County one mill is levied to be spent under the Good Roads System. Outside of the government appropriation this is all that is spent yearly.

MANOR FARM





KING SEGIS PONTIAC POSCH
 SENIOR SIRE IN SERVICE AT MANOR FARM
 Sire King Segis Pontiac Alcartra (the \$50,000 Sire)
 Dam Fairmont Netherland Posch (32 59 lbs. at 4 yrs. old)

You know Manor Farm has a real reputation for cattle dealings.
 Now, Mr. Breeder, no matter where you live, if you are in the market for a young sire of choice breeding to head your herd, just let me hear from you.
 I can take care of your needs, whether you want a high- or low-priced fellow.
 Now is a good time to buy.

GORDON S. GOODERHAM
 CLARKSON, ONT.

AT SERVICE

May Sylvia Pontiac Cornucopia

"The most perfectly bred bull of the breed," and a perfect individual. Sire, Spring Farm Pontiac Cornucopia, a son of the 44.18-lb. cow, K. P. Pontiac Lass. Dam, May Echo Pontiac, a daughter of the great May Echo Sylvia, champion milk cow of the world. The butter records of his two grandams average 42.59 lbs. in seven days, and 170.5 lbs. in thirty days, being also another world's record.

Apply early, as only a number of approved cows will be accepted. Terms, a matter of arrangement.

Owners—W. F. Elliott, A. J. Camplin, C. R. Dyke, L. M. Kennedy, G. Brownsberger.

W. F. ELLIOT, Sec., (Bell Phone) Unionville, Ont.

A Son of King Segis Alcartra Spofford

For sale (see illustration of this sire page 391, March 1st issue) out of a 21 1/4 lb. Jr. 3-year-old, his sister made 41 lbs. butter in 7 days. On her dam's side there are 40 and 33-lb. records. He is a straight young fellow, with lots of quality, and bred along the same lines as are Canada's big producers of milk and butter. We also have other sons of King Segis Alcartra Spofford, bred from official record dams. It will pay you to buy here. Send for extended pedigree.

B. R. LEAVENS, BLOOMFIELD, ONTARIO

ROYCROFT FARM HOLSTEINS
 FORMERLY THE HET LOO HERD

We have a few exceptionally nice, straight 9, 10 and 12-month heifers, principally all from high-record cows we have purchased in both Ontario and United States. They are all from good record sires, but as our stabling is limited we are offering these at prices away below their value, so we may keep only those of our own breeding. They will not remain with us long. Write quick if you want them.

We are at present offering the services of King Segis Alcartra Spofford to a limited number of approved cows. Write for particulars.

W. L. SHAW, Prop. Gordon S. Manhard, Supt., Newmarket, Ont.

SUMMER HILL HOLSTEINS

The only herd in America that has two stock bulls that the dam of each has milked over 116 lbs. a day and their average butter records are over 35 lbs. a week. We have fifty heifers and young bulls to offer, by these sires, and out of dams just as well bred. We invite personal inspection.

D. C. FLATT & SON, R.R. 2, HAMILTON, ONT. Phone 7163

EVERGREEN STOCK FARM—High-class Registered Holsteins

Co breeders who wish to make secure their future success we are offering some extra choice bull calves at living prices. Two of these are from daughters of a son of Lulu Keyes, 36 lbs. butter 7 days, and 21 lbs. milk per day, and sired by Prince Colantha Abbecker, whose dam made 32 lbs. butter 7 days and 104 lbs. milk per day.

A. E. HULET, NORWICH, ONT. Bell Phone 48-7, 1

CLOVERLEA HOLSTEINS

Our entire lot of bulls, fit for service, as advertised are sold. We still have a number coming on, eight months and under, which will be priced right for immediate sale. Write quick, for they will go fast.

GRIESBACH BROS., COLLINGWOOD, ONT.

2 ONLY ORCHARD LEIGH HOLSTEINS ONLY 2

We have only 2 young bulls fit for service left. No 1.—Born November 7th, 1915. His dam was first prize mature cow at Guelph Dairy Test, 1915, R.O.M., 7 days, 27.96 lbs. butter and 514 lbs. milk Price \$200. No 2.—Born October 18th, 1915. His sire's 7 nearest dams average over 30 lbs. butter in 7 days. His dam, at 3 years, made 25.81 lbs. butter and 559.5 lbs. milk in 7 days. Price \$175

JAS. G. CURRIE & SON, (Electric car stops at the gate) INGERSOLL ONT

Dumfries Farm Holsteins

175 head to choose from We have on hand at present about 20 young bulls

by De Kol Mechthilde Prince, a son of Prince Aaggie Mechthilde. Can also spare a few fresh cows. Visitors always welcome.

S. G. & ERLE KITCHEN, St. George, Ont.

Questions and Answers. Miscellaneous.

Feed for Dairy Cows.

I am feeding a mixture of 20 lbs. silage, 45 lbs. roots, and all the timothy hay the cows will eat per day, besides 12 lbs. of the following mixture to cows giving 50 lbs. of milk: bran, 400 lbs.; oat chop, 300 lbs.; cottonseed, 200 lbs.; oil cake, 100 lbs. Would better results be obtained if I made a warm mash of part of the meal?

F. W.

Ans.—Except for the timothy hay you are feeding an exceptionally good ration for dairy cows, and even with the timothy hay the concentrates are all high in nitrogenous substance and balance the ration. If legume hay were fed the expensive part of the meal ration might be reduced a little. The concentrate part of the ration consists of practically one-third cottonseed and oil cake. Twelve pounds of this strong feed is considered heavy feeding for a cow giving 50 lbs. of milk. About one pound of the meal to five pounds of milk would be very good feeding, although the amount must be determined by the feeder himself. It is a case of feeding what the cows will pay for. Some cows in the herd will respond more readily than others to heavy feeding. We doubt whether the increase in milk yield would pay for the extra work in preparing a warm mash.

Treatment of Smut.

In a March, 1916, issue of the Farmer's Advocate I read about a method for treating seed grain for smut, which was considerably handier than the immersion method. I tried this system last spring with success, but I have mislaid the paper. I forget who wrote the article but a Mr. Shearer's name was mentioned. Could you publish this recipe again?

A. J. H.

In March 30, 1916, issue, under the heading "A Handy Method of treating Grain for Smut", the following recipe was given: 5 tablespoonfuls of formalin is put in a two-gallon sprinkling can of water and about 15 bushels of grain are treated with it. This is about 2 1/2 ounces of formalin to 2 gallons of water. The corresponding states:

"In practice I take about 15 bushels of seed grain and put it in a heap on the granary floor and sprinkle it with 2 gallons of formalin solution of the strength already mentioned, shovelling it over during the process. I then shovel it over about twice, so as to get the whole thoroughly mixed and bag it up at once. It can be sown in an hour's time or a week's time. The amount of liquid used is so small in proportion to the amount of grain that the latter absorbs it in a few minutes so that the grain scarcely feels damp and runs perfectly free from the drill."

Keeping Roads Open in Winter.

Municipal council in regular session appoints pathmasters for every division in township. Certain of these divisions are also grouped in what are known now as county roads and are looked after in summer-time by a person called County Roads Commissioner. These county roads become blocked with snow in winter and several ratepayers lay a complaint. Pathmaster refuses to act and says it's the county commissioner's job. Commissioner refuses to act and says it's pathmaster's job.

1. Can a municipal council appoint whoever they see fit as pathmaster and compel him to act?

2. In the above case who should see the road cleared—the pathmaster or the commissioner?

G. L. B.

Ans.—1. I cannot find where a municipal council has authority to compel anyone to act as pathmaster who is unwilling to do so.

2. Under ordinary circumstances a township council or their pathmaster should perform no work whatever on a county road, as county roads are under the exclusive jurisdiction of the county council. However, under the "Snow Roads Act R.S.O.", 1914, chapter 208, a county council may require certain roads during the season of sleighing to be provided with a double track, and may also provide that pathmasters appointed by the township councils shall keep open such double-track snow roads, whether they are county roads or township roads.

W. A. McL.

Simonds Crescent Ground Saw, No. 325

Guaranteed to Saw More Timber in Less Time Than Any Other Saw

With every "SIMONDS" Crescent Ground Cross-Cut Saw sold, a guarantee is given that this saw will cut 10% more timber in the same time and with the same amount of labor than any other cross-cut saw on the market. This guarantee has stood for 30 years.

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There is money to be made by using Concrete. Many hundreds of farmers have proved it.

Our large business as manufacturers of Cement depends largely upon the growing use of Concrete on the farms of Canada.

To further increase the use of Concrete we have to be able to convince farmers that its use profits them.

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"What the Farmer Can Do With Concrete." That's why we gladly send it free to any farmer—because we know it is interesting enough to be read, and that no farmer can read it without being convinced he needs concrete to make his farm 100% profitable.

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CANADA CEMENT COMPANY, Limited 30 Herald Building MONTREAL

Table with 2 columns: 'Signify what you want information about' and 'Dairy Houses'. Rows include Floors, Concrete Blocks, Silos, Garages, Troughs and Tanks, Dairy Houses, Barns, Fence Posts, Root Cellars, Roads.

FOURTH CONSIGNMENT SALE OF 50 HEAD PURE-BRED AYRSHIRE CATTLE

FROM THE HERDS OF THE SOUTHERN COUNTIES AYRSHIRE BREEDERS' CLUB

to be held at Dr. Rudd's Sale Stable, Woodstock, Ont.

April 5th, 1917, at 1 p.m.

In this sale will be found representatives of the greatest producing strains of Ayrshires in Canada. JEAN ARMOUR, ex-world's champion; LADY JANE, Canadian R.O.P. champion cow; SCOTCH THISTLE, Canadian R.O.P. champion 3-year-old; and LENORE, 2nd champion butter-fat producer in 2-year-old class, were all bred by members of our club. In this sale, we believe we have the best lot of cattle yet offered at any of our sales. There will be a few choice young bulls, including Snow King, champion at London last fall.

Write the secretary for a catalogue, with full details of the sale. W. W. Ballantyne, Stratford, Ont. John McKee, Norwich, Ont. President Sec.-treas. and Sale Manager MOORE AND DEAN, AUCTIONEERS

GLADDEN HILL AYRSHIRES

Headed by Fairview Milkman, our choice bull, 18 months old, from R.O.P. dams giving over 10,000 lbs. milk, testing over 4%. Bull calves up to six months of age and a few females for sale inspection invited. LAURIE BROS., AGINCOURT, ONTARIO

Hillhouse Ayrshires

F.H. Harris, Mt. Elgin, Ont.

Headed by Burnside Lucky Master Swell, a combination of blood so hard to equal, being of the Masterpiece and Lucky Girl families, a combination which means quality, production and constitution. 90 head to select from. Special offering—20 yearling heifers and 3 bulls. Inspection invited.

THE WOODVIEW FARM JERSEYS LONDON, ONTARIO Jno. Pringle, Prop.

CANADA'S MOST BEAUTIFUL JERSEY HERD Present offering—Some high-class bull calves ready for service, from Record of Performance dams, including grand champion bull at last Western Fair and his full brother; also cows and heifers. State distinctly what is wanted if writing WE WORK OUR SHOW COWS AND SHOW OUR WORK COWS

Young BRAMPTON JERSEYS Bulls

For the next fortnight we are making a special offering on young bulls, bred from the highest producing families ever introduced into Canada. Brampton Jerseys and their descendants hold all Jersey R.O.P. records, save one. Females, all ages, also for sale B. H. BULL & SON, BRAMPTON, ONTARIO

THE DON JERSEY HERD—

OFFERS: Several young bulls, all of serviceable age and all from R.O.P. dams. These are priced right. Interested parties should write or see these at once. We also have females of breeding age. D. Duncan & Son, Todmorden P.O. Duncan Sta., C.N.O.

Advertisement for American Separator, featuring a large '16' and an illustration of a woman operating the machine. Text includes '95 Upward TRIAL', 'American Separator', 'Fully Guaranteed Cream', and 'Monthly Payment Plan'.

Lakeside Ayrshires

A few young bulls for sale, from Record of Performance dams, imported and Canadian-bred, sired by Auchinbrain Sea Foam Imp. 35785, grand champion at both Quebec and Sherbrooke. Write for catalogue. GEO. H. MONTGOMERY, Proprietor Dominion Express Bldg., Montreal, Que. McArthur, Manager, Phillipsburg, Quebec

Dungannon Farm Ayrshires

Offers two eleven-months-old bulls by Hume-hauh Prince Fortune, and from good dams. Also younger stock. W. H. FURBER, Mgr., R. R. 6, Cobourg, Ont.

Glencairn Ayrshires

Herd established 40 years. Producing ability from 8,600 to 11,022 lbs. If that sort of production appeals to you, we have heifers all ages and young bulls for sale. Thos. J. McCormick Rockton, Ont. Copetown Stn., G. T. R.

Advertisement for Live-stock Labels for cattle, sheep and hogs, manufactured by the Ketchum Manufacturing Co. Includes an illustration of a cow and a pig.

All cows give some
MILK
Well fed cows of course give
MORE MILK
but cows fed **COTTON SEED MEAL** give the
MOST MILK
and do it at less cost per pound.
COTTON SEED MEAL
when carefully selected, such as our **BRANDS** are, is the most economical and most satisfactory concentrate on the market. It is rich in protein, and offers it to the animal in a highly palatable and digestible form, and cows need protein to produce the maximum amount of milk. A scientific dairyman will always include in the ration sufficient cotton seed meal. More natural farm roughage and less grain products can be used. Ask your Experiment Station.

OUR BRANDS:
Owl Brand Dove Brand Jay Brand Fox Brand
41-43% Protein 38½-40% Protein 36-38% Protein 20-22% Pro.

All selected quality—Cotton seed meal is our specialty and has been for forty years. Come to headquarters.

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—Are prevalent in cold weather irregular work and overfed induces both. A system tonic and blood purifier, such as
FLEMING'S TONIC HEAVE REMEDY will prevent these troubles and when developed, with Fleming's Veterinary Healin' Oil will quickly cure them. Per box, \$1.
Fuller information in Fleming's Vest Pocket Veterinary Adviser Write us for a Free Copy
FLEMING BROS., Chemists
75 Church St., Toronto



TAMWORTHS
Young sows bred for April and May farrow, and a nice lot of young boars for sale. Write:—
John W. Todd, R. R. No. 1, Corinth, Ont.

Morrison Tamworths and Shorthorns. Bred from the prizewinning herds of England. Tamworths, both sexes, 140 to choose from. Shorthorns, 5 bulls, from 5 to 10 months old, reds and roans, dandies. Females of the best milking strains. **CHAS. CURRIE, MORRISTON, ONT.**

Cloverdale Berkshires and Shropshires—In Berkshires I can furnish boars or sows, all ages, pairs not akin. All breeding stock imp. or from imp. stock. In Shropshires can furnish rams or ewes, any age, from imp. stock. Prices reasonable. **C. J. LANG, R. R. No. 3, BURKETON, ONT.**

Swine for Sale An offering choice stock in Poland-China and Chester White swine of either sex, most any age. First-prize Poland-China herd, London and Toronto, 1915. Prices easy. **GEO. G. GOULD, R. R. 4, ESSEX, ONT.**

Champion Berkshires When buying, buy the best, our present offering are sons and daughters of the two great champions, Lucky Lad and Baron Compton, and out of winners, including champions. Both sexes. **W. W. Brownridge, Georgetown, Ont. R. R. 3.**

Berkshire Pigs Registered stock, choice bred young boars, and sows in pair, all ages. Can supply pairs not akin. **CREDIT GRANGE FARM, J. B. PEARSON, Mgr., Meadowdale, Ontario.**

AVONHURST YORKSHIRES A large number of choice pig. February farrowed. One of our sows farrowed 50 pigs in three litters. Can supply any type. Pairs not akin. We guarantee satisfaction. **B. Armstrong & Son, Codrington, Ont.**

Meadow Brook YORKSHIRES I can offer a splendid choice of sows, bred for May and June farrow. All bred from prize-winning stock. Prices reasonable. **G. W. Miners, R.R. 3, Exeter, Ont., Huron Co.**

Yorkshires Sows bred and younger, farrow 2 and 3 months, one Our Champion winner of 12 firsts and 5 championships in 2 years' showing at Toronto and Ottawa. **Prize turkeys from prize-winning stock. Wm. Manning & Sons, Woodville, Ont.**

Questions and Answers.
Miscellaneous.

Eczema—Scaly Legs.

1. I have a dog which has a very itchy ear. There is a discharge from it and if scratched it will bleed. What treatment do you advise?

2. We have a flock of hens which have scales on their legs. Is this scaly leg? If so what is a suitable remedy?
A. R. McB.

Ans.—1. This may be due to several causes, but if the itchiness is located in the one ear only, it is in all probability due to an injury which has refused to heal properly. It is possible that it is a form of eczema; if so, bathe the affected part twice daily with a solution of one of the coal-tar antiseptics. Sometimes a dog will have mange, but the whole body is usually affected. This is rather difficult to cure, but an ointment consisting of one part sulphur and three parts lard very often proves effective.

2. The symptoms indicate that the birds are suffering from scaly leg. Soften the scales by soaking in warm, soapy water and remove by the use of a nail brush. Apply an ointment of one part oil of caraway to five parts vaseline, or a mixture of lard and kerosene is very often effective.

Beans—Seeding Down—Lime for Clay Soil.

1. What do you think of seeding down land that was ridged up last fall?

2. What quantity of beans should be sown to the acre?

3. Give a few tips on shearing sheep.

4. How should the wool be kept from the time of shearing until sold?

5. What is the best way to keep worms from cabbage?

6. Would I injure cabbage by applying Paris green to destroy the worms?

7. What value has ground lime-stone on clay, sandy soil, black muck, and well-manured garden land?

8. How much drop in 12 feet is necessary to pump water through a one-inch pipe a distance of about 50 feet, so as to avoid freezing?

9. Do you think such feeds as oats, bran, shorts, etc., will continue rising in price?
J. S. K.

Ans.—1. Land which was ridged last fall should work down to an excellent seed-bed for sowing grass seed.

2. The amount of seed to sow per acre depends on the size of the beans. For the small, white pea-bean about 3 pecks per acre is considered sufficient; the marrowfat variety requires about 5 pecks per acre. This is sowing in rows about 28 inches apart.

3 and 4. An article on the subject will appear in an early issue of "The Farmer's Advocate."

5 and 6. It is not advisable to apply Paris green to the cabbage to destroy the green worm, owing to the fact that some of the poison might be held in the head of the cabbage and cause serious results when the cabbage was consumed. A decoction made from steeping wild chamomile in hot water is effective in eradicating the green worm and does no injury to the cabbage. Sometimes the cabbage root maggot destroys the young plants. Applying a solution of corrosive sublimate to the roots once a week for five weeks after the plants are set has been found to lessen the loss from the insect.

7. Ground limestone will sweeten an acid soil, thus making it more suitable for practically all kinds of crops. If the soil already contains a considerable quantity of lime, marked results might not be noted from the application of ground limestone. The limestone will also aid in liberating other plant foods.

8. We do not clearly understand what is meant by the question, but if it is a drop of so much in 12-foot lengths of pipe that is required to prevent water freezing, we would suggest having at least a couple of inches to the 12 feet, as unless the water flows rapidly it will freeze in a one-inch pipe if exposed to zero weather.

9. The price depends a good deal on the supply and demand. In all probability the price will continue to rise somewhat until the new crop is harvested, then if the crop is a good one and the demand for feed does not increase, there will be a tendency toward a reduction of prices. On the other hand a falling off in demand at the present time would also have a tendency to cause a slight drop in the prices of feeds mentioned.



Plan for a Silo NOW
while you have time to attend to it.

THE profits that you might have had this winter from a silo have gone beyond recall, but there is no reason why you should lose them again next winter.

Plan your silo now. Before you know it, the rush of spring and summer work will be on and if you let the matter drag along you may find when harvest-time comes around that you have not been able to get your silo ready.

Don't let next winter find you without an IDEAL GREEN FEED SILO

Your cows will give 25% more milk on a silage ration than on grain feed and you can feed them much more cheaply on silage than on grain. Without a good silo you cannot hope to make all the profit from your cows that you could make.

You have time now to give the matter your attention and there is nothing to gain by delaying until later in the year. Place your order for an Ideal Green Feed Silo and make sure of having it ready to receive your silage when your corn is ready to cut.

An IDEAL will preserve your silage better than any other silo made, and will last longer. Thousands of Canadian cow owners have proved this to their own satisfaction. It will pay you, too, to buy a silo you can depend upon.

Write today for our large illustrated catalogue which shows you every detail of this silo and explains just why you get more in it for your money than in any other.

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PEERLESS PERFECTION

No matter how fast it comes, the most unruly animal can't break through a Peerless Perfection Farm Fence—it springs back into shape. Made of heavy Open Hearth steel galvanized wire with all the impurities taken out and all the strength and toughness left in. Every wire is crimped making the fence into one continuous spring. Top and bottom wires are extra heavy. Will not sag. Requires less posts than ordinary fence. Absolutely guaranteed. Don't buy a rod of fencing until you get our illustrated Catalog. Describes our big line of farm, poultry and ornamental fencing. Also Peerless farm gates. Agencies almost everywhere. Agents wanted in all unassigned territory.

The Banwell-Hoxie Wire Fence Company, Ltd.
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DUROC JERSEY SWINE, JERSEY CATTLE

In Duroc Jerseys we have either sex of any desired age, bred from winners and champions for generations back. In Jerseys, we have young cows in calf and young bulls, high in quality and high in producing blood.
MAC, CAMPBELL & SONS, Northwood, Ont.

ELMHURST LARGE ENGLISH BERKSHIRES
From our recent importation of sows, together with the stock boar, Suddon Torredot, we can supply select breeding stock, all ages. Satisfaction and safe delivery guaranteed.
H. M. VANDERLIP, Breeder and Importer, R. R. 1, Brantford, Ont.
Langford Station on Brantford and Hamilton Radial.

TAMWORTHS AND SHORTHORNS

Young sows due to farrow within a month. Young pigs, both sexes, all descendants of Imp. and Silver Medal Stock. Ten young heifers and cows, grand milking strain, in calf to Broadlands No. 87905.
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Used by Seven Governments



Sprayers

Secured first place at Manchester (England), Petrograd (Russia); Toronto, Ottawa and Halifax, Canada.

An Aylmer Sprayer backed with such commendation as this, is surely good enough for you. This style will suit your requirements for the orchard, vineyard, potato crop, or even whitewashing and painting.

Sprayer No. 3—Outfit F.

Outfit includes Bronze pump with mechanical dash agitator, two ten-foot lines of hose with couplings attached, four Bordeaux nozzles of the Friend type, two brass Y's and two brass stop-cocks, also two eight-foot iron extension rods.

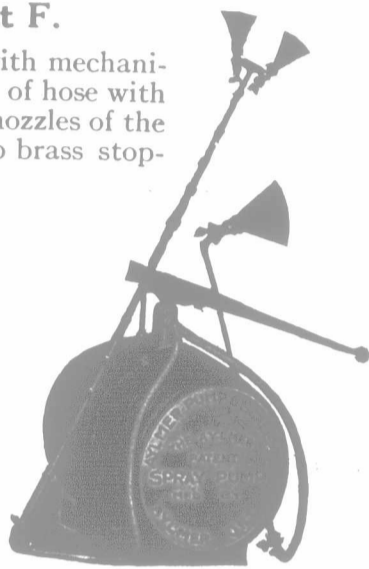
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Sprayer No. 3—Outfit F.

This Washer Must Pay For Itself

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but, I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right, but pay me first, and I'll give you back your money if the horse isn't alright."

Well, I didn't like that. I was afraid the horse wasn't "alright" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity"



Our "GRAVITY" design gives greatest convenience, as well as ease of operation with quick and thorough work. Do not overlook the detachable tub feature.

Washer does the work so easy that a child can run it almost as well as a strong woman, and it doesn't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for the people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

State whether you prefer a washer to operate by Hand, Engine Power, Water or Electric Motor. Our "1900" line is very complete and cannot be fully described in a single booklet.

Address me personally, M.K. MORRIS, Mgr., Nineteen Hundred Washer Co., 357 Yonge St., Toronto, Ont.,

APPLE TREES

THE best varieties, all Government inspected trees, at rock-bottom prices, delivered at your nearest railway station. You will never again, we believe, have an opportunity to buy selected trees at these low prices. Nurserymen and growers predict next year an advance of from ten to fifteen dollars per hundred. Place your order now, while we have a general assortment on hand.

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HOLSTEINS of QUALITY

The Oxford Holstein Breeders' will hold their 7th sale of Pure-Bred Holsteins at Woodstock, on

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We believe this to be the best offering at auction in the district. Winners in show-ring and dairy test, daughter of 30-lb cow, and bulls from cows giving over 100 lbs. milk in 1 day. There will be over 60 females and 19 bulls; females will be fresh or in calf, bulls fit for service.

The sale will commence sharp at 10.30 a.m. Write W. E. Thompson, R.R. No.7, Woodstock, Ont., for catalogue, and note the 30-lb. blood. All will be sold at your own price. Easy terms—6 months' credit on bankable paper. 6% per annum off for cash.

W. E. Thompson, Secretary, R. R. No. 7, Woodstock, Ontario
Moore & Dean, Auctioneers

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of comfort will be the yield if you invest now in an

Old Age Endowment

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For Pamphlet and Memo. Book, write Dept. F.

A better separator for less money

CHOOSE the Viking Cream Separator and you save money on the first cost; you save money on repairs. You get a larger capacity with fewer parts to wash and fewer parts to wear out.

Write for your copy of our free descriptive booklet which tells the whole story.

SWEDISH SEPARATOR COMPANY, - 515 South Fifth Ave., Chicago, Ill.

VIKING Cream Separators of Quality



For Sale 400 Bushels White Oats grown on my farm; free from mustard, wild oats or smut. Sample on request. \$1 per bushel. Sacks free; delivered at La Salette station. **JOSEPH GIBBONS,** La Salette, Ontario

SPRINGBANK CHESTER WHITES Ancestors bred from prize winners and champion Young sows, bred for June and July, 1916, newly weaned, both sexes. Young to be 100 months old. **Wm. Stevenson & Son,** R. R. No. 1, Science Hill, Ont.



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BUY YOUR SUPPLIES WHOLESALE! BY CLUBBING ORDERS WITH YOUR NEIGHBORS YOU CAN GET: sugar, groceries, sulphur, Epsom salts, saltpetre, flour, feed, oats, cottonseed meal, oilcake meal, seeds, farm engines, oils, etc., at low prices. Quantity discounts. Write for prices, stating what you want. **WE BUY HIGH-GRADE EGGS FROM LARGE PRODUCERS OR EGG CIRCLES. WRITE FOR INFORMATION.** **CANADA GROCERY COMPANY, (Wholesale)** 32 Front St. West, Toronto, Ont.

In forty-five years **THE MUTUAL LIFE OF CANADA** never went back on a guarantee.

**Are you out to save money or to waste it?
Are you out to take 3 days to a job instead of 1?
Do you want a fence that lasts or not?**

THESE may seem like idle questions. Yet in this war-time, when labor is so scarce and material costs so much, here is the standing wonder to STANDARD Tube and Fence users. Why will farmers put up cheap, "made-to-sell" fences, and also why will they waste hours of back-breaking labor, digging holes three times too big for a fence post, then stick the post in, fill it up, have the fence rot to pieces and have to go through the whole performance again?

Cheap fencing doesn't pay—us or you

We are more mindful of our Quality-guarantee this year than ever before, and so should you be. Steel is almost a "precious" metal. Galvanizing materials are sky-high too. So look out for "cheap" or skimped fence. We say that whether you buy "STANDARD" Fence or not. A poor fence is an aggravation, an expense, and finally a total loss.

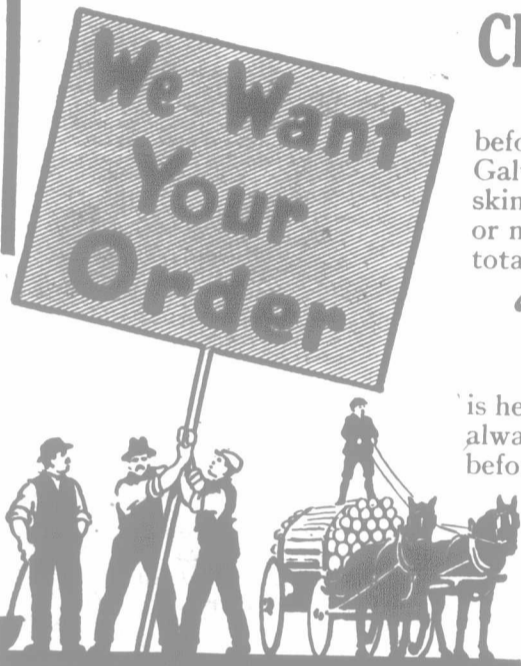
"Standard" Fence carries a real Guarantee

It is full Government Standard No. 9 gauge wire. The galvanizing is heavy and perfect. The uprights are full gauge, too. The spacing is always true and uniform. The tests that STANDARD Fence gets before and during weaving are such you'd wonder any fence could stand them. No man's money can buy anything better, but if you ever have any complaint, just write us, and you'll see what a real guarantee means.

Use Standard Steel Tube Fence Posts

This is the modern, money-saving plan over wooden posts, which always were hopelessly wasteful. STANDARD Posts are driven into the ground with a few mallet strokes, and there they stay. They don't wobble or sag. They don't crumble and rot. They don't blow down. They don't harbor crop-destroying insect pests. They don't cost as much as cedar, and they hold the fence better. No staples to buy, we furnish special hooks.

But here's the big labor and money-saving point: Let a man and boy go out with a wheelbarrow and mallet, and they'll put in more posts in a day, and do it better, than three men and a boy digging holes and putting in posts the old way. Just figure out for yourself the saving that means.



WE COST YOU

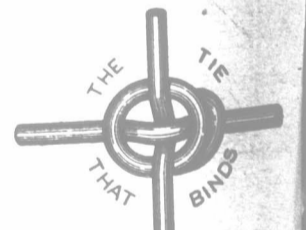
The wages of three men and a boy. We're the old-fashioned wood-post, sore-handed, broken-backed gang that every farmer abominates. Still we want your order, because we look cheap in some localities and, well, just because you've always used us.



WE COST YOU

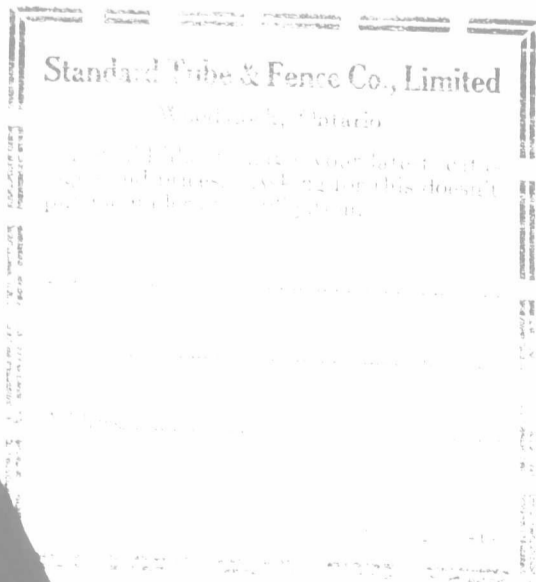
Only one man's time and a boy's. The STANDARD Steel Tube Posts we use cost less than wood in money and service.

We do a job you'll be proud of and will last longer than the boy who put them in will. We deserve your order if you want to save money.



Steel Tube Fence Posts and Wire Fencing

Take a look at our famous Knot. This type was originally invented by us, and, although widely copied, our special gradual-curve improvement, whereby the grip is vise-like, yet the galvanizing never chipped or cracked, has never been equalled.



STANDARD Fence Post Hooks are supplied free, and they give a taut, even grip and cut out the labor of driving staples.

Our whole business is built up on big service to farmers. Use STANDARD Fence, STANDARD Posts and Staples, and banish the broken-down-fence bogey, and banish the weary, wasteful, costly post-hole digging.

STANDARD Fencing is shipped same day as order is received, 80¢ worth and over goes freight paid anywhere in Ontario, Canada. All types of fencing, gates, tools, etc. are on the coupon to-day.

Standard Tube & Fence Co., Limited
Woodstock, Ontario

