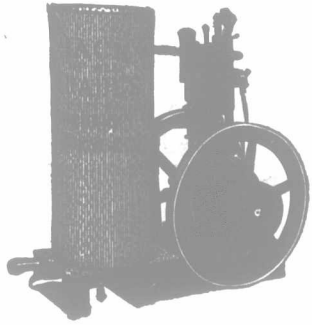


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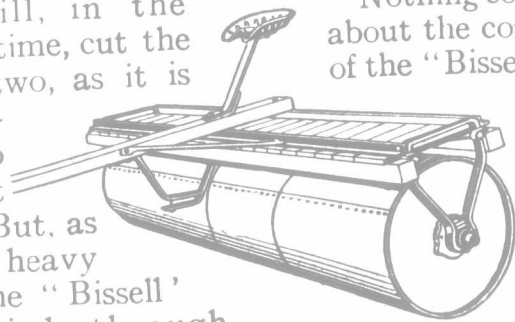
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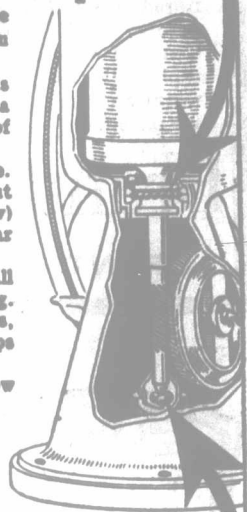
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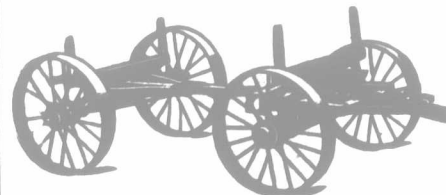
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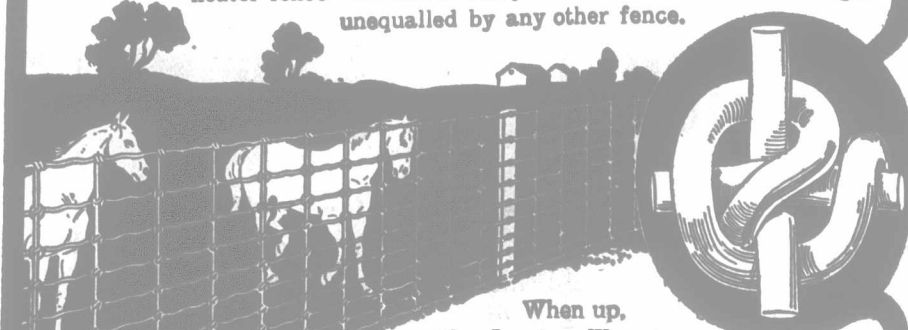
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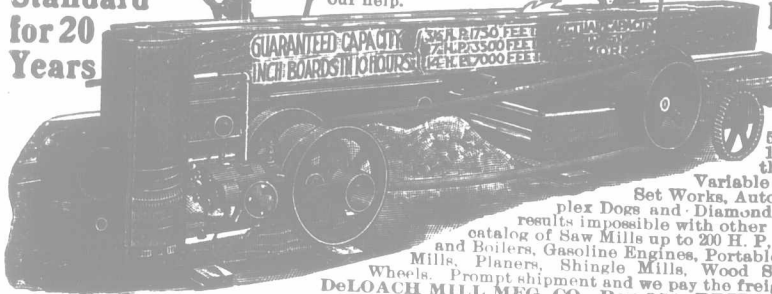
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Vol. XLIII.

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LONDON, ONTARIO, MARCH 26, 1908.

No. 809.

EDITORIAL.

A YEAR OF TEST.

Nineteen-seven was a year of test. It knocked the bottom out of shaky securities; squeezed some of the juice from watered stocks; weeded out a number of ill-conceived and injudiciously-managed enterprises, and helped to bring high finance down within hailing distance of a sound economic basis. In the process, good businesses have suffered to a certain extent, some more than others, depending somewhat on the nature of their commodities and the field of their operations. Articles which consumers are disposed to dispense with in a pinch, naturally do not trade briskly in a season when work is slack, profits contracted and industry disturbed. Again, some regions are harder hit than others. The much-discussed financial stringency was more acute in Western than in Eastern Canada, and firms catering to the former market have naturally experienced more difficulty with their collections. Making due allowance, therefore, for these and other variations in the state of affairs, it is safe to say, in a general way, that business enterprises that were solidly established in good centers, catering to a real demand, and conducted along sane business principles, have weathered the financial storm and piloted past the rocks of disaster with few casualties and very few wrecks. Some will experience diminished profits, and some have merely kept things going during the slack season, but others will actually have to their credit increased earnings.

On the other hand, enterprises rashly conceived, imprudently managed, and depending on visionary hopes of an uncertain demand, though possibly they have enjoyed a semblance of prosperity in the halcyon years, have, during the test year, been forced into liquidation, amalgamation, and all sorts of expedients in order to keep eyes, nose and ears above the water-level. On the whole, it is well that such periods come occasionally to try out financial concerns and starve sickly plants out of the field of legitimate business. It is a hard lesson for the victims, but the laws of supply and demand, and the survival of the fittest, are inexorable, and rapid extinction is better than lingering death.

Meanwhile, it is gratifying to the publishers of "The Farmer's Advocate" to find that the financial year of 1907-8 promises to prove the banner year in the history of the paper—better even than the previous banner year of 1906-7. Circulation returns are keeping up splendidly, and are particularly satisfactory during the month of March, having, up to date of writing, exceeded by 20 per cent. those for the corresponding portion of March, 1907. We attribute these results to the fact that the success of "The Farmer's Advocate" is built up on the solid basis of merit. It gives value many times over for every dollar received, and the agricultural public, recognizing this fact, are more liberal in their patronage year by year.

While highly pleased with the showing made, we appeal to our subscribers to continue yet more vigorously their canvass for new names, thereby introducing more and more farmers into the domain of advanced agricultural science and practice, at the same time enabling us to still further excel, enlarging the size, increasing the number of select illustrations, and improving the quality of the reading matter as fast as resources permit. We feel sure that our readers understand, from our record, that, in helping us, they are helping themselves. "Give and it shall be given unto you," is a motto we endeavor to apply both ways. We believe "The Farmer's Advocate" has always been a credit to agricultural

journalism. It is our ambition to make it a still greater success. By your help we shall do it.

THE WHEY-BUTTER QUESTION.

There has been considerable discussion during the past year in regard to the making of butter from fat obtained by skimming the whey at cheese factories. This whey always contains a small percentage of butter-fat, varying in quantity, according to the condition of the milk received and the skill of the cheesemaker. In the average factory it would probably run .25 to .3 per cent., or about one-twelfth to a thirteenth of the amount of fat originally contained in the milk. The idea of running this whey through a cream separator, recovering the fat, and making it into butter is not new. It has been tried long ago at the Dairy Schools and elsewhere, but, as Prof. Dean brings out, the results were never very satisfactory. The butter, though quite fair when made, lacked grain, body and keeping quality. It was not of such a grade that it could be safely sold to the regular trade. If this were the case, what would happen were this butter to be manufactured extensively for the export trade, or even for domestic consumption? In all probability a law would have to be enacted compelling the special branding of whey butter, and possibly prohibiting its export.

Assuming that a satisfactory market could be found, what would be the profits of making whey butter? These would depend. A large, combined butter and cheese factory might skim the whey and make the butter up at a profit, but in a small factory, not already equipped with butter-making machinery, it is very doubtful, indeed, whether there would be anything left after allowing for the cost of fuel, for skimming, labor, packages, marketing, sinking fund and interest on plant, and repairs.

There is another very important point of which patrons should not lose sight. The whey will be worth less for feeding. The constituents of whey that make it valuable for feeding are the nitrogenous substances, chiefly albuminoids, which average about .8 per cent., the fat averaging, say, .28 per cent., and the ash, sugar, etc., averaging 5.8 per cent. While it could hardly be said that the fat is the most important of these, yet it is of considerable consequence after all. It has usually been claimed that, while butter-fat is valuable for feeding, there were cheaper substitutes, such as starches and sugars, that could take its place in the ration. While this is true to a considerable extent, yet experience proves that when we attempt to substitute the fat entirely, young animals do not digest their food well nor thrive as they should. A small percentage of fat in skim milk or whey adds greatly to its feeding value, especially for calves. In this connection we are reminded that, in the ordinary whey tank, much of this fat simply forms a scum, that adheres to the tank and becomes a stinking nuisance, afterwards thrown away. However, where the whey is heated, as it should be, and as many factories are proposing to do this year, the fat remains in the whey, and its full feeding value is obtained.

Say that 2½ pounds of butter could be made by skimming 1,000 pounds of whey. Value it at 20 cents a pound, or 50 cents. Consider that the whey unskimmed would be worth 7 cents per cwt., which is a low estimate. One thousand pounds would amount to 70 cents. While we have no definite experiments to base opinions upon, it is probable that this quantity of whey skimmed would be worth 15 to 20 cents less. If so, it would mean that about one-third of the value of the whey-butter made should be taken as repre-

senting loss to patrons in the feeding value of the whey. It is possible the loss would not be as much as this if fed to well-grown shoats or calves.

Experts are investigating the whey-butter question. Until they pronounce the idea successful, factorymen and patrons will do well to defer action. It is curious how the factories take up anything of this kind, on which there is little or no accurate information in favor, and how slow they are to adopt some other improvements, such as cool-curing rooms, on which there is the fullest information. There are no two opinions as to the importance and value of having the necessary facilities in connection with a cheese factory to secure a proper control of temperature. It would not cost very much more than to fit up a factory for making whey-butter. Factorymen, like others, it would seem, are prone to neglect a solid substance and jump after a long shadow.

CLEANING SEED GRAIN.

The thorough cleaning of seed grain is, we fear, not generally so well considered and practiced by farmers as its importance demands. It stands to reason, and carefully-conducted experiments have demonstrated that sound, plump, well-developed seed will, as a rule, under similar conditions of soil, culture and weather, produce several bushels more per acre than will small, light seed of the same variety. This being the case, there is economy in thoroughly cleaning grain for seed, as the smaller and lighter grain is of some use as feed for stock, but is of little or no use for seed, since, if it grows, it grows but feebly, and if it produces, the product is like the seed, light and imperfect, greatly reducing the yield, as compared with that of first-class seed. The too-common practice of running the seed once through the fanning mill is but a shiftless and insufficient preparation, and should be displaced by at least twice cleaning, and that by the strongest blowing capacity of the mill, in order that only the best of the grain be saved for seed, and that all weed seeds be screened or blown out. The precaution is especially advisable this year in the treatment of oats, since the crop last year, from what cause is not fully understood, was a partial failure in most sections of the country, and, although this may have been due to weather conditions at a certain period, which may not recur, the fact remains that an uncommonly large proportion of the grain is light and unsuitable for seed, and for this reason it may be advisable for farmers who have doubts as to the germinating quality of their seed to make a test of samples in soil in a box in a warm place, or between the folds of a damp woollen cloth, between a couple of plates, one inverted over the other. If the test is unfavorable, secure by purchase reliable seed from a favored district. If smut to any considerable extent was noticeable on the oat crop last year, it will pay well to treat the seed for this disease, which is infectious, and reproduces itself. Smut is a parasitic plant, the spores or seeds of which germinate with the oat, grows as a minute thread inside the plant, enters the grain, and matures its seed or spores while the grain is in the milk stage, leaving nothing but foul smut spores and a weakened straw, and thus not only seriously reducing the yield of grain, but increasing the danger of future dissemination of the smut evil. The most effective and satisfactory treatment for smut is by the use of formalin, which may be secured from any druggist. This treatment has been published more than once in "The Farmer's Advocate," but, for the benefit of new subscribers and those who have not filed their back numbers, it is elsewhere repeated.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

PUBLISHED WEEKLY BY
THE WILLIAM WELD COMPANY (LIMITED).

JOHN WELD, MANAGER.

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Address—THE FARMER'S ADVOCATE, or
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BUY A SPRAY PUMP.

Every Canadian farmer who raises an acre of potatoes a year, or has an acre of orchard to care for, needs a spray pump. If he can hire one promptly when required, well and good; otherwise, it will pay to invest. There is no doubt or question in the mind of any well-informed man as to the profits of intelligent spraying. Occasional seasons there are when the results may not be very marked, but there are many more when they will be very striking, indeed. True, some men have sprayed, and yet had blighted potatoes, scabby or wormy apples, or scale-infested fruit trees, but this is no argument against spraying, any more than it would be an argument against keeping rats out of a granary, to urge that one man failed, although he plugged up one of their holes. To keep rats out of a granary, one must close up all the holes. To insure results from spraying, one must spray intelligently and thoroughly, according to the directions of competent authorities. Thoroughness is the keynote of success. Thoroughness is necessary. Thoroughness pays.

Some hesitate to go in for spraying because it seems to involve such complex study. There are so many insects and fungi, their habits and life-histories so diverse, and the methods of combating them so complicated. Those to whom the subject is formidable will find an invaluable help in the spraying calendar and the list of formulae which we publish every year. This is a compact and admirable compendium of detailed instructions, giving time, reasons and formula for the spraying of every Canadian fruit and vegetable crop to which spraying is a benefit. In addition to this, we have arranged for further descriptive articles on the subject, and anyone who preserves the spraying calendar and carefully follows our columns from week to week will find ample instructions. Every fruit-grower owes it, as a duty to himself, to become posted concerning the

insect and fungous enemies of his crops, and how to combat them. For the further encouragement of amateurs, we recall a statement made last season in the Fruit Crop Report, by A. McNeill, Chief of the Fruit Division, Ottawa, to the effect that seventy-five per cent. of the insect and fungous pests attacking the apple can be controlled by three thorough sprayings with Bordeaux mixture and Paris green combined, the first application when the leaf-buds are expanding, the second just after the blossoms fall, and the third a week or ten days later. Nevertheless, it should be recognized that the other twenty-five per cent. may require further applications of Bordeaux and poison, or, in the case of sucking insects, spraying with kerosene emulsion. Make up your mind to try these three applications to start with. Then, with these as a basis to work on, study the spraying calendar and continue in the good work.

Some object that spraying is a nasty job. It is, but don't think of the work. Anticipate the results.

Many complain that it comes in a busy season. So does spring seeding, yet people who quite properly lay great stress on having their grains sown in due season, will suffer the orchard to go unsprayed, thereby reducing a crop that might be worth \$100 per acre to \$25 or \$50, often losing more per acre of orchard than an acre of good grain crop is worth. Does that pay?

Buy a spray pump and be up-to-date. Spray the orchard, spray the potatoes, not merely with Paris green for bugs, but with a mixture of Bordeaux for blight and rot and Paris green for bugs. The pump will also come in handy for whitewashing barns and stables, while, if desired, it may be provided with a special mustard-spraying attachment at a slight extra cost. A good hand-pump outfit for spraying trees, vines, potatoes and, in fact, suitable for all ordinary purposes, may be purchased for from \$25 to \$30, and the profits will often pay for it in a single year. It is a wise investment.

WHAT SEEDS SHALL WE SOW, AND HOW MUCH?

This question, always an important one, is accentuated this year by the unusually high prices ruling for seed. But, no matter how high the price, farmers cannot afford to lessen the acreage seeded to clover and grasses, nor reduce the amount of seed sown per acre. In fact, it should be generally increased. As a rule, too little of this class of seed, for best results, has been sown, and if, owing to the high price, the amount sown is reduced, the apparent saving of expense will probably be more than offset by light crops of hay and pasture in the next year or two. The amount of seed recommended by experimentalists and progressive farmers is so much greater than that sown by the average farmer that it seems to many to be a reckless waste of money; but it should be remembered that the average farmer probably does not give the attention to the preparation of the seed-bed necessary for the successful germination and growth of the seed, and that, under such circumstances, a larger quantity of seed is required to be sown than in the case of a well-prepared seed-bed, as a considerable proportion of the seed is imperfectly covered, or too deeply covered, and fails to grow.

A quantity of seed which in a particularly propitious year proved quite successful, may in an ordinary season give but an indifferent stand, leaving some bare spots where weeds may gain a foothold, and in an untoward year may fail to produce a catch good enough to be worth leaving at all. The difference between liberal and sparse seeding is not infrequently the difference between success and failure. It is penny-wise and pound-foolish to take unnecessary chances in this matter, especially seeing that, with a moderate sowing of grain and a liberal seeding of clover and grass on a well-prepared seed-bed, a good catch is almost sure to be secured. Too many farmers reverse this practice, stinting the amount of clover and grass seed, and smothering it with an excessive mat of thick-sown grain. The result is little or no increase in the yield of grain over a lesser sowing, but greatly diminished crops of hay, with frequently the inconvenience and loss

of outright failure to get a catch. Clover is the most important seed that we put into the ground. Use it liberally, and give it every possible chance.

The commonest meadow seeding practiced is a mixture of red clover, alsike and timothy, and the amount of each per acre recommended is 8 to 10 pounds red clover, 2 pounds alsike, and 5 or 6 pounds timothy. Where alfalfa is sown, 20 to 25 pounds are advised, and, for permanent pasture, at least that much of a mixture of seeds. We would like to see much more attention paid in this country to the seeding of rough lands to permanent pasture. Work the best acres in rotation, and let the stock work the rest. A permanent-pasture mixture that has been recommended by Prof. C. A. Zavitz, of the Ontario Agricultural College is: Orchard grass, 4 pounds; meadow fescue, 4 pounds; tall oat grass, 3 pounds; meadow foxtail, 2 pounds; timothy, 2 pounds; alfalfa, 5 pounds; alsike, 2 pounds; white clover, 2 pounds—making a total of 24 pounds. Buy these separately from the seedsmen and mix yourself. Do not depend on the mixtures advertised by the seedsmen, and do not depend on them to fill a prescription.

The above quantities for meadow-seeding, we know, seem to most farmers unnecessarily heavy, yet those who sow at this rate are not persuaded that it is too much, while many who sow little more than one-half the amount named seem to be satisfied that their seeding is sufficient. If both are extremes, the truth may lie between, and, if proper preparation of the soil and covering of the seed is practiced, the mean between the two may be sufficient. One thing certain is, that the quality of the hay from a thick seeding is generally much superior, being finer and less woody in the stalks, and hence more palatable and nutritious.

THE LEVEL CROSSING'S TOLL OF DEATH.

Discussing the report of the Senate Railway Committee, amending the Lancaster Bill for protecting level crossings in thickly-settled districts, Hon. Senator Ferguson recalled that the railway statistics for 1906 showed that, while 12,952 crossings were unguarded in 1906, only 203 were guarded, as against 230 guarded in 1904. The number of subways had increased by only three in these years, and overhead bridges were reduced from 463 in 1904, to 431 in 1906, showing that no progress was being made in the protection of crossings. The number of people killed at these crossings in 1907 was 73, 74 others being injured. These fatalities were greater, he said, in proportion to population than in any other country to whose statistics he had access. For the years 1905, 1906 and 1907, one person was killed or injured on the Grand Trunk for every seventeen level crossings. The C. P. R., partly owing, no doubt, to the fact that much of its line traverses a less thickly-settled country, offered up only one sacrifice for every 50 altars.

A WORSE NUISANCE THAN AUTOMOBILES.

Editor "The Farmer's Advocate":

There has been a great deal said lately about the use of automobiles, first on one side of the question, then on the other, then both together. Some would have the automobilist have certain days on which to sport around in his horse-scaring machine; others, apparently, would have him stay home forever. And there it goes. However, farmers might just as well be reasonable about this question. The automobile has come to stay—for a while—and the horses and their owners may as well yield to the inevitable, and get used to them. They will pass away after a while and join the long procession of other fads. A few years ago, the mothers of the present generation of horses had their nerves shaken and got into a "fizz" over bicycles. I can well remember the time when a combination of a skittish horse and a bicycle was a nerve-wrecking proposition; but that time is gone, and even a very old-fashioned horse would be ashamed to be seen frightened at a bicycle these days. So take courage, farmers, wives, daughters, aunts and cousins; handle your horse right the first few times it meets an automobile, don't get frightened yourself, and if you have your eye open and your horse in hand, as you should, death and destruction won't be likely to follow.

I do not own an automobile, and unless Carnegie, in place of handing out a library to some town, gives me one, I am not likely to; still, I

think that a man, even if he is rich enough to run an auto, has some rights, and surely the road is free. Besides, he often gives the weary farmer a chance to lean on his hoe and grin as he (the W. F.) watches the sweating autoist tinker under, over and all around the "darn machine," trying to make it start—something it has no notion of doing until the owner's last ray of patience is used up.

But, Mr. Editor, when it comes to "dogs"—mild, quiet, one-of-the-family-at-home, and kills-his-neighbor's-sheep-abroad dogs—then you have a question of live interest to every right-thinking farmer. How I, through my sheep, have suffered from miserable curs that were not worth the stone one should tie to their lean necks to drown them. There are decent dogs, lots of them, but they are not running round the roads night and day seeking what they can destroy. Little good dog-sense as these curs have, their owners usually have less; therefore, I hope you will keep the question talked over occasionally, until they either learn something, or will be forced to take advantage of the wisdom of others.

Your paper is doing a great work for farmers and their families, and I congratulate you most heartily on it.

SCOTCHY.

Cumberland Co., N. S.

THEY'RE TURNING TO THE FARM.

Editor "The Farmer's Advocate":

I cannot resist approving your editorial, "Wealth Versus Good Living." I agree that "A Farmer's Son's" letter, "The Farm Versus the City," is overdrawn. Does the writer realize what his very name means? I will give you one illustration. One day, in the summer of 1892, a flue-corker, Tommy Cunningham, was standing at the door of the Grand Trunk Railway roundhouse, Detroit, when a young man came along looking for work. Tommy sent him to the master mechanic. He came back, saying it was no use. Tom said, "Go back and tell him you are a farmer's son from down near London." He got a job.

Your correspondent's letter might apply to time previous to 1894, but not since. I was a passenger brakeman from 1893 till 1905, and came in contact and talked with more people than he will probably ever see, and I know the usual thought, as he calls it, has changed. Who suffered in the panic in the United States in 1894? Who caused all the riots? Who marched to Washington? Was it farmers? No, they never

have to march. In conversation with an expert carpenter, of Chicago, once, I asked what carpenters would usually make in a year. He said, with holidays, strikes, and lost time, they would not average over \$60 a month, from which the cost of board and lodging must be deducted. Masons got bigger wages, but lost more time. Thousands work in shops in cities who never get as much ahead as would buy a good team of horses. The small-business man has been crowded

sociates brand him as a "grouch." Better eat pork chops at a 15c. restaurant or boarding-house all your life. I never dared tackle steak for fear of lump jaw or horse meat. Oh, to go to the race track and make 10 or 20 dollars! Glorious! Glorious! Come on, Picket, come on! Glorious! You forget a whole year's losses!

When you compare the city and country, take them as a whole; don't pick out a few successful city men and a few farmers. A few years ago farmers were not wanted at the banks. What do you find to-day? Just a few words more. Your correspondent says, when farming is more profitable, capital and labor will go in that direction, just as naturally as water should flow down a hill. How grand! If capital and labor are to turn to farming any faster than they have been doing the last ten years, I pity passenger trainmen. Why, they have gone by carloads and trainloads. Compare Wisconsin, Minnesota, North and South Dakota, Montana, Idaho, Washington, and North-west Canada, with what they were ten years ago. A man said to me, at Moose Jaw, three years ago, "They are coming, and you could not stop them with an army."

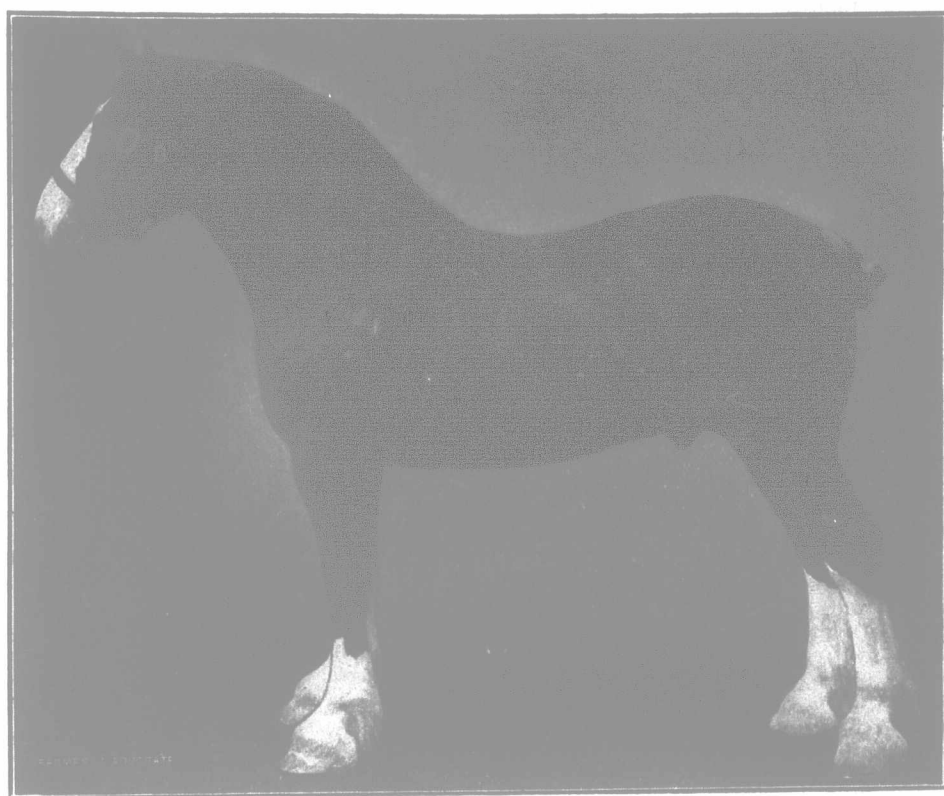
W. F. EDMISTON.

Oxford Co., Ont.

SPIRITED REPLY TO "A FARMER'S SON."

Editor "The Farmer's Advocate":

We are subscribers to "The Farmer's Advocate," and, living on a farm, we always read with interest your valuable farm paper, and are always particularly interested in the correspondence on the various subjects carried on in its columns. I should just like to have a chat with the young man styling himself "A Farmer's Son" (Feb. 27th issue), providing he will not use such ungentlemanly language as he has quoted as used by an Agricultural College Professor, and which he himself endorses as the possible end of a rich farmer, for, when he is speaking through "The Farmer's Advocate," he is in the presence of ladies. I know, by the correspondence carried on through Dame Durden's department, that this assertion is true. The young man who styles himself "A Farmer's Son," I cannot for a moment think, is "True Blue" to his occupation, for, in any line of business, one has to look successful to be successful. And why should we farmers continue to drum on of hard work and little profits, and not, on the other hand, see the beauty of the life we live, and the advantages we have over the people who have the same amount of ability

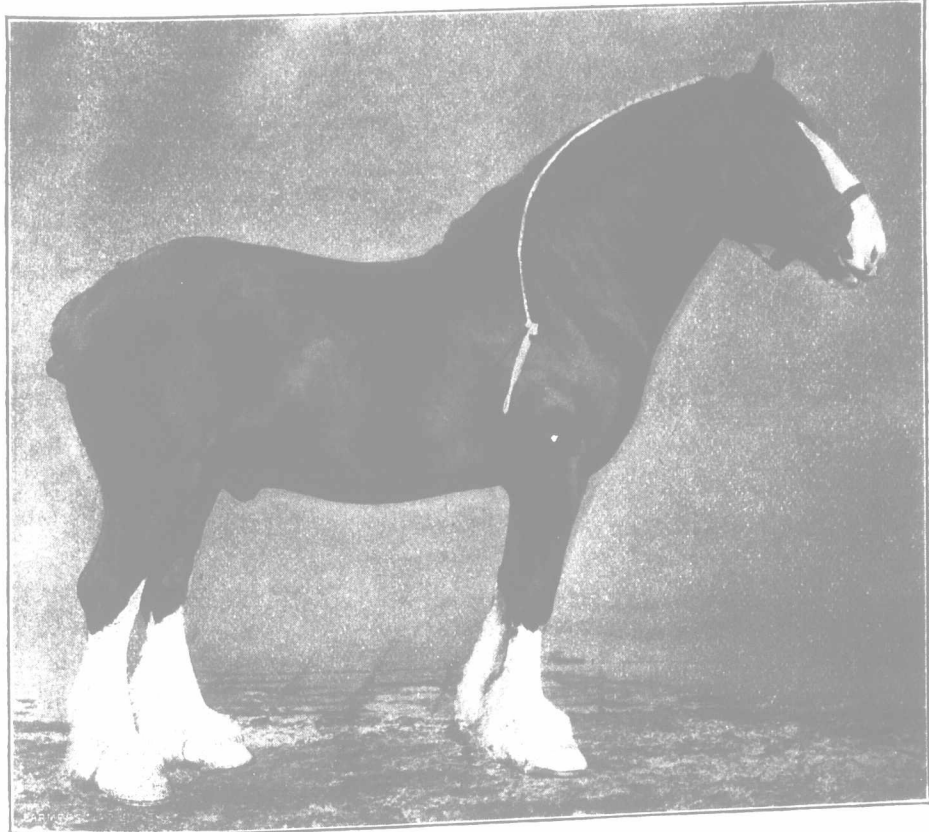


Buteman [6080] (12881).

Clydesdale stallion; bay; foaled June, 1904; sire Pride of Blacon [4072]. First in three-year-old class, Canadian National, Toronto, 1907. Imported by Graham-Renfrew Co., Bedford Park. Sold to James Cowan, Cannington, Ont.

out or forced to sell to the large combines in many cases. Compare these facts with statements in three recent issues of "The Farmer's Advocate": Sheep making 100 per cent. profit; horses selling from \$180 to \$250; cows earning from \$60 to \$100 in a year. Any farmer who is making a drudge of himself and his sons doesn't deserve to get along. He is not reading "The Farmer's Advocate." Some will say, why does not "A Farmer's Son," who is so bright and educated, go to the city? The reason is this, he is ambitious. His very nature unfits him to associate with the young men he would have to come in contact with. Just as soon as he begins to accumulate a little capital in the city, he receives respect from the better class, but his as-

language as he has quoted as used by an Agricultural College Professor, and which he himself endorses as the possible end of a rich farmer, for, when he is speaking through "The Farmer's Advocate," he is in the presence of ladies. I know, by the correspondence carried on through Dame Durden's department, that this assertion is true. The young man who styles himself "A Farmer's Son," I cannot for a moment think, is "True Blue" to his occupation, for, in any line of business, one has to look successful to be successful. And why should we farmers continue to drum on of hard work and little profits, and not, on the other hand, see the beauty of the life we live, and the advantages we have over the people who have the same amount of ability



Baron Howes [7791] (13847).

Clydesdale stallion; black; foaled 1905; sire Baron Hood [6137]. First at Chicago International, 1907; first and champion, Ontario Horse-breeders' Show, Toronto, 1908. Imported by Graham-Renfrew Co., Bedford Park, Ont. Sold to Miss K. L. Wilks, Galt.

FITTING HORSES FOR WORK.

The following article, by G. H. Bradshaw, was contributed to "The Farmer's Advocate and Home Journal," in Winnipeg, last winter. It contains a few points well worthy of attention:

A couple of years ago I happened to call at a place when a large railway outfit were wintering their horses. I looked through the horses and had a talk with the man in charge. The horses were looking fairly well, but not at all fat. I asked how they were fed, and was told they got about a gallon of oats or chop of some kind twice a day; also hay when fed in the morning. They were turned out on the prairie to "paw" all day. Just about sundown they were taken in again and fed grain and hay, for the night. I thought the horses were hardly fat enough, and said so; but the man looked quite surprised and said that if they ever noticed a horse putting on flesh they at once cut his feed down, the idea being to have the horses when spring work started, not fat, but just in fair condition. They would then have their feed increased on getting to work gradually, until soon they were getting all they could eat. This is just the reverse of the course generally followed. Most farm horses get little or no grain all winter, when not working, then in the last month are made as fat as possible. That this is not the good plan is self-evident. Fat does no good, and sometimes lots of harm. A fat horse, conditioned in this way, will surely fail more or less at spring work, whereas the horse which is not fat, but in fair order, will gain on work if the feed is increased.

The next point in importance is to get rid of his hair. About two weeks before you expect to start work get the clippers to work. This beats any way Dame Nature knows of to get rid of the old winter coat. You may think the horse has his new coat, but you will find a big difference between a partially new coat and a clipped one. I never knew a clipped horse who did not gain up on work. This spring I took in a couple of horses three days before I needed them to start disking. I clipped them at once, and now, after disking and harrowing 200 acres they are in better shape than when they started.

About scalded shoulders, I think the shoulders should be bathed, for some time before spring work, with some hardening preparation, such as a solution of tannic acid. If the shoulders are already sore I should wash them off when the horses come into the stable, then grease them in the morning, wet the grease off and dust over with boracic acid, sulphur, or something similar. Black lead applied to the sore part before leaving the stable will cause the collar to have less friction on the sore. You could also cut a piece out of the sweat pad over the sore. If the sore is on the point of the shoulder raise the draft of the traces.

In feeding, be careful not to give large feeds of grain at first; feed often and you will have no trouble. If you put your horses off their feed through over-feeding and keep on working hard, you will have a nice time getting them back to their feed.

I will now just add that I consider cleaning the horses of quite as much importance as feeding them. If you do as I have advised and clip them, never use a curry-comb: use a dry brush first, then wet and rinse the brush in a pail of water, and with the brush just nicely damp, brush the horse all over. This will take the dust all out and won't take five minutes to the horse. Of course, if the weather is chilly you will blanket the horses in the stable.

Give your horses all the exercise possible, for surely if it is true that "Satan finds some mischief still" for

LIVE STOCK.

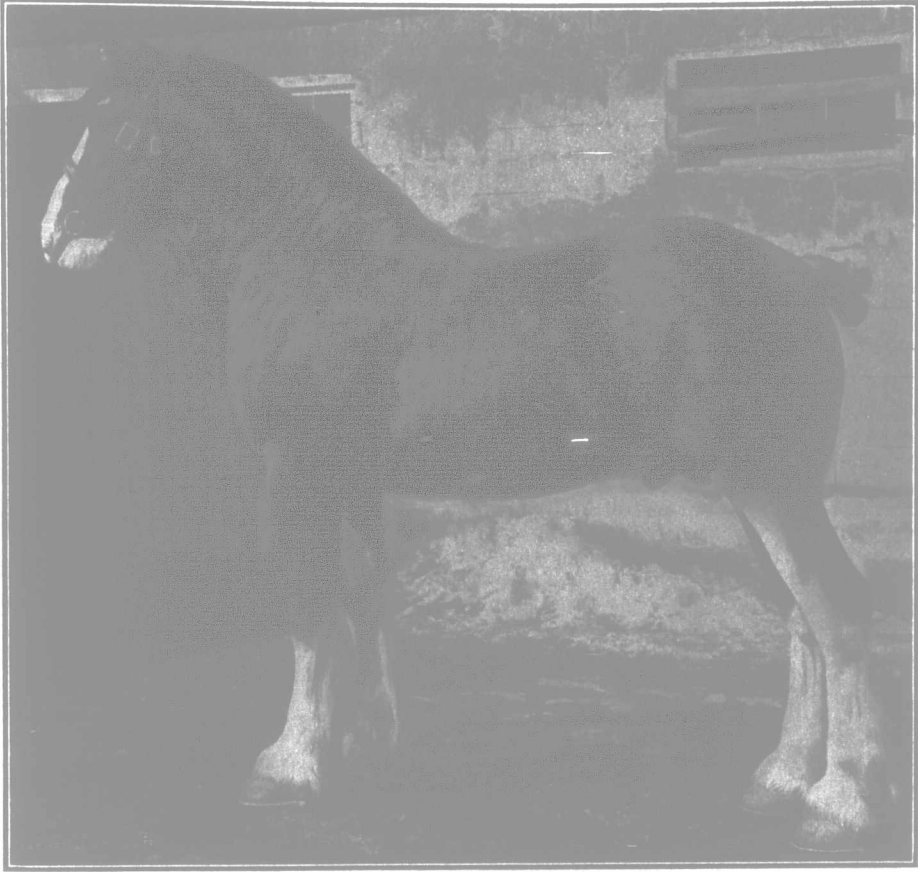
ATTENTIONS LAMBS MAY NEED.

If a twin lamb is not receiving sufficient nourishment from its mother, it can sometimes be helped along by catching other ewes that have more than enough for their own, and letting the hungry one have a pull. Then, if a ewe loses her lamb, she may be made to adopt the little pauper by rubbing her own lamb over it to give it the smell of her own, or by rubbing some of her own milk on its back and rump. But the quickest way, as a rule, to get a ewe to take another lamb is to take the skin off her own and fit it on the lamb to be adopted. The ewe, in such a case, should be tied in a small pen for a few days. If no foster-mother can be found for a lamb that needs one, it may be raised by feeding it from a bottle with a rubber nipple, little and often at first, of the warm milk of a fresh-calved cow, and always from the same cow. Sometimes sickness is caused by the vent becoming clogged by the dung adhering to the wool. This should be removed, and a little oil or grease smeared upon the parts to prevent a repetition. Sore mouth sometimes causes trouble, a sort of fungous growth forming on the lips and gums, called apthæ, or thrush. A mixture of sulphur and lard rubbed into the parts will generally remedy this, or a mixture of glycerine and borax, or a solution of one of the coal-tar dips may be used. Sore eyes are sometimes contracted. This can also generally be cured by using a moderately-weak solution of one of the sheep dips, as Zeno-leum, West's Fluid, or Little's, letting some of the solution get well into the eyes, which will do no harm, but be helpful. Sometimes a lamb will get lame from foul in the foot, and ewes are liable to the same trouble where bedding is scarce. For this trouble, it is a good plan to keep a little powdered bluestone on hand in a small phial, which, dusted on the sores, will generally effect a cure. In the case of the ewe, it is necessary first to trim away the horny parts of the hoof from around the sore. Prompt attention on seeing a sheep lame may save much after-trouble, as, if neglected, it may develop into contagious foot-rot, and spread through the flock. Navel-ill or joint-ill sometimes causes serious trouble in lambs. This is due sometimes to the ewe biting the navel off too close to the belly, or it may be due to germ infection through the navel, and may be avoided by keeping the pen well bedded with straw. If a lamb is observed leaking at the navel, get an ounce or two of formalin from a druggist, dilute with ten parts water to one of formalin, and apply three times daily with a piece of white cotton rag, letting the solution soak into the opening. If the joints are swollen, apply dilute, heated vinegar two or three times daily. In the case of ewes having sore teats, use a mixture of olive oil and glycerine, applied three times a day. While lambs are liable to any or all of these troubles, they may, and generally do, under good management, escape them all, but it is well to know what treatment to use in case such trouble may occur.

THE DUAL-PURPOSE IDEAL.

"Your paper is worth the money many times over, even if it is 'off' on the dual-purpose cow question," writes a Quebec Province subscriber, adding that he believes "when the dairy Shorthorn is bred along dairy lines long enough to produce a large percentage of milkers she will be no more than a red-white-and-roan Holstein."

Even at that she would not be a half-bad cow. Indeed, a cow with the type and dairy capacity of the Holstein, but with a little finer grain and quality of flesh, would be a splendid asset in this country's agriculture. And the best Holsteins to-day are not those of the extreme wedge-shaped, spare-fleshed persuasion, but the more robust, substantial cow, of what is called the milk-and-beef type. Carry this ideal a few points farther; secure a cow with a little broader back, a little more disposition to flesh up when not milking, a little more pronounced inclination to lay the flesh and fat in marbled layers on the back and ribs, and with the grain, flavor and quality for which Shorthorn roasts are noted—whether of all beef or dual-purpose strains makes little or no difference—get a cow with all these attributes, and combine with them, by systematic breeding, selection and management, a large degree of the milking propensity for which the Holstein and the English dairy Shorthorn are noted, and you will have a cow which for net profit and all-round advantages will be hard to beat, a cow that will give a good account of herself in the dairy, and produce calves capable of developing into heaves good enough for any market, but especially adapted to supply the call for baby beef on our home markets. Such a cow when through milking can be fattened into a valuable carcass of beef, while the heifers which do not come up to the mark—and there are these in all breeds—can be beefed for what they have cost to raise. "Impossible," do you say? Faddists think so; experienced breeders know better.



Baron Columbus [6106] (13317).

Bay, white hairs through body; foaled 1905; sire Baron of Buchlyvie. Second at Toronto and first at Ottawa as a yearling, 1906; first at Winter Fair, Toronto, 1907; third at Toronto and Ottawa, fall of 1907. Imported and owned by Smith & Richardson, Columbus, Ontario.



President Roosevelt [7759] (13651).

Clydesdale stallion; bay; foaled May, 1902; sire Marcellus. Third at Ottawa, 1907; second at Ontario Horse Show, Toronto, Feb., 1908. Imported and owned by Smith & Richardson, Columbus, Ont.

idle (farm?) hands to do, he is still more active among idle farm horses.

DROPPED THEM ALL FOR "THE FARMER'S ADVOCATE."

"The Farmer's Advocate" is the best farm journal published in Canada, and certainly, for Canadians, is the best in America. I have taken several, and dropped them all for "The Farmer's Advocate." S. M. MACKENZIE.

PREVENTION AND CURE OF MILK FEVER.

While under the modern system of dairying in this country probably as many cows are bred to produce their calves in the autumn and early winter months as in the spring, a large percentage are yet bred to freshen in the spring, and a chapter on the management of the cow and her calf will be seasonable at this time. And in the first place, let it be said that in regard to this management experience is teaching that, as a rule, the nearer we keep to nature's way the safer and better for both the cow and her calf. Formerly at this season much anxiety was experienced lest what has been mis-called milk fever might cause the death of the best cows in the herd, and a vast amount of valuable property in the form of cows was lost through mismanagement in the care of the cows. The idea that putting the cow on short allowance of feed and dosing her with purgative medicines before calving was necessary in order to avoid milk fever, was long preached and practiced to the hurt rather than the help of the cow, as drenching, in the ordinary way, is always attended with more or less danger of the medicine going into the bronchial tubes and lungs, setting up inflammation and causing death. Then purgation is always more or less weakening, causing a loss of vitality at a critical period, when the demands of maternity require the conservation of strength. True, it is desirable at this crisis that the bowels be relaxed, but that condition may be more safely and sensibly secured by feeding roots, bran mashes and oil meal if the cow is not on grass, where nature furnishes the necessary laxative. Another fallacy formerly held and religiously practiced was to milk the cow out dry immediately, or as soon as practicable, after the calf was born, in order to relieve the supposed pressure, and thus avoid so-called milk fever, a complaint in which not a sign of fever is present, the whole system being cold and partially paralyzed. The proper name of the disease is parturient apoplexy, or parturient paresis (the latter term the more modern). The content of the udder at calving, called colostrum, is provided by nature for the express purpose of opening the bowels of the calf, relieving them of the black fecal matter, meconium, contained at birth, and giving it a good start in life. And the composition of this substance (the colostrum) is quite different from normal new milk a few days after calving, containing a much larger percentage of albumen and ash. Nature's way is that the calf remain with the cow, taking little and often of this necessary medicine, the result being a properly-nursed calf and a cow saved from the collapse liable to occur when the contents of the udder are suddenly removed. Where calves are nursed by their dams on the ranch, milk fever is almost entirely unknown, and rarely does it occur where the calf is suckled by its dam for veal or for show purposes.

The safe way, then, is to either leave the calf with the cow for the first four days, or to only partially milk her out during that period. The alarm frequently felt for the safety of the cow's udder when it becomes unduly large and caked before calving is generally unfounded, as there is really no fever present, the udder being cold to the touch and the cow in perfect health, taking her meals regularly and enjoying them. Veterinarians claim that exceptional cases of the symptoms of milk fever have occurred in the early stages of parturition and previous to delivery, but such must be very rare, and may have been due to some other cause, as in a long experience with dairy cows we have never known a case of the kind.

TREATMENT FOR PARTURIENT PARESIS.

The treatment formerly practiced by veterinarians and others for this complaint was varied and drastic, but all agreed that purgation was a first essential, and many a valuable cow was dosed to death by the medicine going into the lungs, the cow being unable to swallow, owing to paralysis. The application of heat to the body was another form of treatment considered an absolute necessity, and men spent days and nights applying heated smoothing irons to the spine, while in other cases the cow was buried in a heap of heating horse manure, and it must be admitted that these outward applications, when the dosing was not overdone, appeared to be effective, as some cows were saved by the treatment. Some ten or twelve years ago the discovery was made that the ailment could be cured by the injection of a solution of iodide of potassium into the udder, via the teats, and it was found that the more water used in these injections the surer was the cure. Later a French veterinarian, by experimentation, discovered that by filling the udder with oxygen, by means of pressure and without any administration of medicine by mouth, an almost absolutely certain cure could be effected. And later still it was found that by filling the udder with common air, by means of an air pump, marvellous cures were effected, the animal in most cases being restored to normal health in an hour or two, even when prostrated and paralyzed by the ailment, and in some cases dragged to the bone-yard and given up for dead. In the six months' dairy cow test at the St. Louis Exposition, most of the cows were on the ground some time before calving, and some twenty of the cows went down with milk fever. All were treated by the injection of air into the udder by means of a bicycle pump, and nearly all, if not all, were quickly restored and went into the test doing excellent work.

The lessons to be learned from these experiences are, first, to avoid the danger by only partially milking the cow for the first few days after calving, and, secondly, to be prepared with an air pump and teat tube, to be used in a case arising from ignorance or neglect of the

precautions above mentioned. A common bicycle pump, with two or three feet of rubber hose attached, and a teat tube or syphon, which may be had through a druggist or hardware store, or veterinary supply house, is all that is necessary. But care should be taken that the tube is disinfected by immersion in boiling water, or some antiseptic, and that it is oiled and gently introduced into the teat to avoid injuring the tissues. The udder should be filled full of air through all the teats, and the teats tied with tape to prevent escape of air. The udder should then be massaged by the hands to force the air through the passages, and if slackness appears refill with additional air, then wait for results, which will shortly be manifest and realized.

SHOW VS. PRODUCTION.

Editor "The Farmer's Advocate":

I have read with considerable interest your editorials and correspondence concerning dual-purpose cattle, the old-fashioned milking Shorthorn, etc., and it has seemed only wisdom that even the beef animal should be bred so that at least the cows would be able to raise their own calves. My memory does not extend back very far, yet it does not seem to be more than thirty years since the Durham was considered a good general-purpose animal, the steers making good beef and working oxen, and the heifers developing into good family cows, yielding a liberal supply of milk, and besides raising their calves, allowing of some profit from the making of butter for sale. It is probably a misfortune that to-day it is almost impossible to buy a Shorthorn cow that will give enough milk after she has passed a couple or three months of lactation to make it worth while milking her, and the higher you go among the show-yard prizewinners the smaller the production becomes. This evil, and I maintain that it is an evil, has been enhanced, and, perhaps, largely caused by the fact that some of our best (?) breeders have been aiming to fill the eye of the public (and in many cases the public are easily fooled) with a smooth, round, well-turned form. Now the breeding of this type is of course profitable to the large breeder who has a show-ring reputation, and who depends on the sales from appearance to give him his income, but the curse of such a standard comes when the small breeder tries the same type, and finds his selling area much more limited, while he has nothing in the way of production to help out his large maintenance expenses. Yet I am not quarrelling even with this non-productive type of cow, providing she fulfils the requirements of a beef animal, that for which she has been bred, but the foolishness of the present system of judging by form becomes suicidal when it extends to the so-called dairy herds.

To gain some practical information about the dairy breeds, I wrote to three disinterested dairy experts, and it will, I know, be interesting to your readers if I quote extracts from their letters. I may explain that to the first I wrote about Ayrshires, the second about Holsteins, and the third about Jerseys:

1st.—"The Ayrshire breeders have been working so long for show-yard purposes that the milking qualities of the breed have been much neglected."

2nd.—"The Jersey as a producer has suffered at the hands of the modern machine judge. When a judge spends a good deal of his time examining the style of the switch and muzzle, dotting on the color and texture of the skin, it is only natural that he should overlook the udder or neglect to find out whether the animal under consideration gives 5 or 45 lbs. of milk."

3rd.—"Unfortunately for our modern system of judging, the Holstein herd that has the largest number of red ribbons to its credit is not always the best place to go for a large-producing cow. Show-yard form is not synonymous with large production."

The above are from men who are not breeders, but who know what they are talking about, and who hold responsible positions in the Dominion. What are we going to do about it?

I am of the opinion that if we keep live stock at all we should keep pure-breds. Theoretically it is no more difficult to keep pure Yorkshires or Jerseys than to keep scrubs, and surely if good breeding stands for anything, it means cheaper and better production, but if our first-prize animals are behind our haphazard-bred grades or scrubs in production, where is the encouragement in breeding pure? We cannot afford to keep dairy cows in our stables to look at. I, for one, would welcome an awakening in favor of production.

Annapolis Co., N.S.

R. J. MESSENGER.

Canadian breeders are queer mortals. They believe greatly in the "ain fish guts for ain sea maws" policy. If they can get their way, none but Canadian citizens will be allowed to import Clydesdales into the Dominion.—Scottish Farmer.

A cent's worth of bran and oil cake per day will do wonders in lengthening out a weanling calf, loosening his hide, improving his condition and keeping him going in the way he should go, towards well-developed maturity. The cost will be amply repaid. Try it.

Now that the cattle are shedding their hair they will be grateful for a few moments bestowed upon them with vigorous application of brush and card. Laxative food, exercise and grooming will promote the "molting" process, thereby not only improving the appearance of the herd, but substantially increasing their comfort and thrift.

THE FARM.

TIMELY SUGGESTIONS FOR EARLY SPRING WORK, ETC.

The month of March should be, and is with the wide-awake farmer, a very busy month; there are so many things to look after, and see that everything is got ready before the rush of spring work begins.

He who has not already provided a good supply of wood ready for the stove had better be about it at once. One cannot afford to take the time during the summer; and, then, too, it is none of the most pleasant jobs during a hot sultry day. The pile of wood may run low unawares or be exhausted, and the otherwise good-natured housewife heard from in not the most inviting tones. It costs no more to keep a good supply on hand, which can be attended to at leisure time before the busy work begins, and the pleasure of having dry wood to burn goes a long way in keeping the cook in good cheer, and peace and happiness in the family. Attend to this matter now without delay.

The farm implements should be got out of their winter quarters and carefully looked over, and in case any repairs are needed, see that they are made at once, so that when they are required no time is lost. See that the harrows and cultivators are sharpened, so that you can do the best possible work in the least time.

The seed grain should be got ready, and of the best quality, well cleaned.

The harness should receive its annual washing and oiling, and be carefully looked over and all repairs made—"a stitch in time saves nine." All ordinary repairing should be done at home. Any man or boy of ordinary ability, by having a few tools, leather and supplies, which should always be kept in stock, can do most of his work and save much time and delay, as well as adding to his bank account.

Look over the fences and see what repairs are required and make them, or see that the material needed is got on the ground so that you can attend to it sure this spring. Don't let your cattle annoy you again as they did last summer, by getting into the grain and taking you away from your work. You know how vexed you were, and the language made use of, although you were responsible and not the cattle. Repair that fence now this spring, save the crop, be a happy man, and make a neighbor happy perhaps as well.

It is a good time now, if the manure has not already been hauled out, to get it out, while it can be done with the sleigh. Don't do as you did last summer, leave it in the barnyard and lose at least one-half its value. Get it out on the land where it belongs, and make it earn you something.

March is the time to attend to the pruning of that apple orchard. Don't put it off, intending to do it later on—it won't be done. Don't climb in the tree and murder it by cutting out here and there a large limb. Take a ladder and thin out some of the smaller limbs where they are too thick, and you will have finer apples. Feed the orchard, and it will feed you. Spray this spring, and all the insect pests will leave you in disgust.

Just as soon as the land is dry enough to work sow the oats. Don't delay one day. See that you get the water courses opened up well, so that there will be no water standing after a rain. The best crop of oats I ever had was sown in March, and nature was kind enough to cover it with a white mantle. The early sowing, year after year, does far the best, and farmers are losing annually thousands of dollars by tardiness in getting their seeding done. You have noticed that low, springy place which has delayed your seeding every year a week or ten days; see that you get tile in there just as soon as you can, then that part of the field will be dry just as soon as the other. The increased crop from the field by getting the seeding in early may in one season alone repay for the cost of tiling. One seldom gets much of a crop from that wet ground, which is really the best part of the field when tilled. Go to work and tile it, don't be talking about it a whole lifetime. There are very few men, outside of preachers and politicians, that make much money by talking. Farmers can make more money by judiciously planning their work, getting it in time, and always keeping up with the work. I like to see the farmer who is not ashamed to roll up his sleeves and help the men work.

Here in the Niagara District the area for grain is being yearly diminished, and the fruit acreage is largely on the increase. It is a most difficult matter to get the minds of these enthusiastic fruit-growers to think of anything but fruit. During the winter they have been kept busy holding meetings and discussing every phase of their work. They are getting co-operation among the fruit-growers pretty well established, and the time is not far distant when nearly all the fruit will be put up at central packing-houses, as is now done in California. Then, and not until then, can we expect to have a uniform grade of fruit to offer. When that is once established we can expect to see the fruit industry developing with leaps and bounds. Every available acre of land in this Garden of Canada will be needed to supply the demands of the millions of fruit eaters that are destined in the near future to be occupying our great Northwest and Northern Ontario.

How about the fruit and vegetable garden? Do not have it too far away from the house. See to it that you have a good supply of strawberries, raspberries, blackberries, currants, etc. You cannot afford to

sacrifice the health and happiness of your family by depending upon buying them, and then not having a supply on hand half the time. Set some plants every year, so as to have a good supply, and give them proper care and attention and they will do their part in feeding you. Don't forget to see that some early vegetables are started, and that a supply is coming on throughout the season. You can save many dollars at the grocery and butcher's with very little work if you have your garden so arranged that most of the cultivation can be done with a horse. Don't have a little garden adjoining the house and make your wife do all the work.

Dairying is receiving considerably increased attention, along with fruit-growing, depending largely upon the silo for a supply of fodder. Sugar beets and mangolds also receive considerable attention, while turnips are no longer grown.

Alfalfa is gradually being more generally grown, and seems to thrive best on clay soils, that are well drained and rolling. On light soil, such as is adapted for peaches, it does not seem to take kindly.

Asparagus, beets and tomatoes are extensively grown for the canneries. One man here with only 100 acres of land intends setting 40 acres tomatoes this season. Last year he had nearly 30 acres. We are living in the midst of canning factories, and still more going up. We are making a desperate effort to fill the mouths of the hungry with fruit and vegetables. We fruit-growers think it is to our interest, as well as the "other fellows," that all should realize the importance of having a good supply of fruits and vegetables on hand at all seasons of the year. W. B. RITTENHOUSE. Lincoln Co., Ont.

A SEED - CORN PATCH.

Under average methods of seed selection and field conditions, there is from year to year more or less deterioration in all varieties of corn. This "running out" or "losing in quality and producing power" of a variety is largely due to mixing and careless selection.

Corn-growers are also finding that much trouble and loss is resulting from seed corn harvested late in the fall. They recognize that the best results can be obtained only when the seed is selected early and stored in a proper manner. For these reasons, corn-growers should employ methods of selecting, planting and harvesting which will give seed of the highest quality and strongest vitality.

One way in which every corn-grower can do much to improve and maintain the quality in a variety of corn is by planting a seed-corn patch. For this patch, he should select about twenty-five of the best and most typical ears of corn of the seed to be planted this year. A germination test should be made of each ear, in order that no weak ears may be planted. Shell off and discard the small and irregular butt and tip grains. Then shell the ears together and mix thoroughly. At the usual time of planting, plant this corn on the south or west side of the field to be planted with the same variety. This location should be changed if it is near a field planted with another variety. Give this patch usual good cultivation, keeping the ground free of weeds and preserving a loose soil mulch. When the corn is five or six inches high, go through the patch and remove all weak or backward plants. Also, when the tassels begin to appear, go through and remove them from all stalks which are either weak, barren, smutted, badly-suckered, or for other reasons undesirable. When the corn is mature, and not later than October 15th, the seed should be harvested. Select the seed ears from the strongest stalks, with a large leaf development, and those bearing the ears four or five feet from the ground, and holding it in right position.

Through the seed-corn patch, the farmer can do much to fix a desirable type in his corn, and to reduce the number of barren, diseased and suckered stalks that appear in his field. It also furnishes him a convenient place from which his seed corn in the fall can be selected, and he knows that it is from the best seed that he planted. G. I. CHRISTIE. Purdue Experiment Station, Indiana.

GERMINATION TESTS OF GRASS AND CLOVER SEEDS.

Germination tests of grass and clover seeds may be conveniently made between folds of ordinary blotting paper. The seeds should be kept moist, but not wet, and at a temperature ranging between 68 and 86 degrees F. The time allowed for the germination test of timothy seed is 11 days, and for clover seeds 10 days. One-third of the clover seeds remaining hard and sound at the end of 10 days, might be counted as capable of germination. Clover seeds, in particular, germinate less rapidly directly after being harvested than after having a rest period of a few months.

PRACTICAL SUGGESTIONS BY A MAPLE-SYRUP MAKER.

Editor "The Farmer's Advocate":

When tapping a tree, do not remove any bark from the outside; to do so, only injures the tree, and the spout is likely to leak. Bore a thirteen-thirty-seconds-inch hole, about 1 1/4 or 1 1/2 inches deep, where the bark looks the most thrifty and straight-grained, with sun exposure; put in a wedge-shaped spout of good tin. Do not use any metal spouts, as they poison the tree. How do I know it poisons the tree? Look at last year's tap, and if a metal spout was used, you will notice the wood is all dark around the bore, and has not healed over. You ask, Why use that size of bit and a wedge-shaped spout? If the season is long and there is plenty of wind, you can remove the spout and use a half-inch reamer, which will make the sap flow fresh, and you can put the same spout in the old hole.

Be sure to use good tin buckets, and also lids on your buckets, for the sap often runs best when it is raining, and rain-water dripping from the trees makes poor syrup.

Boiling is the next step. Be sure to use an evaporator; you will always see a cut of one in the advertising columns of "The Farmer's Advocate." Have a good-sized one, so as to boil the sap into syrup as fast as possible, for, the more quickly the sap is taken from the tree and made into syrup, the better the syrup will be, and the more syrup you will have. Boil it as thin in the pans as possible—that is, in depth—say, about half an inch in depth, and draw off by a thermometer made for that purpose at 219 degrees, when the thermometer is new; but, as the

ment in some way, as I think, perhaps, improvements could be made. I intend making some experiments this spring, and if we all could be united, and put our experiments together, we could increase the quality of the maple goods, as well as the way to handle the syrup to the market.

The way syrup is put up often makes a difference in the results, and affects the price. I use first-class cans, made square, so I can pack them in a box tightly for shipping, and all of my shipments have got through in good shape, and always bring increased demands for the next season. Last year I had to turn down orders to the amount of one hundred gallons, where, if we were united, we could arrange to fill all orders.

I might also say to R. J. M., who wants to know how to boil sap quickly, not to use a flat-bottom pan, but a good tin pan, with corrugated bottom, and boil the sap about one-quarter to one-half inch above the corrugation, and then have a flat-bottomed pan of small size, say 2 x 4 feet, to syrup off in, for, filling a pan up with sap and boiling down, refilling and boiling down again, and then syringing down, makes the syrup dark; but, to get a small evaporator, or one to suit him best, he will save wood, time and labor, and will make first-class goods.

R. J. M. also asks about boiling sap in a wooden box. If he uses pine lumber, he will have pine syrup, as the pine would taste in the syrup; besides, wood will make the syrup of a poor flavor, as well as darken the syrup. If R. J. M. would like to make good syrup, he must keep his sap and syrup away from all wood.

I hope I have not taken up too much space, and would like to hear what others have to say about the subject I have started on.

Frontenac Co., Ont. H. A. BUCK.

FERTILIZERS: THEIR NATURE AND USE.—V.

By B. Leslie Emslie.

Character of a Soil as Affecting its Fertilizer Requirements.

FORMATION OF SOILS.

Soil formation may be said to take place in two ways, either by a process of disintegration or breaking-down, or by a process of construction or building up. Both these processes of natural change are in constant operation, yet so slow and gradual is their advancement that their effects are almost imperceptible within the comparatively short space of a human life.

The physical character and chemical composition of a soil will naturally depend on the manner and origin of its formation. Soils formed by a process of disintegration will partake of the nature of the rock from which they were derived, and according to other conditions attendant on their formation. Others formed by a process of construction will likewise vary in character for similar reasons. In the latter class are included the alluvial deposits formed by the silt of rivers, etc., excellent illustrations of which may be found in the fertile Deltas, and the swamp and peat soils which have been gradually built up through organic agencies, by the successive growth and decay of mosses and other simple forms of plant life.

EXHAUSTION OF SOIL FERTILITY.

The origin of a soil will then to a certain extent determine its fertilizer requirements, but the nature of the crop to be grown, as well as that of preceding crops, and previous treatment of the soil are also important determining factors. It must also be borne in mind that the larger the crop grown the more fertilizing materials will be removed from the soil. However fertile the soil may be originally, continuous cropping is bound to exhaust it unless measures are taken to restore the fertility.

Many farmers imagine that by occasional dressings of barnyard manure they are fully satisfying their debt of obligation to the soil for the substances which the soil has yielded up to the crops grown thereon, when an intelligent view of the matter would show them that while barnyard manure restores a small proportion of the fertilizing ingredients the larger part has been permanently removed from the soil in the sale of produce from the farm, and in losses by evaporation and leaching from the manure itself. Other farmers acknowledge that barnyard manure alone is insufficient, but maintain that the growth of clover crops adds fertility to the soil. While this is very true with respect to the atmospheric nitrogen which the clover plant assimilates and fixes, clover adds nothing to the soil's supply of potash and phosphoric acid. The growth of clover or any other crop will render some small portion of the soil's stock of phosphoric acid and potash available to the succeeding crop, but at the expense of the aggregate supply in the soil, and sooner or later the stock will give out.

The fact remains that resource must be had to artificial fertilizers if the requirements of the soil for all the elements of fertility are to be satisfied, and the sooner a farmer becomes cognizant of this, the less trouble will we have in restoring a runout soil.

Last fall the writer happened to be discussing the fertilizer question with a farmer who owns a farm of a very light sandy-loam character, when the latter made the remark that if it were not for artificial fertilizers, of which he uses large quantities annually, his land would not be worth while farming.

The same day, in conversation with another farmer,



Sugaring Off.

Photo by R. R. Sallows.

thermometer gets older, you do not have to make it so high, say 218 degrees.

Have the sap to come over the fire cold, and the syrup to come off as far from the fire as possible; back next to the chimney. Have more than one pan to syrup-off in, for the lime from the tree, or sap, forms on the bottom of the syrup pan, and for each day's boiling change the syrup pan nearer the front, and it will boil off of the pan and come out with the syrup. Now use a felt strainer, which will take all this out of the syrup and cleanse the syrup for market. My syrup goes from the machine straight to the market.

Do not allow the sap to get in contact with wood, for if you do it will darken the syrup. As I have said, use tin spouts, tin buckets, tin pails, tin tanks, and keep the sap from the sun. Have the storage tanks on the north side of the syrup camp, and keep them covered, not tight, but have the cover larger and up about four inches from the top of the tank, so as to allow the cool air in under the lid.

Always gather the sap in the day as soon as you can, so as to boil it all into syrup the same day. Do not wait till the buckets get full before gathering, but gather often, and you will have better syrup.

Now, I am not writing this from any literature, but from my own experience, and some other manufacturer might make a little more improve-

he happened to inquire whether the farmer used artificial fertilizers, to which question the latter replied to the effect that there was too little money to be made at farming to warrant its expenditure for fertilizers. Here are two different opinions, the one made by a man who had used fertilizers and proved their value, and the other by a man who knew nothing of the benefits to be derived from a judicious use of fertilizers, and who at the same time made the statement that farming was unprofitable.

RETURNS FROM MONEY INVESTED IN THE SOIL.

Many farmers would get higher interest on their money if deposited in the shape of fertilizers in the soil than if they placed it in the bank, the interest being paid in increased crops. The returns are surer than if the money were invested in a gold mine, yet how few seem ready to make the investment!

FORMS IN WHICH TO APPLY FERTILIZERS UNDER SPECIAL CONDITIONS.

Something has already been said in previous articles on the adaptability of certain forms of fertilizers to certain classes of crops and soils.

For instance, peat or swamp soil containing naturally a large quantity of vegetable acids ought not to receive fertilizers of an acid nature; hence, for such soils, basic slag as a source of phosphoric acid is preferable to acid phosphate, the free lime in the slag having a tendency to counteract the acidity of the soil. On soils inclined to excessive moistness sulphate of ammonia will be a more suitable form of nitrogen than nitrate of soda, on account of the sulphate of ammonia being less soluble and thus not so easily leached out.

On peaty and swamp soils, or where a large amount of vegetable matter is present in the soil, very little or no artificial application of nitrogen will be necessary.

For potatoes, tobacco and sugar beets, potash ought to be applied in the form of sulphate of potash.

RULES TO BE OBSERVED IN PURCHASING ARTIFICIAL FERTILIZERS.

The purchaser ought always to demand a guarantee of the percentage contents of the various fertilizing ingredients in the fertilizer, as well as of the materials used as a source of the same. In nitrate of soda and sulphate of ammonia the nitrogen content will have to be guaranteed. In basic slag, of the total phosphoric acid, 80% ought to be soluble in citrate solution, and the sample should be of such fineness that 75% to 80% of it will pass through a sieve having 10,000 meshes per square inch. In superphosphate (acid phosphate) the water-soluble as well as citrate-soluble phosphoric acid will have to be guaranteed. The potash salts, both muriate and sulphate, contain 50% actual potash, and when purchased in the original sacks (225 lbs.) the purchaser may be confident that the goods are genuine.

Potash manure salt (containing 20% actual potash) has been in some cases sold by adventurers as sulphate of potash, hence the necessity of being assured as to percentage! Kainit contains 12.4% actual potash.

RULES TO BE OBSERVED IN MIXING FERTILIZERS

Basic slag or quicklime ought never to be mixed with sulphate of ammonia, since the free lime of the former will combine with the sulphate part of the latter, and the valuable ammonia will escape as a gas. This loss is readily detected by the smell of the escaping ammonia.

A mixture of acid phosphate and nitrate of soda ought not to be stored for a long time in sacks, as the latter will rot away.

Acid phosphate may not be mixed with quicklime,

since the lime by combining with the acid will render the phosphate less soluble.

The potash salts may be mixed with all other fertilizers, but a mixture of basic slag and either kainit or potash manure salt ought not to be kept over 24 hours, otherwise the mixture will become hard as cement.

RULES TO BE OBSERVED IN APPLYING FERTILIZERS.

1. Bone meal and basic slag, on account of their comparatively slow action, often give better results if applied in the fall, so that their phosphoric acid will be more readily available in spring.

All phosphatic and potassic fertilizers may be applied in the fall or early spring without danger of serious loss by leaching, but nitrate of soda, on account of its great solubility, ought to be applied after growth has commenced.

2. The fertilizers ought, as a rule, to be broadcasted either by hand or fertilizer distributor, being then lightly cultivated or harrowed in. It is not necessary to plow down fertilizers; they will find their way down readily enough.

3. A one-sided fertilizer ought not to be given, but a fertilizer containing due proportions of all necessary ingredients, since phosphoric acid cannot replace potash, or vice versa.

4. Sulphate of ammonia ought to be applied just before seeding, but nitrate of soda, as above indicated, ought to be given as a top dressing, and preferably in two or three applications.

5. One must also remember that potash and phosphoric acid are firmly retained in the soil, whereas nitrogen is more or less readily lost. If, owing to special weather conditions, the potash and phosphoric acid fail to act in one season, they will nevertheless prove effective during the succeeding one.

QUANTITIES OF FERTILIZERS FOR VARIOUS CROPS.

As already noticed, there are so many factors in determining the fertilizer requirements of a soil, that it is quite impossible to prescribe accurately the exact quantities to be applied without a knowledge of the soil's condition, previous treatment, etc. However, it ought to be remembered that any excess of potash or phosphoric acid will be retained in the soil for the use of the succeeding crop.

The following prescriptions for some of the most important crops may be taken as approximately the requirements under average conditions. The smaller quantities may be applied along with a moderate dressing of barnyard manure, or where the soil is in a comparatively high state of fertility:

GRAIN CROPS.

Nitrogen . . . (75 to 120 lbs. nitrate of soda, or
(50 to 100 lbs. sulphate of ammonia.
Phosphoric (200 to 300 lbs. acid phosphate, or
Acid . . . (250 to 400 lbs. basic slag.
Potash . . . (75 to 120 lbs. muriate of potash, or
(75 to 120 lbs. sulphate of potash.

POTATOES.

Nitrogen . . . (150 to 200 lbs. nitrate of soda, or
(120 to 220 lbs. sulphate of ammonia.
Phosphoric (300 to 400 lbs. acid phosphate, or
Acid . . . (350 to 500 lbs. basic slag.
Potash . . . (150 to 250 lbs. sulphate of potash, or
(150 to 250 lbs. muriate of potash.

BEETS AND OTHER ROOT CROPS.

Nitrogen . . . (100 to 150 lbs. nitrate of soda, or
(80 to 130 lbs. sulphate of ammonia.
Phosphoric (300 to 500 lbs. acid phosphate, or
Acid . . . (350 to 600 lbs. basic slag.
Potash . . . (100 to 150 lbs. muriate of potash, or
(100 to 150 lbs. sulphate of potash.

CORN.

Nitrogen . . . (100 to 150 lbs. nitrate of soda, or
(75 to 120 lbs. sulphate of ammonia.
Phosphoric (300 to 400 lbs. acid phosphate, or
Acid . . . (350 to 500 lbs. basic slag.
Potash . . . (100 to 150 lbs. muriate of potash, or
(100 to 150 lbs. sulphate of potash.

ALFALFA, CLOVER, PEAS AND OTHER LEGUMES.

Nitrogen . . . (None necessary unless on very poor
(soil.
Phosphoric (250 to 400 lbs. acid phosphate, or
Acid . . . (300 to 500 lbs. basic slag.
Potash . . . (125 to 175 lbs. muriate of potash, or
(125 to 175 lbs. sulphate of potash.

PASTURES AND HAY.

Nitrogen . . . (100 to 200 lbs. nitrate of soda, or
(80 to 160 lbs. sulphate of ammonia.
Phosphoric (250 to 350 lbs. acid phosphate, or
Acid . . . (300 to 400 lbs. basic slag.
Potash . . . (80 to 150 lbs. muriate of potash, or
(80 to 150 lbs. sulphate of potash.

CABBAGE AND OTHER SUCCULENT VEGETABLES.

Nitrogen . . . (250 to 400 lbs. nitrate of soda, or
(200 to 350 lbs. sulphate of ammonia.
Phosphoric (400 to 600 lbs. acid phosphate, or
Acid . . . (500 to 800 lbs. basic slag.
Potash . . . (150 to 250 lbs. muriate of potash, or
(150 to 250 lbs. sulphate of potash.

FRUIT.

*Nitrogen (75 to 150 lbs. nitrate of soda, or
(60 to 120 lbs. sulphate of ammonia.
Phosphoric (300 to 500 lbs. acid phosphate, or
Acid . . . (350 to 600 lbs. basic slag.
Potash . . . (200 to 300 lbs. muriate of potash, or
(200 to 300 lbs. sulphate of potash.

TOBACCO.

Nitrogen . . . (150 to 250 lbs. nitrate of soda, or
(120 to 200 lbs. sulphate of ammonia.
Phosphoric (250 to 400 lbs. acid phosphate, or
Acid . . . (300 to 500 lbs. basic slag.
**Potash . . . (160 to 320 lbs. sulphate of potash, or
(320 to 640 lbs. sulphate of potash-magnesia.

*Where green manuring, or plowing under of a cover crop, is practiced as a means of supplying the valuable humus and nitrogen, very little or no artificial supply of nitrogen will be necessary.

The writer trusts that in the scope of these articles he has succeeded in helping some to a clearer understanding of the nature and uses of commercial fertilizers, and that the knowledge gained will be turned to profit, for probably partly through this means will be ushered in the time when "the land shall yield her increase, and the desert shall blossom as the rose."

What Seeds to Sow and How to Sow Them.

It is the aim and desire of "The Farmer's Advocate," not only to keep its readers posted concerning the latest developments in agriculture, as revealed by reports of investigation at public experiment stations, but also to enable enterprising commercial farmers in every section to compare notes one with another. We have always made a strong point of the observation and experience of practical men, and, in pursuance of this policy, have secured from farmers all over Canada letters discussing seeding preparations and methods, as practiced on their own and neighboring farms.

W. H. TEETER, Norfolk Co., Ont.—The leading varieties of grain grown in our section are oats, barley, peas, rye, buckwheat and fall wheat. There is no spring wheat. The best yields of oats and barley are obtained from a mixture of about equal quantities of each, two to two and a half bushels per acre. Other grains do well in this township, and are extensively grown. This was always considered a grand fall-wheat section, but the crop is not now so extensively grown. Quite an acreage of turnips and mangels are grown for stock-feeding, and they are considered an essential part of winter stock feed. Every farmer grows potatoes, a few quite extensively, but mostly just for home use, and there are nearly as many different varieties as there are farmers. Beans of all kinds are grown, but mostly for the canning factories, and do well. With a good many farmers corn is coming to the front, both for the silo and as a grain and fodder crop. It is surely the best-paying crop a farmer can raise

in the southern counties, in what we might call the corn belt of Canada. For husking, in this county, the flint varieties are used exclusively; for silo-filling, the Learning, the Red Cob, the Wisconsin Dent, and a number of others. I believe there are more of the Essex Dents grown than any other. Siloes are becoming quite numerous in the township, and new ones are being built all around us, principally of cement. Numerous as they are, however, I do not think that 15 per cent of the farmers have them in this township. Red and alsike clover, with timothy, are grown for both pasture and hay. Millet and Hungarian make a good substitute when the hay crop is likely to fall short; they can both be sown quite late, after we have seen how the hay crop is coming on, and both make excellent feed for horses or cattle. Alfalfa, the king of all legumes, is the best of crops for green feeding. If a farmer has three or four acres, he can begin cutting by the first of June, and keep right on feeding green feed until the last of September, and I do not think there is another crop so cheaply raised and so easily handled, and cattle will not tire of it. We are feeding it now, and have been feeding it for three winters, and cannot speak too highly in its favor. We have always sown it with a light crop of barley, preferring barley to seed with, as it ripens and can be taken off earlier than other spring crops. Other crops for feeding green are good. Peas and oats, sown together, give good results, but a piece of alfalfa you will have year after year, without the labor and expense of reseeding every spring. Drilled corn makes good green feed, and comes in handy to help out poor pasture for a while, but

alfalfa makes the very best feed that can be raised. We have been trying it for 10 years, and are well pleased with it, having now 18 acres of meadow. We use the usual implements—cultivators, two-furrow or three-horse plows, two-horse corn cultivators, weeder, etc. Not many are using more than three-horse teams.

* * *

W. C. GOOD, Brant Co., Ont.—Very little spring wheat is grown hereabouts; what there is is of the Goose variety. A number of varieties of oats are grown, and both common Six-rowed and Mandscheuri barley. Carrots and sugar beets are not much in evidence. A very good variety of Swede turnip is the Twentieth Century. A mixture of oats and barley for feed is growing in popularity. A bushel of each grain per acre is sufficient; on rich ground, three pecks of each is enough. Siloes, I think, are slowly increasing in number, and the area of corn increasing proportionately. Red clover and timothy are the usual seeds for hay or pasture crops. Alsike is used considerably, and some alfalfa. About six pounds per acre of a mixture of clover and timothy is the usual rate of sowing. Alfalfa is growing very slowly in popularity, the slowness depending largely on the difficulty in getting and maintaining a stand. It seems to be fairly easily winter-killed, and is easily crowded out by many of the grasses. Either spring seeding, with a light nurse crop of barley, or August seeding on summer-fallow, are both satisfactory. I have seen nothing but maize used for summer green food. Disk harrows, spring-tooth cultivators and smoothing harrows are the common imple-

ments of tillage. Three-horse teams are fairly common, but the usual two-horse team is as yet almost universal.

* * *

J. H. BURNS, Perth Co., Ont.—Judging by the signs of spring now in the air, the time for spring seeding will soon again be here. As seeds of all kinds are scarce and high-priced, it is of more importance than ever to use the most careful selection as to kinds and quantities, and to make use of the best available information at hand. There is no better way for this than by comparing notes in "The Farmer's Advocate." Spring wheat, which in the early days was a sure stand-by, is now a thing of the past in this locality. The only approach to it is Goose wheat, and there is very little of it grown. Banner oats take the lead, and about two bushels per acre are sown. Mandscheuri barley, the same. Very few peas are sown, but various kinds, and probably Golden Vine is most common. In mangels, the Yellow Globe Intermediate seems to be gaining on the Long Red. Very few carrots are grown, and any good variety is sown. Turnips, Sutton's Champion. Siloes are not increasing in number very fast, but probably there will be more corn sown this year for fodder, as many were impressed with its value last year. In seeding for hay, 4 to 6 pounds red clover are used, 2 or 3 of alsike, and 3 to 6 of timothy. Usually this mixture is also used for pasture, but some few improve it greatly by adding a few of some of the pasture grasses, as orchard grass, tall oat grass, or meadow fescue. One pound of white clover per acre, we think, would improve either. Some few try alfalfa, but the only fair crop I know was on light soil. Very few green crops are grown, but some use peas and oats. Most rely on early corn to help out pasture. The usual method of preparing the land for seeding is on fall-plowed stubble, spring-toothed, or, if sod, disked in spring. It is not ridged in fall, nor the dry parts dragged in spring to prevent baking. Seed is usually drilled in with two horses, though many are using three horses on cultivators or disk.

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OLD FARMER, Middlesex Co., Ont.—Very little spring wheat is grown in this neighborhood. What I have known, the Goose variety, was sown as early as possible, two bushels per acre. In fact, it appeared to thrive best to be mudded in. In my experience of raising spring wheat, sixty years ago, when it was a sure crop, before the midge put it out of existence, we sowed it before the frost was all out of the ground. It was sown right on the plowed ground and harrowed, and I have frequently known the harrow to grate on the frost. It appeared to delight in a firm soil. Sow oats on fall plowing, well disk-harrowed, and, if weather permit, roll, and then drill two bushels per acre; do not roll until the grain is well up. The same tillage will answer with barley, and the same quantity of seed per acre. Sow both oats and barley, if season and weather be favorable, from the 1st of April to the 20th. I would consider it simply a matter of one's own convenience which of the two to sow first. Thirty-five and forty years ago it was the rule to sow peas previous to barley or oats, even when the land was not in first-class tilth, as long as they could be well covered. The earliest-sown peas escaped the mildew, but the pea weevil put a stop to early sowing, as the blossoming season was favorable for the insect. Then, late sowing—as late as the middle of June—was quite prevalent for some years, but a really good crop was seldom harvested. Mildew often killed the vines when quite green. Mangels, sugar beets and carrots should be sown from the 1st to the 15th of May, in good rich ground, brought to an excellent tilth by repeated disking, harrowing and rolling. Thirty to forty years ago I used a two-moulded plow that made one drill at a time, having a gauge or marker that marked the width of the drills. Of course, these drills were raised and sown with an ordinary turnip drill, and, in my opinion, were much easier cleaned than on the level. At present the root crops are sown from an ordinary grain drill at various distances apart, according to the number of tubes in the drill, but wide enough for a two-horse cultivator. A ten-tubed drill, planting or sowing from the third tube on each side, makes drills three feet apart. The young men of the present day use a cultivator that takes the earth away from the plants, leaving a small shallow furrow that assists in hoeing, leaving a receptacle for weeds and plants hoed out. Two pounds of seed per acre is abundance for carrots, two and a half for mangels and beets, if the seed be genuine. In my experience, turnips are the surest crop; freest from lice, fly and beetle; sown from the 15th of June to the 1st of July. Have had excellent crops as late as the first of July. I fancy the quality of the turnip is much sweeter a little on the late side. I am speaking of Swedish turnips, which I believe to be the best and most nutritious of the root variety, and when fed judiciously will not taint milk. As to the white or soft variety of turnips, they may be sown any time during June or first week in July. They are fed up before winter.

about a pound and a half of seed per acre is enough, providing other conditions are favorable. There is more time to prepare the land for turnips than for mangels, beets and carrots, and no one need be afraid of losing a crop by too much tilth. Unless a small patch for early potatoes, we strive to plant the tubers on or about the last week in May, generally after the corn is planted. Marks are made with the drill three feet apart, the same as planting corn. A light furrow is opened on the mark; good large cuts are planted in these furrows, dropping two seeds together eighteen to twenty inches apart. The potatoes are then cultivated during the season with the corn, which is generally planted on sod. Very little corn is husked now in this part of the County of Middlesex, and very little difference is practiced in the tillage of corn for ensilage and husking. If it were not for the ravages of a gray grub that cuts off the plant just under the surface of the ground, sod is preferable to any preparation I have tried for a large crop of corn, but often a crop is completely ruined by this insect. Last season, a few fields in this neighborhood, even the second planting, were comparatively a failure. Various plans are recommended to get rid of this pest: Sowing bran sweetened with molasses, plowing the sod in the fall, to be a little late in planting. The bran cure may be efficient in a garden or small plot, but in a large field hardly practical, say ten acres; you have your mixture prepared and sown, a heavy shower follows your bran and molasses, the rain has washed your sweetening from the bran, and certainly the grubs will prefer the fresh young corn to the dry bran, especially if the green is adhering to it. To plant a little on the late side, is this far reasonable, that the grub turns into a moth, and does no harm in that state. The fall plowing certainly exposes a number of young larvae to the cold of early winter and spring frosts. I have had the first planting wholly destroyed, disked the land over again, and not a plant touched the second planting. The general plan of planting corn in this locality is by the grain drill, in rows three feet apart, as above described in planting potatoes. Average about four stalks to the yard; harrow once as it is coming through the ground; cultivated with two-horse cultivator; cut with a corn harvester. I consider emmer an excellent crop. It has been grown in this locality more or less for a few years, generally mixed with oats. Have known seventy bushels per acre, mixed, but think they have experimented with it at the Ontario Agricultural College, Guelph, and prefer sowing it alone. It is earlier than oats, and a little later than barley. All farm stock are fond of grain and straw. In regard to mixing grains, some of my neighbors are delighted with mixing oats and barley, a bushel of each to the acre. This appears to me to be a fair proportion, and if a species of oats could be found to ripen with the barley, or a kind of barley to ripen a little on the late side to suit the oats, then this mixture would do very well; but I have not seen this yet. Such was claimed for the Daubeney oats. We had them last year, mixed with barley; they were too green. We tried oats, emmer, peas and Goose wheat. Of course, the oats were badly blighted, the emmer was good, the Goose wheat away behind. The peas were ripe before the others, and were fallen down, most of them, on the ground; scarcely a pea was seen when threshed. Those who find a mixture of grain yielding more than when sown alone, I advise to continue with their mixture. But I would prefer to sow two bushels of barley and two bushels of oats, and have a better return than from four bushels of mixture. We generally sow about a bushel and a half of clover and a bushel and a half of timothy to eleven acres, or about 15 pounds mixed. If two years in grass, pasture first year, and the second crop will be the best quality of hay. When I mentioned clover mixture, I should have said, one bushel common red clover and one-half bushel alsike. We have tried a few pounds of orchard grass, but, unless sown very thick, it grows in bunches. Alfalfa is not largely sown as yet in this locality, but indications are that it will become so in the near future, if what was sown last spring comes through the winter well. Our soil, for many miles around, is a rich clay loam, but, when well drained, should be suitable for alfalfa. For early green feeding, oats and peas come about as early as tares or anything I have seen tried. Those who have siloes, prefer silage to any green fodder. Some farmers are intending to have a silo built for summer use to supply succulent food in the fall, when pasture fails. I am convinced that the only way to get the full value of a crop of corn is by silage; and our own Canadian corn makes the best silage. The common implements in general use in this neighborhood, after the land is plowed, are the disk harrow, two and three-horse cultivators of different manufacture, and the ordinary light smoothing harrows. Have not seen nor heard of four or five horses being used. Have not tried harrowing on the part or parts of a field to prevent baking; our fields are pretty well drained. I think the practice prevalent in this locality, and perhaps in other places,

of rolling immediately after sowing, does harm. If a heavy rain should fall before the grain is braided, a crust is formed that retards growth to a considerable extent. Rolling after the grain is up two or three inches, breaks the small clods, and otherwise breaks any baking that might have taken place. Especially have I observed this in rolling corn after planting.

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H. R. McDERMID, Glengarry Co., Ont.—Among the cereals, oats takes the lead as to acreage. Banner and Siberian, in the order named, are the most popular varieties. Mensury barley is largely grown, or frequently oats and barley mixed, in the proportion of two of the former to one of the latter. Few farmers attempt wheat now. Peas are also out of favor. Emmer and buckwheat are grown to a limited extent. Mangels, sugar beets, carrots and turnips are grown to a limited extent. Probably sugar beets are growing in favor for feeding hogs. Hardly enough potatoes for local use are raised. Oats are sown two and a half bushels to the acre, barley two, wheat one and a half, emmer two, buckwheat three pecks, and potatoes twelve to sixteen bushels. Corn for husking is probably on the increase, but it is not largely grown. Every farmer grows more or less corn for fodder. White Cap Yellow Dent, Giant Prolific, Leaming and Mammoth Cuban, in the order named, are the favorites. Siloes are increasing, and the area under corn will be increased this year. Corn is usually sown in drills, about half a bushel to the acre, but sometimes in hills, when less than half that amount will do. Red clover, from two to eight pounds, and timothy, from four to ten pounds, per acre, mixed, are predominant. Some farmers add a couple of pounds of alsike, especially if the ground is low-lying. Silage is usually pastured on second-year meadows or old pastures that have run to natural grass. Though alfalfa has been grown to a limited extent for a number of years, it is not increasing in favor. It is sown along with a light nurse crop, about 18 pounds to the acre. For summer feeding, corn is most largely used; mixtures of oats, barley and peas, or any two of these; also alfalfa, or buckwheat, are used to a certain extent. For spring cultivation, disk and spring-tooth cultivators are the favorites. We also use King cultivators, weeders, smoothing harrows, and rollers. The hoe-drill is the most largely used. Harrowing early in the spring is practiced by the best farmers. Three-horse teams are largely used for plowing, but not many farmers use more than two for other purposes.

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In taking up the work of seed inspection for 1908, I find that quite large quantities of Northwestern oats are being imported into some sections of Ontario for feed. There is a great danger that some of these oats may be bought and used for seeding purposes. In many cases they are frozen oats. One sample that I have seen will, I am sure, not germinate 10 per cent. Then there is the danger of introducing stinkweed, ball mustard, and other noxious weeds. Even if used for feed, they should be finely ground, to make sure of crushing the weed seeds. I hope that you will give this matter prominence in "The Farmer's Advocate."

T. H. MASON.

Seed Inspector for Western Ontario.

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"OKA," Two Mountains Co., Que.—As we are already (and, as usual) watching "The Farmer's Advocate" to compare our work and practices of the spring season with the methods of other Canadian districts, and especially with the doings of the good Ontario farmers, I venture to give you a glimpse of a few of our ways and conditions for the present and coming season. The seeding season in field culture is generally opened by April 20th, commencing with wheat, oats and peas; then, about May 1st, come the potatoes, mangels, carrots, and a few minor plants for fowl. Fodder or silage corn is sown next, about May 10th, and beans May 15th to June 1st. Buckwheat, except small plots for bees, is only sown during the latter end of June, for fear of frost. Some farmers sow turnips for the market until July 4th. This late seeding gives rather a small root, but of uniform size, juicy, well fit for harvesting in November, and for market purposes. Future meadows receive a seeding of 21 pounds an acre, of one-third clover and two-thirds timothy seed. Pasture seed is more complex, and is often made of a mixture of timothy, Kentucky blue grass, Canada blue grass, orchard grass, red-top and white clover seeds, the proportion of each varying with the nature of the soil and its exposure to the sun. The best farmers here use red clover, lucerne (alfalfa) or rape as green fodders for milch cows, swine and poultry. Alfalfa is becoming popular, and thrives well, provided the land is deep, well drained, and is sufficiently protected against strong winds, so that the coat of snow in winter is uniform and leaves no plots uncovered. If snowdrifts gather into heaps, these leaving uncovered plots on the ground, they will freeze hard, and lucerne roots, especially if young, are likely to

be destroyed. The Oka (La Trappe) Agricultural School or Institute has about twenty acres of an apple orchard producing yearly two very good or three very fair crops of lucerne hay. Do you think an ordinary good and deep soil can feed to profit for years, and without danger of exhaustion, both lucerne meadow and apple orchard? Perhaps some of your correspondents have experience in the matter. The same institution is trying to substitute a kind of chickling vetch (*gesse des bois*; *latyrus sativus*) to corn for silage purposes, but last spring the crop was much damaged by frost. An attempt is also made to introduce Pannonine clover (*treffe de Pannonie*), which is a hardy perennial, and was successful last year. Until now, progressive farmers fill up their siloes with corn, but we regret to state that siloes are not yet so numerous as they should be. Still, some feeders are quite satisfied with corn left in large bunches in the field in winter, cut and steamed just before feeding. One word about another subject before closing. I see farmers taking every morning the horse manure and bedding and throwing it systematically in the gutter behind the cows, where it lies all day, and is removed at nightfall, after it has soaked (and well soaked, too) all the urine and liquid of the day. Do you see any objection to this practice, which is certainly a straw-and-litter-sparing one, and also relieves the farmer of providing for more costly absorbents, or for tanks to gather the liquid?

[Note.—Alfalfa should not be left in the orchard, as, by reason of its deep-ranging root system, it tends to rob the trees of plant food and moisture, and may eventually cause some of them to languish or die outright. The practice of using the horse litter as an absorbent in the gutters is an excellent one indeed, the only objections being the work of handling, which is well repaid, and, in a dairy stable, the slight odor arising, for which reason some other absorbent is preferable if it can be had.—Editor.]

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A. P. HILLHOUSE, Brome Co., Que.—Brome County comprises one of the Eastern Townships, which is almost entirely a dairy district, grain-raising being followed on a very limited scale. Pastures are mostly, of necessity, permanent, on account of the rough, stony soil, which prevents any system of rotating meadow and pasture land. Wheat-growing is becoming less and less every year, not one farmer in twenty now growing even one acre. Oats are the staple grain crop, probably one-third of the farmers not growing any other grain. The average quantity of seed oats sown per acre is about four bushels, which is far too much, and a great many farmers are now finding that, by properly fanning up and selecting their seed, sowing one-half this quantity, they are getting better results. Barley is also on the decline, very little now being sown. Corn for ensilage is being grown more and more each year, and every well-appointed farm has one or more siloes. Fifteen or twenty years ago, corn for husking was grown quite extensively, but now it is scarcely grown at all for this purpose. Mangels, turnips and potatoes are grown quite extensively, and usually very successfully on this soil. Small patches of tobacco are grown by some French-Canadian families. The time of seeding here, of course, depends some on the season, but usually progressive farmers have their seed all in the ground during the first two weeks in May. In seeding for hay, timothy is almost exclusively used, and is sown at about one peck per acre, with the addition of five or ten pounds of red clover seed. Difficulty, some seasons, is found with the clover winter-killing, consequently it is not risked as a crop alone, but, being sown with the timothy, it more than pays in the good years for what is lost in the poor. Alfalfa is never sown here, the general impression being that it cannot be grown successfully. This impression may be wrong. If care were taken to see that it had all the conditions necessary for successful growing which is given to it by those by whom it is successfully grown in other parts of the country, it might do very well. Corn is about the only crop grown for feeding green in summer. Spring-tooth and disk harrows are about the only harrows used for tillage. We do not find it necessary to harrow the land before seeding to prevent baking. The nature of the soil is light and mellow, never becoming hard and baked. A very few teams of three horses are used for harrowing, but not generally. Dairying, hog and poultry raising are the all-important parts of farming here, the chief object of the farm being to supply suitable food and conditions for these animals. This has been done quite satisfactorily in the past, giving prosperity to by far the greater part of the farmers. Markets were never better, prospects never brighter than at present, but there is a serious menace to the future of these industries in the labor problem, the nature of the work demanding skilled hand labor which cannot be easily substituted with machinery, as can be done where other branches of farming are followed more extensively.

C. C. CRAIG, Prince Co., P. E. I.—The leading varieties are somewhat numerous in this section. Of wheat, perhaps the leading variety is the White Russian; Campbell's White Chaff is also a great favorite here, and, I may say, with favorable conditions, we can get more bushels per acre of this wheat than any other sown here. The millers like it to grind, and it gives a large percentage of flour from the bushel. The Red and White Fife are also sown by many; also a few other new varieties, but none are better or as good as the ones mentioned. Two bushels per acre is considered about right for sowing. The joint-worm made its appearance for the first time in this section last year, and, as a consequence, a small acreage will be devoted to the growing of wheat this season. Wheat is generally the first sown. In referring to my diary, I notice it was the 22nd of May I sowed wheat last year, but last spring was very backward; the 10th of May is considered a good time to sow wheat. We have sowed as early as 26th of April. Oats come next. Four bushels are sown on a poor or light soil, while 3, and even 2½, is considered plenty for good strong land. As to varieties, it would be difficult to name them all. Of white, we have the Banner, Egyptian, Ligowo, Sensation, in the order named. On our own farm we have been sowing a white variety which has given excellent satisfaction, but don't know the name of it. Two years ago I sowed 18 bushels, by weight, of this oat on a six-acre field, and I had 300 stooks, which, when threshed, made 456 bushels of marketable oats. Have had, on other times, 80 bushels to the acre. Last year was the first we ever had it to lodge and lie down; the crop was an extra one. The old Island Black and Black Tartarian are also grown successfully here. Barley is not grown very much, except as a mixed feed of oats, barley and peas—2 of oats, 1 of barley, and ½ bushel peas, per acre. When barley is sown alone, 2 bushels per acre is used. The two-rowed barley is being more used of late years, for the reason that it is more easily bearded. Some dairymen are now plowing up a part of their pasture land in July and sowing peas; they are cut and cured in the fall, and housed for feeding milch cows in winter, instead of ensilage, and this feed is giving excellent satisfaction, while it takes little or nothing from the land. Mangels and sugar beets are not much grown around here, as they, like the corn, cannot be depended on. Carrots are very scarce, except in gardens, but turnips are grown extensively, and with a good measure of success. The seedsmen advocate sowing four to five pounds of turnip seed to the acre, but one pound is all that is necessary, if pains is taken to get it on evenly. The two-drill horse seeder will pay for itself in one season, if two or more acres are sown. About June 20th is a good time to sow turnips. Potatoes can be planted any time after the ground is fit in the spring, up to July 1st. The old Blues or McIntyres are the potatoes in this part of the Island at least. Corn in general is a failure on Prince Edward Island, and siloes are one here and none there. The area of corn is not likely to be increased this year. Eight to ten pounds of timothy, and eight of clover seed, is sown per acre for hay, but a much heavier seeding might be profitable. Have had no experience with alfalfa, and very little is sown in this locality. For summer feeding, use peas and oats, or vetches and oats, sown pretty thick, and as early as possible; then the big white turnips, with some grain, fed to the right kind of a cow, and you are bound to get the milk. The disk harrow and the seeder, and spring-tooth harrow, combined, together with the gang plow and spike harrow, when needed, are the implements now generally used in preparing the land for a crop. The method of preparing the land for a grain crop: Sod is plowed in the fall, if possible, and not too early in the spring the disk harrow is put over it the way it is plowed first, then angled with the same harrow, then angled the opposite way. After all this, I go an extra cut the way the field is plowed on the backs of the lands and the dead furrows, and the field is left almost as level as if plowed around, which is, I think, a slow and tedious way to plow a field. The seeder (principally broadcast in this locality) comes next, and the grain is at once covered by the spring-tooth harrow connected. A scratch or two with a spike harrow, and rolled, should leave your field in good shape to produce a crop of grain. If the land is bound up with couch-grass, it will require more cultivation. Stubble land is prepared in about the same way. Two and three horse teams are most used on our farms; those using four horses are an exception, and I never saw a five-horse team at work here on a farm.

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J. H. GRISDALE, Agriculturist, Central Experimental Farm.—Of the different cereal crops grown in the Eastern Provinces to-day, oats take first place. The yields of this crop are, on the average, far below what they should be. This is due to two main causes: First, insufficient preparation of the soil; second, the use of poor

seed. The seed-bed for oats, as for other cereals, should be solid; that is, there should be no large spaces occupied by air beneath the surface, as is always the case in a poorly-tilled field. The well-tilled field, if sown early, is likely to give a very fair, if not a heavy crop of oats, no matter what the season. The varieties most to be recommended are Banner and Siberian, with Abundance, Ligowo and a number of others competing for third place. The quantity of seed to sow per acre depends to a considerable extent upon the type of oat sown, but, generally speaking, where drill seeders are used, from 2 to 2½ bushels per acre gives the best results. I have, however, seen equally good returns from a seeding of one bushel per acre, but I am not yet prepared to advocate such thin seeding for this cereal. Early-sown oats are, as a rule, the heaviest yielders, but it is possible to sow too early. A safe rule is to sow as soon as the land is really fit. Very few, indeed, are the farms where some field intended for grain is not ready earlier than the balance of the farm, and it is a safe thing to say that, whatever the cereal crop to be sown, that is the field to sow first.

Wheat.—The spring wheats likely to do best are Red Fife, White Fife, and Preston. As a rule, wheat will stand earlier seeding than other cereals. But as it requires a richer, stronger soil than oats, and since such soils are not infrequently rather slow in getting into shape in the spring, it is not safe to make a rule of always sowing wheat first. Probably the best returns come from sowing about one bushel and a half (1½) per acre, although a somewhat thinner seeding has proven quite satisfactory.

Barley.—Barley needs a strong, fertile soil, with a good solid seed-bed. It may be sown a little later than either oats or wheat, but in the case of this cereal, as with the others, early sowing practically always adds to the yield. The varieties that have been found most advantageous are, of the six-rowed, Mensury and Odessa, and of the two-rowed, the Canadian Thorpe, Sidney, and Invincible.

Peas.—Peas are practically a neglected crop at present in Eastern Ontario and Quebec. For some reason or other unknown to the writer, it is found impossible to secure paying yields of this most valuable crop all through Eastern Ontario and Quebec. Where sown, however, the Blue Prussian and Crown are likely to prove satisfactory.

Buckwheat.—Buckwheat frequently does well in these Provinces. It should be sown either at the same time as the other cereals, or be left until July, or the very last days of June, at the earliest. Late May or early June sowing is likely to prove unprofitable.

Emmer and Speltz.—Emmer and speltz are not to be recommended for this district, since other grains produce heavier crops, easier to handle, and more satisfactory to feed.

Beans.—Beans are cultivated to a very small extent indeed throughout Eastern Ontario and Quebec. The small white bean is the variety that has given the best satisfaction.

Mixed Crop.—Not infrequently a mixture of grains proves more profitable than similar grains grown separately. For instance, oats, barley, wheat and peas, sown together, yield usually more pounds of feed per acre than would any one of the four grown separately. A good proportion in which to mix these grains for a mixed crop is equal parts, by weight, then sow at the rate of about two bushels per acre. On light soils, a mixture of equal parts peas and oats is likely to prove more satisfactory than the four-parts mixture above mentioned. In the latter case, about two bushels and a half of seed per acre should be used.

Roots.—Mangels, sugar beets, turnips, potatoes and sugar mangels all succeed exceedingly well in Eastern Ontario and Quebec, where a fair preparation of suitable soil has been made. The best location seems to be a meadow, plowed in the late summer. Previous to seeding, barnyard manure should be applied at the rate of 12 to 15 tons per acre. The land should then be re-plowed and worked up as early as possible in the spring, where sugar mangels, mangels or beets are to be sown, or left until a few weeks later where turnips is the crop selected. After thorough spring cultivation, the land should be ridged in ridges about 8 inches high and two feet apart, then well rolled and the seed sown at the rate of about 8 pounds per acre, of any one of the three—mangels, sugar mangels, or sugar beets. As soon as the roots may be seen in rows, the hand wheel hoe should be run along the same in order to break the crust, preserve moisture, and kill any small weeds. The varieties most to be recommended are: Late Past mangels, White or Rosy sugar mangels, and Danish sugar beets. The yield from the sugar beets is not likely to be as large as that from the mangels or sugar mangels, but the quantity of forage produced being greatly superior, it is a valuable crop for dairy cows and pigs, the sugar in the roots being to be recommended. The seed should be sown at not over two-thirds as deep as the other roots, in the case of the others. The

preparation for turnips is practically the same as for mangels, but they should be sown anywhere from the 10th to the 20th of June, or even later in the case of Swedes, and later still if white turnips are the ones to sow. Carrots should, like mangels and sugar beets, be sown as early as possible; the earlier, the better.

Corn.—Corn for summer soiling and ensilage should be sown on meadow or old pasture land, plowed either early in the fall or immediately before it is desired to sow the corn. If plowed the previous summer, thoroughly worked during September, ridged in October, and left thus through the winter, probably as good results may be anticipated as from any possible treatment of the soil. If heavy clay land is being used, then late fall plowing is permissible; but where light soil is to be put under corn, and summer plowing has not been done, the sod should be turned down only a few days before seeding. Manure should have been applied before plowing, and the plowing done with a very shallow furrow, immediately after which the land should be rolled, disk-harrowed lengthwise, crosswise, and on the angle, then worked with a common harrow until a solid seed-bed is secured. Sow in rows 3½ feet apart, or in hills at least three feet apart. Give nothing but level cultivation; ridging corn in Eastern Ontario and Quebec is an almost certain antidote to success. The varieties to be recommended are Longfellow, Leaming, Angel of Midnight, Early Mastodon, White Cap Yellow Dent, and North Dakota. Larger varieties are not advisable. Too large a proportion of small varieties is not likely to prove profitable. A division of the land, in the proportion of about two parts Longfellow, four parts Leaming, and two parts Early Mastodon, has given entire satisfaction here. The sowing of these varieties mixed together is not likely to prove very satisfactory, although sometimes done with fair success. For grain, Longfellow, Angel of Midnight and Quebec Yellow are likely to mature. Leaming ripens about three times out of four, but the small yellow corn commonly grown for grain throughout Quebec is the variety that always ripens.

Clover and Grass Seeds.—Red clover, alsike and timothy are undoubtedly the most to be recommended for hay in this region. Brome, Red-top, June grass, Western rye grass and some others have their places, but they are quite secondary to the first three mentioned. For temporary pastures, timothy, alsike, alfalfa, red clover and June grass make a good mixture. Sow about equal weights of each, say 4 pounds of each variety. For permanent pasture, the same mixture, to which should be added brome grass 10 pounds, White Dutch clover 3 pounds.

Alfalfa.—Alfalfa is becoming more and more talked of and known and grown in these Provinces, particularly in Ontario. Attempts to grow this crop in Quebec have in most cases proved abortive, probably the most striking exceptions to this rule being the College Farm at Oka, and the farm of Mr. P. Clarke, at Deschenes. Immediately across the river from Deschenes, on the Experimental Farm here, alfalfa has been grown successfully for many years. It is now considered as a staple crop, but is not left down for any great length of time. Each year about 20 acres is seeded to alfalfa, but not to alfalfa alone, since a little red clover and timothy are usually added, although certain areas are seeded to alfalfa exclusively. Only fertile fields should be seeded to alfalfa, and then only after certain crops, as, for instance, potatoes, roots and corn. If, however, land has been summer-fallowed the previous year, alfalfa may be expected to succeed thereon. Land upon which it is intended to sow alfalfa must be well drained, either naturally or by tile drains. The water level should be at least three feet below the surface, and at no time of the year should water lie upon the surface. Alfalfa may be sown with a nurse crop (oats, barley or wheat), at the rate of 20 to 25 pounds of seed per acre, the large quantity being sown on poorer land.

Soiling Crops.—Soiling crops are receiving more and more attention in Eastern Ontario and Quebec, where dairying is the staple industry. The setting aside of ten or fifteen acres of land on every dairy farm upon which to grow soiling crops, cannot be too highly recommended. Whatever area it is possible to devote to these crops, should be selected as near to the buildings as possible. It should be divided into three equal sections, and a three-year rotation followed thereon. First year: Corn, say Longfellow, Leaming and Early Mastodon, sown at intervals of a week. Second year: Mixture of peas and oats, 3½ or 4 bushels per acre, and 10 pounds of clover seed per acre sown; one acre as early as possible, and then an acre at week intervals until the first of June. Third year: Clover, cut for one year, the sod plowed down the following spring, and corn sown thereon. Red clover is the variety to use. Banner Oats and Blue Prussian peas or Crown peas will prove satisfactory. The varieties of corn as mentioned above. This plan has proven highly satisfactory wherever the writer has seen it tried.

Implements and Tillage.—Let it be urged that

it is impossible to overmagnify the importance of early seeding for cereals, just as it is impossible to lay too much stress upon the absolute necessity of thorough cultivation. Upon these two great principles depends the success of our field husbandry. It seems to me, therefore, to go without saying, that a great rush should be made with the work in the spring, and to this end I have found it eminently advantageous to use as large implements as possible. The folly of one-horse harrows, one-horse mowers, etc., is greatly improved upon by two-horse machinery, but, where three-horse machinery can be used, it will be found eminently satisfactory, exceedingly profitable, and quite practicable, even upon our small eastern farms, as the writer knows by experience. By the changing from small to large implements here, savings of from 20 to 25 per cent. in the cost of cultivation were achieved. The most striking changes I would recommend for agricultural implements would be the two-furrow plow, the large disk harrow, the wide rake, the wide mower (6 to 7 feet), and the wide binder.

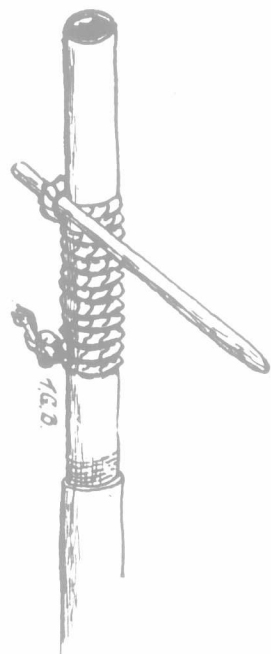
TREATMENT FOR SMUT IN SEED GRAIN.

Every year smut spores exact more or less heavy toll in our fields. To guard against it, endeavor to sow clean seed; i. e., seed from a smut-free crop. This is not always easy to secure; hence, as a precaution, it pays to treat the seed grain with a fungicide before sowing. Three different lines of effective treatment have been recommended to destroy the smut spores of seed grain, viz., hot water, bluestone, and formalin. Formalin is rather the best of all, and, of the two ways of applying it, viz., sprinkling and immersion, the former is favored by the consensus of opinion. Spread the grain out on the barn floor and sprinkle until quite moist with a solution of a pound of formalin (a pound is a little less than a pint) in thirty-two to thirty-five gallons of water. Shovel over a few times, applying the solution while the shovelling is going on. When all is well dampened, shovel the grain into a conical heap and cover with old blankets for two or three hours. Then remove the blankets and spread the grain out to dry, stirring occasionally. It is better to mix each time just enough to treat the grain that can be sown within three days. After treatment, keep the grain free from reinfection by contact with bins, sacks or spores in which smutty seed has been contained.

It is well to remember that either formalin or bluestone, used too strong, seriously weakens the vitality of the kernel. In 1905 a subscriber reported having used three-quarters of a pint of formalin in five gallons of water to treat seed wheat, with the result that he had to sow his field again. Used according to directions, the formalin treatment is practically harmless to the seed, and the prevention of smut represents an item that will usually repay the small expense and trouble of the precaution. A pound of formalin, costing about 75 cents, and procurable at any drug store, will, according to Dr. Fletcher, suffice for 27 bushels of seed oats, or 32 of wheat.

TO TURN A PIPE WITHOUT WRENCH OR TONGS.

The accompanying illustration shows a device to hold or twist a pipe or bar when a wrench or pair of pipe tongs is not at hand. It is simply a rope three or four feet long. Tie a loop at one end and a knot at the other. Beginning with the knot end, twist the



rope around the pipe. A stout stick, a bar or a piece of pipe is then placed in the loop end and turned gently until the slack is out of the rope. You then have a hold on the pipe you wish to turn that is limited only by the strength of the rope and the length of the lever. A chain may be used instead of the rope if it is more convenient.

COST OF PRODUCING FARM CROPS.

The average of a few results from work done at the Central Experimental Farm, at Ottawa, show the cost per acre of producing various crops—including rent of land at \$3 per acre, manure at \$3 per acre, manual labor at \$1.50 per day, teams at \$3 per day, and single horses at \$2 per day—to be as follows:—

Crops.	Cost per ton of feed.	Cost per acre stored ready for consumption in each case.
Corn for ensilage	\$ 1 50	\$25 53
Roots	1 69	41 68
Oats	12 03	13 53
Barley	11 95	13 45
Peas	16 51	13 85
Horse Beans	2 21	25 16
Rape	93	12 71
Pumpkins	1 43	25 50
Hay (average of all sorts)	3 52	9 23
Mixed grain for feed	6 46	16 20
Rye for green feed	3 13	15 65
Sunflower	6 30	23 59

THE DAIRY.

WHEY BUTTER.

"Meantime the milk in spacious copper boils;
With arms upstript the elder rustic toils,
The young assist, the curdled mass to squeeze,
And place in cooling shades the new-made cheese."

Times have changed since the days of which the poet speaks. No longer is the cheese made in large copper boilers. No longer does the man on the farm toil, "the curdled mass to squeeze." Neither does the farmer's son assist in placing the cheese in "cooling shades." This work is done (in Canada) almost entirely in factories, and by skilful cheesemakers. There appears, however, to be a feeling in the country that the cheesemaker is not getting out of the milk all that he ought. This is no reflection on the skill of cheesemakers. The competition in some cases from "condenseries" is making the patrons of cheeseries very uneasy. They want more money for their milk than is paid at the ordinary cheese factory. The manufacture of "whey butter" is a possible additional source of revenue, in the minds of some patrons.

At the outset we should advise caution. Before any great sum of money is expended in a plant for the manufacture of whey butter, the whole question needs to be carefully considered. We have factories in both Eastern and Western Ontario, fully equipped with apparatus for the making of this butter. If two factories were taken as experimental stations—one in the East and one in the West—during the coming summer, these in co-operation with the dairy department of the Ontario Agricultural College, would be able to solve most of the problems in connection with this question, and might possibly save many dollars to over-anxious patrons and cheese-factory owners. If at all possible, hog-feeding experiments should be conducted to ascertain the relative value of whey for feeding purposes before and after separating. The investment for a factory already equipped with winter buttermaking appliances would be very small. If not so equipped, it would mean an expenditure of at least \$600 for one separator, churn, etc. For a large factory there ought to be two large separators, which means, together with churn, etc., a capital outlay of not less than \$1,000, assuming that the factory has room for the plant without making any addition to the buildings. Then there is the labor. We were recently asked if a man could make whey butter in addition to making the cheese in a "ten-cheese factory." We replied that if the man were already fully occupied with the labor of making cheese, to ask him to make the "whey butter" in addition would be too much. There is also expense for fuel to run the separator, churn, etc., wear and tear on machinery and other incidental expenses. Assuming that there is all in the plan which its most ardent advocates say there is, it seems to me that a factory handling less than 10,000 lbs. of milk daily would not find it profitable.

We doubt if whey-butter could be exported with profit. In fact, it may be necessary to prohibit its export in order to guard the reputation of Canadian creamery butter.

It seems to us that if the plan is to become at all common, it should be restricted to local trade, or supplying patrons of factories with butter at times when there is difficulty in getting butter.

We find that this question has "bobbed up" every few years since 1895, when the first experiments were made at the Dairy Department of the O. A. College with reference to "whey-butter." At that time we were able to make something less than 2 lbs. butter per 1,000 lbs. whey during the summer. The quality was fair, but lacked grain, body and keeping quality. Experiments have been made since then from time to time, but the results were never very satisfactory. We could not sell this butter to our regular trade. It might suit a certain trade, but was never such that we could put our brand on the butter.

During the past two months (Jan. and Feb. '08) we have made three experiments with the following results: From 7,298 lbs. milk were made 735 lbs. green cheese. The whey remaining was separated, and the cream

ripened and churned in the usual way. The product was 20½ lbs. butter, or at the rate of 3 lbs. butter per 1,000 lbs. whey. Stated another way, there was made at the rate of 5½ lbs. butter per ton of milk. This yield was somewhat greater than would be got under good conditions in a summer factory. This milk tested over 4.0 per cent. fat, and was in all cases two or three days old before it was made into cheese. In consequence of this, the per cent. of fat in the whey tested higher than usual, viz., very nearly .3 per cent.

The quality of the butter was fair when first made, but developed a strong flavor in about ten days or two weeks. The first lot made from whey, after coloring the milk for cheesemaking, was of a "bricky" color. It is doubtful if marketable butter can be made where colored cheese are manufactured.

We should counsel "making haste slowly" in this matter. If the milk be properly cared for on the farm, does not test over 4 per cent. fat when mixed in the fat, and if handled by a skilful cheesemaker, we doubt if it will pay to make whey-butter, except when butter is very scarce and dear. There is also the temptation to skim some of the milk before making it into cheese, in addition to skimming the whey after curdling the milk.

H. H. DEAN,
Professor Dairying.

O. A. C., Guelph, Ont.

GO SLOW ON THE WHEY-BUTTER PROPOSITION.

Editor "The Farmer's Advocate":

In reply to your request for an opinion on the whey-butter question, I would say that my advice to all who have applied to me so far is this, that I do not think we have sufficient information on this subject to warrant the expense which is necessary to fit up a factory for the proper manufacture of whey butter.

It is quite likely that if any quantity of whey butter is manufactured in Canada there will be a demand for legislation to make the branding of whey butter as such compulsory. It may be necessary to meet this demand in order to protect the creamery industry.

Much has been made of the fact that a sample of whey butter was given first prize in competition with one other exhibit of creamery butter, at an exhibition in Eastern Ontario last fall, but it is not generally known that the judge and others who examined it stated that the creamery butter was a very poor sample.

In view of the lack of information on this subject, I propose as early as possible this coming spring to make some careful experiments in order to secure some data as to the probable returns from the manufacture of whey butter, and also as to the quality of the butter, including composition, flavor and keeping quality. My advice to the factories at present is not to rush into this matter until it has been carefully investigated.

Those engaged in the manufacture of cheese sometimes forget that they are indirectly interested in the success or failure of the buttermaking industry, and anything which will injure the buttermaking industry will also, to some extent, injure the industry of cheesemaking.

J. A. RUDDICK,
Dairy and Cold-storage Commissioner.
Ottawa.

RE THE PRICE OF BUTTER IN ENGLAND.

The Liverpool correspondent of the London Times says large wholesale dealers in that city declare there is absolutely nothing in the suggestion that there is a corner in produce. It is a bona-fide scarcity, due to absence of rain in Australia and New Zealand. Numbers of retailers are selling below cost, sometimes as much as 2d. per pound. Another cause of the scarcity, though less considerable, is the effect of the new Milk Blended Butter Act. Now that "milk-blended" butter has to rank, so to speak, with margarine, there has been a large temporary withdrawal of the article from the market, and people have been compelled to buy the genuine article.

POULTRY.

INCUBATION HINTS.

Editor "The Farmer's Advocate":

The season is approaching when poultrymen are thinking of setting hens, and, as so many seem to have chicks die in the shell, would suggest, as a good plan to overcome this, that, on the 18th or 19th day after setting, a piece of flannel be dipped in some warm water and spread over the eggs. This tends to soften the skin under the shell, thereby making it easier for the chick to get out. One thing more. Instead of feeding so much soft food to young chicks during the first two weeks, give them plenty of small flint or grit, feeding them canary seed and plenty of green food finely chopped. If this were done, we would hear less of chicks dying with the scours. They should also have clean water in front of them all the time. If a brooder is used, put the drinking water inside to keep it a little warm. I rather like the incubator and brooder, as there is not the bother with the lice, and no old hens to look after. Of course, the brooder should be kept in a sheltered place, and something put around it to keep the chicks from straying very far away when young.

Sask.

PERCY L. STUBBS.

SOMETHING ABOUT ARTIFICIAL INCUBATION.

SOME ANCIENT HISTORY RE INCUBATORS, FROM BIG TO LITTLE—WHAT SORT OF INCUBATOR TO BUY—WHEN BOUGHT, WHAT TO DO WITH IT—WHAT SHOULD BE PUT IN THE INCUBATOR—ADVICE TO FARMERS.

By A. G. Gilbert, Manager Poultry Department, Experimental Farm, Ottawa.

Artificial incubation is sometimes spoken of as a lost art! We read from a report of a United States Consul at Cairo that, long before the Christian era, artificial incubation was successfully practiced in Egypt, and is yet, to a greater or less extent. We read that from 300,000 to 600,000 chickens would be hatched at one time in one of their huge incubatories! These incubatories, which were frequently two stories high, were only operated during the months of February, March and April, when minimum temperatures prevailed. The incubatories had no thermostats or thermometers. The operators were so skilled that, on entering the building, they would know whether the temperature was correct or not. More, they could tell, by feeling the eggs, whether they contained live germs or not. This expert knowledge was carefully handed down from father to son. Heat was generated in ovens situated in different parts of the incubatories. A few days before the date of the great hatching-out, word would be sent through the neighboring densely-populated communities, apprising the people of the exact day the chickens would be due. When hatched, they were sold at \$1.50 per hundred to the assembled multitude, who took them away and reared them. This at once smacks of strong chicks which came from strong germs. The chicks must, undoubtedly, have been strong and vigorous, or the people would not have bought and successfully reared them year after year. The operators of the big hatchery did not worry about the future fate of the youngsters. The purchasers reared them most successfully, and simply in cages which held 20 or 30 chicks each.

The foregoing particulars are sparse, and to a certain extent indefinite, but space cries halt. They are, however, interesting and instructive, and convey a moral worth heeding.

FROM BIG TO LITTLE.

Here we are to-day puzzling our brains over little boxes, varying in size from 25 x 35 inches to 40 x 55, or a little larger, which we call incubators, and worrying ourselves about the dreadful things that follow their use. Just fancy a 1900-year-old mummy unrolling himself and gazing on our little incubators, and reading the doleful accounts which we give of failure after failure on the part of us twentieth-century operators, in our frantic efforts to hatch out and rear two hundred chicks! What would he say? I think, as he looked at our incubators, he would say, "You are trying to get a mighty lot into very small compass." And so we are. And this brings us right down to the incubator of to-day.

THE INCUBATOR OF TO-DAY.

The incubator of to-day is, without doubt, the result of earnest and close study on the part of skilled and brainy men of certain great laws and their operations, compressed into limited space—always a very difficult undertaking.

I stood beside a steam fire engine working under heavy pressure at a large fire in one of our great cities some years ago. I watched with fascination the small fire in the furnace making steam, which, aided by wondrously-proportioned machinery, caused the engine to pump a powerful stream of water on the fiercely-burning mass of fire in the tall building. Wonderful sight! The element fire, in such small proportions in the fire-box, combating the same element in huge proportions—the one under perfect control, and useful; the other as yet uncontrolled and terribly destructive. And when it was subdued, it was the small fire which defeated the great big one! Great fact! Fire vanquishing fire!

And so our incubators to-day may be small and comparatively insignificant, but they represent much brain force, close observation and expert knowledge, compressed into small compass. And with the aim (a) that they may be convenient to handle, (b) light in weight, (c) cheap in price, (d) easily operated by man, woman, bright girl or boy; (e) so that to-day artificial incubation may be indulged in by peer or peasant, as pastime or livelihood. The difference between the Egyptian method and ours of to-day is simply defined. The Egyptian experts made the people come to their huge incubatories. Our experts of to-day bring the incubators to the people—in smaller size, it is true, but in order that those who wish may have one in parlor, cellar or garage.

WHAT SORT OF INCUBATOR TO BUY.

As long as it has a good reputation, and of first quality, the incubator, to my mind, takes second place. What is first import is to place

in the incubator eggs with strong germs, which will make strong chicks. Of this again. At present we consider what sort of an incubator should be purchased. In twenty-five years of poultry-keeping I have had a heap of experience with both hens and incubators, and I have learned much about both as hatching mediums.

In procuring an incubator, it will be well to be guided by the following points:

Do not purchase a machine that is sold simply because it is cheap.

Buy one that has a wide and good reputation. Incubators, like individuals, have reputations. This reputation is seldom hid under a bushel.

Do not ask only one person, because he may be prejudiced; did not go by the instructions, but put red flannel here, and a bit of paper there, etc.; had his notions as to cooling and turning the eggs; could never make a success of anything requiring intelligence, patience and sympathy. Ask different people who have used the same machine as per instructions—conscientious people, and they are to be found.

Buy an incubator on the large, rather than small size. Two small ones have been found convenient in some cases. For a farmer, one of 220 or 240 egg capacity is to be recommended.

HAVING BOUGHT THE INCUBATOR, WHAT TO DO WITH IT.

Unpack, and then carefully put together the different parts, near to where the machine is to stand, so as to avoid moving it about. Be careful that it stands level.

Carefully study the directions for operating the machine, and closely follow them. If you do not, you cannot have any hold on the makers. If you know more about how the incubator should have been built or operated than the makers, you should have had a machine made to your order.

I always like to have a spare lamp and thermometer. At one time I was operating a 220-egg incubator, and the lamp suddenly began to leak fast. If I had not happened to have a spare lamp, what would have been the result? I had a somewhat similar experience with a thermometer.

Place the incubator in a well-ventilated apartment, where the temperature is likely to be even. The advantage of having a spare lamp is that you can have the spare one always filled, with wick trimmed, and ready to slip into the place of the lamp removed. This is generally done in the morning.

It is so easy for the city man, who has a cellar with concrete floor, and wide stairway, to advise putting the incubator in a "cool, sweet-smelling cellar." Certainly, such is desirable, but it is impossible in many cases. And, again, it is not always handy or agreeable to be going up and down to the cellar with lamp, etc. What then! Why, do the next best. Of course, if you alter your house to suit the incubator, I have not a word to say.

If you buy an up-to-date incubator, you will find it conveniently arranged for the easy removing and replacing of the lamp; ascertaining the temperature of egg-chamber, as shown by thermometer; gentle dropping of the chicks when hatched to the nursery below the egg-chamber; accessibility to all parts; easily understood; short and concise instructions; good workmanship and material all through.

Recapitulation.—The incubator should be on the level, and operated by a level-headed person. Do not labor under the hallucination that the incubator should make a weak germ strong. Go by the instructions. If you experiment, be fair to the incubator maker, and say so. Keep the machine scrupulously clean; your house and yourself the same. When the chickens are coming out, do not get excited. Above all, do not open the door of the incubator when the chicks are coming out to "show the dear, cute things" to anyone.

WHAT SHOULD BE PUT IN THE INCUBATOR.

None but eggs with strong germs should be put in the incubator. It is not easy always to get such. After close observation and experimenting for many years, it has been made very evident to me that, in this cold district, where the hens have led an artificial life and laid well during the winter, it is not until they have had a run outside and recovered their constitutional stamina that the germs of their eggs become strong enough to hatch a satisfactory percentage of strong chicks. By strong chicken, I mean a chicken which makes vigorous growth. (See Experimental Farm Reports, 1902, 1903, etc.) Unless a specialist (and there are few such in Canada), the farmer will find the second week in April quite early enough to fill his incubator. His chickens, hatched in the first or second week of May, are likely to make rapid growth, for his brooder is outside, perhaps, on the rapidly-growing grass.

In connection with both natural and artificial incubation, close observation during many years has afforded much experience. In giving some of these results, I belittle no other experiences. All are most valuable as means to an end. It has been plainly shown to me:

(a) That neither hen nor incubator will satisfactorily hatch out weak germs.

(b) If germs of eggs are strong they will stand an extraordinary amount of varied temperatures and treatment, and yet hatch well.

(c) Weak germs prove that they are such by causing to show vitality during early stages of incubation; by chicks fully developed, but dead in the shell, frequently at the "pipping stage." Some germs are strong enough to hatch out into weakling chicks, which "peep" most miserably for a few hours or a few days, and then (most fortunately) die—die of inability to completely absorb the yolk, acute indigestion, white diarrhea, or whatever you may choose to call it.

(d) If anyone comes to me and says, in all seriousness, that he can make a weak germ hatch a strong chick, or make a weakling chick robust, I at once expect to see a pair of wings under his spring overcoat. He is surely not of this world! Let us hear the conclusion of the whole matter for this time. Let our farmer friends put eggs with strong germs in such an incubator as I have advised, hatch them at the time named, and I will dare to say they will have 150 to 180 chicks from 220 eggs—all the chicks an ordinary farmer can successfully rear without any great tax on his time or energy. Certainly, he will have to be careful as to their brooding and regular feeding.

"What about the specialists?" you ask. I wish your well, but as yet they number no more than your fingers. As compared with them, there are 650,000 farmers in the Dominion, and it is their large interests I wish to advance.

WHITE DIARRHEA, AND MR. WEBBER'S LETTER

Editor "The Farmer's Advocate":

First, I wish to say a word regarding your footnotes to my article in Feb. 13th issue, re the above subject.

You say, "If egg-laying is to be retarded in the pullets or hens from which it was intended later to secure eggs for hatching, what about the ultimate effect upon the laying qualities of the strain?" I was simply discussing a means to overcome this one trouble. We cannot expect to have all profit and no drawbacks. It appears we must make some sacrifice at some stage of the game. Which is better, to sacrifice some of the eggs during fall and early winter, or sacrifice a large proportion of the newly-hatched chicks in the spring, and realize the inevitable further loss in the fall by having grown pullets lacking vitality, although not perceptible, in some cases, by outer appearance?

Further, you say, "And how would this plan work in with the advice to trap-nest all hens and pullets, and breed only from the best?" In my work I do not trap-nest the hens, and would not advise it. It takes a lot of time to keep records of the pullets. Trap-nesting the latter is sufficient for all needs. I trap-nest the pullets for a full year after laying their first egg. The year's record is a fair indication of their worth as breeders, where one is breeding for egg-production. One that has done well is worth raising others from, while one that has done badly is not worthy of a place in any breeding yard. The first year's test indicates her character, and her characteristic features, rather than her actions, will be transmitted to her progeny in after years, despite the treatment she is subjected to. The only thing is to be sure her constitution is not impaired, either by heavy production or an ill-balanced ration, by which she may become overfat.

Now, it is not necessary to carry the whole flock in idleness, but only those from which one wishes to hatch. This will not be a severe sacrifice, and it will pay, considering the improvement to follow in the vitality of the chicks.

Re. Mr. Webber's letter: "Nature never put a hen in this cold country." What of the prairie hen in Manitoba? They live, thrive, and raise their young. "What is a proper place to keep hens in?" It is a place containing abundant light, pure air night and day, water-tight roof, freedom from drafts, and a dry floor. "Where did those early pullets come from?" Why, from eggs laid by those rested hens, whose constitutions were so built up that the female chicks lived and became full-grown pullets, instead of being numbered with the dead from the effects of white diarrhea, often caused by the parent stock being out of condition. "Not frail and withered, or the caretaker is to blame." Maybe so, but where is the man who can balance a ration to produce eggs in plenty and every demand of the system as well. I have heard many exhibitors remark that the pullet shows to best advantage just a day or so before laying her first egg. What does that mean? It means that, with production comes deterioration, invariably. I will agree it is not so noticeable in moderate or indifferent layers, but I refer to persistent layers. How is it with the good dairy cow? If she yields well, she cannot be kept in good flesh and show no signs of fading as she continues heavy yielding month after month. And it is much easier to balance a ration and supply all needs for a cow than for a

hen. The egg is a combination of shell with its ingredients, white and yolk with their several ingredients, besides containing the germ for the reproduction of its kind. How different is milk. "Does Mr. Henry keep trap-nests?" Yes. The success I have had trap-nesting is such that Mr. Webber, himself, would hardly say the caretaker was much at fault. One Barred Rock hen reached 237 eggs in 365 days. She laid in cold weather also; November, 19; December, 20; January, 30 eggs; February 24, March 27, April 26, and her eggs hatched very well in the hatching season. That season I sent 15 eggs to Douglas, Manitoba, and got word that one egg was cracked, and 14 smart chicks, three weeks old, were on hand. These eggs were from pullets that had laid heavily all winter. In spring of 1907 I set 52 eggs one day under four hens; one egg got broken, and I took 49 chicks from the nests. These also were from pullets having laid heavily all winter. So, personally, I have nothing of note to complain of, but, when writing my article, in Feb. 13th issue, I was giving what I believed to be a means of overcoming, to a great extent, one of the great-

est evils the average poultry-raiser has to contend with; experts may not have so much trouble. A great many so crowd and cram with food and spices to force egg-production, regardless of health, that the birds are certainly weakened by spring.

If we are bent and bound on making big profits at both ends of the business, we must exercise judgment in caring for and feeding the birds we intend breeding from. It does appear to me that, if the feed bill is lowered to these, and production curtailed, we will have a better chance of getting that constitutional vigor so essential to the raising of strong chicks capable of resisting much disease.

J. R. HENRY.
Wentworth Co., Ont.

GARDEN & ORCHARD.

THE EARLY SPRING SPRAYING.

By Linus Woolverton.

That weeds and scale insects are blessings in disguise to the fruit-grower, is a proposition hard to swallow, even though it was advocated by the famous peach king, Mr. I. H. Hale, at the recent convention. The former leads to better tillage, and the latter to thorough spraying, and both result in better fruit.

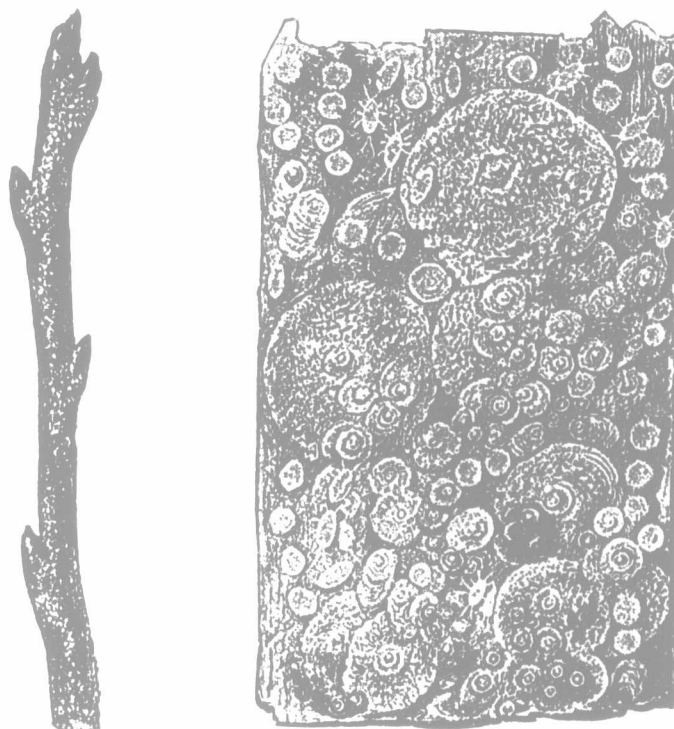
Winter spraying is so called in distinction from summer spraying, the former being performed when the foliage is off; but, in fact, the spray is not applied with us in winter, because the cold would freeze the liquid. It may be applied either in fall or spring, but preferably in May, just before the foliage appears, when the ground is dry enough to be solid.

This treatment was introduced for the destruction of the San Jose scale, which a few years ago so terrified our fruit-growers that many began to despair of their chosen industry. This insect was first introduced to San Jose, California, from Japan, and thence was spread over parts of the United States and Canada before it was observed. The first method tried for destroying it was the rooting up and destroying of all affected trees, but this was found most hopeless and disheartening. Then treating to save the trees was tried, first with kerosene-oil mixtures, then with whale-oil soap, and finally with the celebrated lime-sulphur spray, which to-day is the most highly commended of all.

So limited are the sections in Canada affected with the San Jose scale, that we would not need to give much space to treating it in these columns, were it not found that the spray which destroys it also rids the orchard of many other evils, some of which are much more widespread. Among these are the oyster-shell bark-louse, which is to be found in almost every apple orchard in Ontario, and is rendering many orchards stunted and unproductive; the scurfy scale, which is also of frequent occurrence; the pear-tree psylla; the cherry aphid; the peach-leaf curl, and probably several others. Besides, the general vigor of the tree seems to receive a stimulus from the spray, so that it seems worthy of general use.

HOW TO MAKE THE LIME-SULPHUR SPRAY.

When first introduced, the formula was, sulphur 15 pounds, lime 30 pounds, salt 15 pounds, water 40 gallons; but the salt has been found useless in our climate, and, in practice, a less quantity of lime is found to be effective. The common formula in some parts of the Niagara District, especially for use in fighting scale is, sulphur 18 pounds, lime 22 pounds, water 40 gallons; in other parts, growers have used sulphur 15 pounds, lime 20 pounds, and water 40 gallons, claiming for this formula equal effectiveness, with more economy, while no less an authority than our eminent Dr. Fletcher, of the Central Experimental Farm, Ottawa, aiming to bring us all in line in the use of one standard formula, advises sulphur 12 pounds, lime 12 pounds, and water 40 gallons. This latter, of course, presupposes the best quality of both the lime and the sulphur. The chief advantage in the greater quantity of lime is in the more evident whitening of



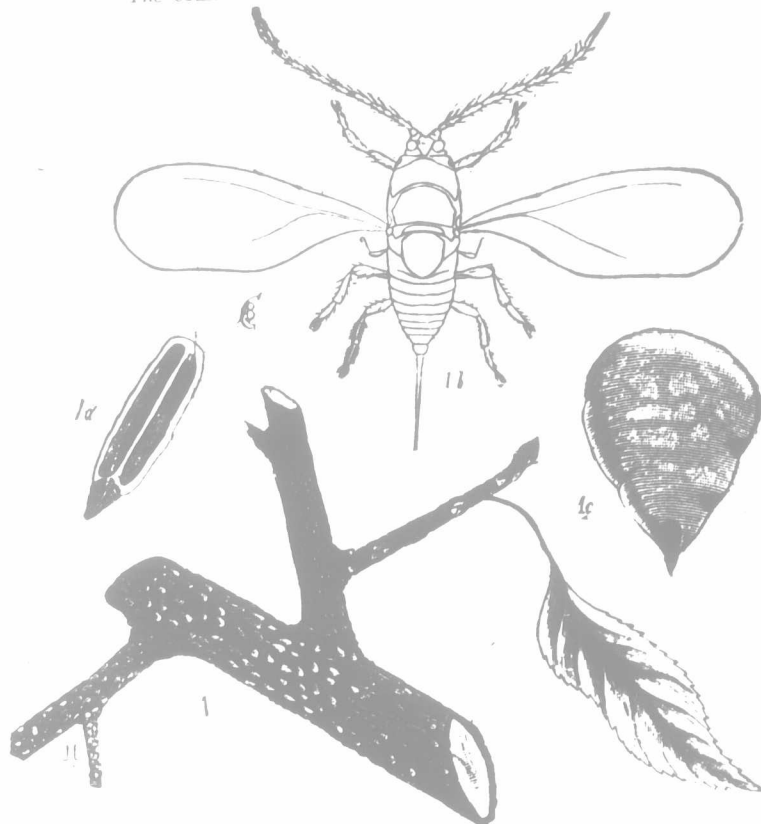
San Jose Scale.

Appearance of scale on bark: (a) infested twig, natural size; (b) bark as it appears under hand lens, showing scales in various stages of development, and young larvae.



Oyster-shell Bark-louse.

The commonest scale insect in Ontario.



The Scurfy Bark-louse.

(Chionaspis furfurus).

the trees, so that the operator can the more easily detect any portions of the tree not properly covered by the spray.

To prepare 40 gallons of the wash, put about 13 gallons (or one-third) of the water into a pan or pot and bring to a boil, and then add the 12 pounds of fresh, unslaked lime; then, having first made the 12 pounds of sulphur into a thick paste with boiling water, add this to the lime. Stir occasionally, and keep the whole boiling vigorously for at least one hour, then dilute with water to make the 40 gallons.

For this, hot water is preferable, because, if it is applied hot, the nozzles are less likely to clog, and the spray penetrates crevices better. If the mixture is left standing so long as to become thoroughly cold, it is best to reboil for a short time to bring into solution certain crystals.

A CO-OPERATIVE BOILING PLANT.

A co-operative boiling plant is the most economical way of preparing the mixture, several farmers combining to hire a man to boil it with a small steam engine, such as the ordinary threshing engine. In this way, eight or ten barrels can be boiled at once. At Grimsby, Mr. Kerman has large vats on an elevated platform, and in these he boils the lime-sulphur mixture with steam from his greenhouse engine. He then sells it to the fruit-growers by the barrel, piping it down from the vats.

If no boiling plant is convenient, a simple device successfully used near St. Catharines is a tight-fitting plank box, 6 x 4 x 1½ feet, covered on bottom and sides with sheet-iron to prevent the wood from catching fire. A fireplace, about a foot high, can be made of brick, with opening at one end for fuel, and in the other put two or three lengths of stovepipe. A large faucet for drawing off the liquid is convenient.

Thoroughness in spraying is the secret of success. Every spot on the tree must be covered. This cannot be done unless preceded by the most careful and judicious pruning. Every useless part should be removed; all branches, to the very outer tip, should be thinned, and the trunks of apple trees scraped, so that no material will be wasted, and so that all parts can be reached with the spray.

Spray-pump makers have been for years competing to produce a perfect pump, and, during the last few years many ingenious mechanical power-sprayers have been tried, with more or less success, some using a gasoline engine, others compressed air, gas, or other means of generating power. Some of these are very complex, and many farmers who are not accustomed to the care of machinery soon find themselves in trouble with their power-sprayers.

After all, for the ordinary fruit-grower, whose orchard does not exceed twenty-five acres, perhaps a first-class hand pump is the most to be commended. Some of my neighbors who have been using a power-sprayer, are this year looking for the very best hand-pump, which will permit of a pressure of, say, 100 pounds, without too much hard work for the man who pumps. Such a pump can be mounted on a cart with wide tires, and is very convenient and economical.

The writer uses an old market wagon for his hand-spray pump, and for no other purpose, so this is always ready for use. As a matter of fact, the spray is ruinous to the appearance of wagons and harness, and, if possible, the whole outfit should be set aside for that special use, so that other wagons and harness may be kept presentable. If special harness is not available, cover the horse as completely as possible with an old blanket, or preferably a waterproof.

NURSERY STOCK AND SAN JOSE SCALE.

As I am interested in fruit-culture, would you kindly answer me the following questions:

1. Would it be safe to plant young apple trees that are grown in a nursery in Carleton County? I have been informed that young trees, grown in as cold a climate as Ottawa, die in a few years after planting with a disease called black heart.

2. I have been informed that the San Jose scale is very bad around St. Catharines, and would like to know if there would be any danger from scale if I purchased trees from a reliable nursery up there.

3. Have all fruit trees coming into Ontario from the United States to be fumigated again in Ontario before reaching the purchaser?

4. What is the duty on fruit trees coming into Ontario from New York State?

1. I would not hesitate to take trees from a northern nursery, such as that at Ottawa, so long as the trees were thrifty and healthy. Often the trees in northern-grown nurseries are affected with Black Heart, but this can be easily determined by cutting off the trees and examining them. Even if they are affected with this trouble, if they are cut back close to the ground, and new growth started, they will overcome the trouble. Sometimes the trouble also occurs in southern-grown trees, when winters have been severe.

2. You have been rightly informed with regard to the San Jose scale in and about the Niagara District. It has now become more or less general in that district, but the nurserymen are fighting hard to keep it out of the nurseries, and are obliged to fumigate all their stock before it is distributed for planting. If this fumigation is done thoroughly, it should kill all the scale. Nevertheless, there is danger that some of the scale may escape. My candid opinion is that growers need not fear the scale if they are prepared to spray their trees thoroughly, as they should do to get best quality of fruit, even if there is no scale upon the trees.

3. All fruit trees coming into the country from the United States have to be fumigated at the port of entry, but I am doubtful as to whether this is done thoroughly enough to insure killing all of the scale. I understand that in many cases the boxes are merely opened and the fumigation done without removing the stock from the boxes in which they were packed. In such a case, the fumigation required in the Ontario nurseries would be more effective.

4. The duty on nursery stock coming into Canada from the United States is 20 per cent.
O. A. C. H. L. HUTT.

MELON AND ONION CULTURE.

As I intend gardening this year, I thought I would write for advice how to raise melons and black seed onions, planting as well.

S. H. M.

Ans.—To grow onions from seed, the seed should be sown as early as possible in the spring. For the production of bulbs for market, the seed is sown at the rate of about four or five pounds per acre; but if for the production of Dutch sets, it is usually sown about ten times as thick. The ground for onions should be thoroughly prepared and made as fine as possible, when the seed should be sown about one-quarter of an inch deep, and the ground well firmed over the seed to insure quick germination. The crop should be kept well cultivated, and care should be taken to avoid throwing earth over the bulbs, as these should form on top of the ground. If extra large bulbs are wanted, the plants may be thinned out to an inch or two apart in the row; but if a large crop of smaller bulbs is required, they may be allowed to crowd, and will often form good-sized bulbs, even when grown in thick clusters.

Melon seed should not be sown until danger of frost is past, as the plants are tender, and are killed by a slight frost. They should be planted in hills six or eight feet apart, depending upon the kind of melons. Muskmelons may be planted six feet, while some of the watermelons are all the better for being planted ten feet apart. The hills in which the seeds are planted are better for being well enriched by incorporating with the soil a few shovelfuls of well-rotted manure or compost. By the term hills, we do not necessarily mean an elevation above the ordinary level of the ground, but merely the place where the seeds are planted. Six or eight seeds should be sown in each hill, and, when the plants are well established, and have reached the stage where they will not likely be destroyed by the small striped cucumber beetle, they should be thinned out to three good strong plants to each hill. When the vines begin to run freely, it is well to nip off the terminal buds of the main vines when they reach four or five feet in length to induce the formation of laterals, upon which the fruit is mostly produced. Melons require the same clean cultivation as other garden crops. If the season is warm, and good cultivation is given, usually a good crop of fruit may be counted upon.
H. L. HUTT,
Ontario Agricultural College.

MISAPPREHENSIONS CONCERNING SPRAYING.

At the 1907 Convention of the Ontario Fruit-growers' Association, the above subject was discussed in terse and pointed speech by Prof. H. A. Surface, of Pennsylvania. There is a disposition in some quarters, he said, to look upon spraying as a panacea for all the ills of fruit-growing. Of course, it is not.

There is an idea in some quarters that spraying is entirely a preventive measure. This is wrong. It is true we spray with Bordeaux mixture as a preventive of fungous diseases, but in the case of insects, we spray to destroy them, and ordinarily wait until they appear before attempting to combat them. The one exception to this rule is the codling moth. We have to spray in anticipation of the attacks of this insect, but it is the only exception in the line of insect enemies that we could call to mind.

There is a more or less general idea that Bordeaux mixture is an insecticide. It is not. It is

probably a repellent of some value to certain insects, such as the cucumber flea beetle, but Bordeaux mixture alone will not kill insects. To accomplish this purpose, we must mix Paris green with it.

A third misapprehension is that Bordeaux will cure plant diseases. It will not. Bordeaux properly applied at the right time will prevent fungous diseases by destroying the spores that alight on the twigs and leaves before they have a chance to gain entrance to the tissues of the plant, but, once entered, they are safe from the effects of any fungicide. You cannot cure curl-leaf in a peach tree, or the scab-fungus in an apple or pear, or black knot in a plum tree, or blight on potato vines, by spraying with Bordeaux. Once the disease is established, the only possible object in spraying would be to prevent its further spread. You cannot eradicate it from the infested leaf or fruit or twig.

In short, we must spray as a preventive means against fungous diseases and against one insect, viz., the codling moth. In the case of all other insects we spray to poison, or, where that is impossible, as in the case of sucking insects, we spray to suffocate by closing the breathing pores with some such substance as kerosene emulsion.

The impression that benefit can come of spraying fruit trees in bloom has long ago been knocked on the head. Aside from the danger of killing bees and preventing pollination, it is bad horticultural practice. It may injure the carpels and reduce the yield of fruit. Cases of this had been reported to him.

The idea that spraying poisons the fruit for the people who use it, is mistaken. He cited the case of some Pennsylvania market gardeners who sprayed their cabbage after night with Paris green. Calculation showed that a person would have to eat about 206 heads of cabbage to get enough Paris green to poison himself. Of course, if poison were applied shortly before the fruit were picked, and there should be no rain afterwards, there might be a slight possibility of injury, though very slight.

[Note.—Dr. Fletcher's opinion on the possibility of poisoning cabbage with Paris green is not quite so assuring. At the 1907 Convention of the Ontario Vegetable-growers' Association, he is reported to have said that Paris green is dangerous to apply to cabbage, because the insects sometimes bore into the cabbage, a little Paris green may get in, and a very little will sometimes severely poison some people.—Editor.]

Grass in a sprayed orchard is not poisoned for stock. The lime-sulphur mixture, even with Paris green added, will not affect the grass in an ordinary sprayed orchard enough to harm the stock. The only case he had ever heard of stock being poisoned by spray mixtures was where a cow drank a bottle of Paris-green mixture. This cow died.

Birds are not killed by spraying, and the lime-sulphur mixture without Paris green will not kill bees.

Many people make the mistake of thinking that if a little spray mixture is good, more would be better. This is wrong.

Materials should not be mixed by guesswork. Measure and weigh everything to the ounce. Eight per cent. doesn't mean ten per cent., and if a man uses a ten-per-cent. mixture where an eight-per-cent. mixture was advised, he is liable to do serious injury to his trees.

Don't attempt to spray against the wind. With a squirt-gun or a fire engine one can throw a stream against the wind, but no nozzle can force a fine spray against the wind so as to cover the tree properly.

There is such a thing as forcing a spray under too high pressure. He had known of cases where Bordeaux mixture was driven so hard into the stomata of the leaves that the leaves were injured.

For spraying high trees, one requires a long hose, a ladder, and an extension rod.

Do not suppose that once spraying with the lime-sulphur wash will finish the San Jose scale. One spraying in this case would be like taking a single dose of medicine. It is well to give two coats, the second immediately following the first. Even this will not completely exterminate it, but, if by spraying once a year, or once in two years, we can control the scale, and grow profitable crops of fruit, we should be satisfied.

When San Jose scale is discovered on one or two trees in the orchard, spray the whole orchard.

Follow instructions. It is not safe for an amateur to modify spray formulæ.

Sprayed fruits keep longer than unsprayed.

Prof. Surface told of one man who had, for some reason, had failure with the lime-sulphur mixture for San Jose scale. He finally put on five coats, one right after the other, and practically cleaned it up.

One spraying with the lime-sulphur wash before the leaves appear will prevent curl-leaf for that season.

Calendar Guide to Spraying.

BY DR. JAS. FLETCHER, DOMINION ENTOMOLOGIST AND BOTANIST, AND W. T. MACOUN, HORTICULTURIST, CENTRAL EXPERIMENTAL FARM, OTTAWA.

PLANT.	1ST APPLICATION.	2ND APPLICATION.	3RD APPLICATION.	4TH APPLICATION.	5TH APPLICATION.	6TH APPLICATION.
APPLE. Black spot fungus, codling moth, leaf-eating caterpillars, borers, apple aphid, scale insects.	Copper sulphate or poisoned Bordeaux. Just when leaf buds open. (Important.)	Poisoned Bordeaux. Just before blossoms open. (Important.)	Poisoned Bordeaux. Soon after blossoms fall. (Important.) Alkaline wash. For borers at end May.	Poisoned Bordeaux. 10 to 15 days later.	Poisoned Bordeaux. 10 to 15 days later if spot disease is severe. Alkaline wash. For borers at end June.	Poisoned Bordeaux. For winter apples.
CHERRY. Leaf diseases and injurious insects. Cut out and burn black-knot, whenever seen.	Poisoned Bordeaux. Before flower buds open. Kerosene emulsion or whale-oil soap solution. For aphid.	Poisoned Bordeaux. When fruit has set. (Important.)	Poisoned Bordeaux. 10 to 15 days later. (Important.)	Ammoniacal Copper Carbonate. 10 to 15 days later. (Important.)	If a late brood of the "cherry slug" appears, dust with fresh-slaked lime, or spray with Paris green. (Important.)	
CURRANT. Leaf spot, "currant worm," currant aphid.	Paris green. When worms appear. For aphid, kerosene emulsion, whale-oil soap or tobacco and soap wash.	Hellebore. When fruit is fully formed.	Bordeaux. After fruit is picked.	Bordeaux. 10 to 15 days later.		
GOOSEBERRY. Mildew, "currant worm."	Copper sulphate. Before buds start.	Poisoned Bordeaux or potassium sulphide. (1 oz. to 2 gals. water) Just as buds burst.	Poisoned Bordeaux—Hellebore (applied separately); or potassium sulphide. 10 days later. (Important.)	Ammoniacal Copper Carbonate or Potassium Sulphide. 10 days later.		
GRAPE. Mildew, rot, anthracnose, "thrip" (or leaf-hopper).	Copper sulphate. Before buds start for anthracnose only. (Important.)	Bordeaux. Just before blossom. (Very important.)	Bordeaux. As soon as fruit has set. Kerosene emulsion. For leaf hopper (Very important.)	Bordeaux. 10 to 15 days later. (Important.)	Poisoned Bordeaux. 10 to 15 days later. If disease persists. (Important.)	Ammoniacal Copper Carbonate. If disease persists. (Important.)
PEACH, APRICOT, NECTARINE. Rot, leaf-curl, curculio, bud moth, bark borer.	Copper sulphate and Paris green. Before buds start. (Very important.)	Bordeaux. 8 lbs. copper sulphate, 8 lbs. lime, 50 gals. water. Paris green (8 ozs.). Just before blossoms open.	Bordeaux (as before). Paris green (8 ozs.). Soon after fruit has set.	Bordeaux (as before). Paris green (8 ozs.). 8 to 12 days later.	Bordeaux (as before). 8 to 12 days later. If rot is prevalent.	Ammoniacal Copper Carbonate. 10 to 15 days later. If rot is prevalent.
PEAR. Spot, cracking, leaf blight, codling moth, "slug," pear psylla.	Copper sulphate. Before buds start. (Important.) For pear psylla, lime wash in winter; kerosene emulsion or whale-oil soap.	Poisoned Bordeaux. Just before blossoms open. (Important.)	Poisoned Bordeaux. Soon after blossoms fall. (Important.)	Poisoned Bordeaux. 10 to 12 days later.	Bordeaux. 10 to 15 days later.	Paris green. If late brood of "slug" appears.
PLUM. Rot, blight, shot-hole, bud moth, curculio, aphid. Cut out and burn black-knot.	Copper sulphate and Paris green. Before buds open. (Important.)	Poisoned Bordeaux. Soon after blossoms have fallen. (important.)	Poisoned Bordeaux. 10 to 12 days later. Kerosene emulsion, Whale-oil soap, or Tobacco and soap wash For Aphid.	Poisoned Bordeaux. 10 to 15 days later. Kerosene emulsion, Whale-oil soap, or Tobacco and soap wash For Aphid.	Ammoniacal Copper Carbonate. 10 to 15 days later. If rot is prevalent.	Ammoniacal Copper Carbonate. 10 to 20 days later. If rot is prevalent.
ROSE. Mildew, leaf blight, "rose slug," "rose thrip."	Mildew in Greenhouse. Paint heating pipes with paste made of equal parts of sulphur, lime, water.	Leaf Blight. Ammon'1 Copper Carbonate. "Rose Slug." Paris green (1 oz. in 12 gals. water) or Hellebore.	"Rose Thrip." Kerosene emulsion, or whale-oil soap. When "thrip" appears.	Bordeaux. Soon after old canes are cut out.		
RASPBERRY, BLACKBERRY, DEWBERRY. Anthracnose, rust.	Copper sulphate. Before buds burst.	Bordeaux. 10 to 15 days later.	Bordeaux. Soon after old canes are cut out.	Dig out and burn badly-diseased plants.		
STRAWBERRY. Rust, white grubs.	Bordeaux. Just before blossoms open. For white grubs, grow strawberries on one-year system.	Bordeaux. Soon after picking season, or burn foliage.	Bordeaux. 10 to 15 days later.			
BEAN. Anthracnose, cut-worms.	Copper sulphate. ½ oz. to 1 gal. water. Soak seed 1 hour. For cutworms, poisoned bran or paper bands round newly-set plants.	Bordeaux. When rough leaves appear.	Bordeaux. 8 to 12 days later.	Kerosene emulsion, or Soap washes. For aphid.		
CABBAGE, TURNIP. Flea-beetle, caterpillars, aphid, root-maggots.	Paris green—dry mixture. For flea-beetle immediately plants appear above the ground. For root-maggots, tarred-paper disks around stems of cauliflowers, etc., and Hellebore or Pyrethrum infusion at roots when set out.	Pyrethrum—dry mixture. For cabbage worms.				
POTATO. Scab, blight and rot, insects.	Soak tubers in solution of formalin. For scab.	Paris green. 1 lb. to 80 gals. water. For Colorado potato beetle. Bordeaux for flea-beetle.	Poisoned Bordeaux. For rot and beetles. From 15th July till end of season, two weeks apart. Keep foliage covered.			
CELERY. Rust.	Keep foliage constantly covered with Bordeaux throughout season.					
ASPARAGUS. Rust.	Bordeaux and Resin soap. Before rust appears in latter half of July, and two to three weeks later.					
TOMATO. Rot, blight.	Bordeaux. On plants in seed-beds	Bordeaux. On first appearance of rot.	Bordeaux. When necessary.			

FORMULAS OF INSECTICIDES.

PARIS GREEN.

For Foliage-eating Insects.
Paris green 1 lb.
Unslaked lime 1 lb.
Water 160 gals.
Dry Mixture.—1 lb. Paris green with 50 lbs. flour, land plaster, slaked lime or any other perfectly dry powder.
Poisoned Bran.—Mix 1 lb. of Paris green with 50 lbs. of slightly moistened bran. Scatter on surface of soil.

HELLEBORE.

White Hellebore 1 oz.
Water 2 gals.
Or to be dusted undiluted over attacked plants.

PYRETHRUM (or Insect Powder).

Pyrethrum powder 1 oz.
Water 3 gals.
Dry Mixture.—Mix thoroughly 1 part by weight of Insect Powder with 4 of cheap flour, and keep in a close vessel for 24 hours before dusting over plants attacked.

KEROSENE EMULSION.

For Bark Lice and Other Sucking Insects.
Kerosene (coal oil) 2 gals.
Rain water 1 gal.
Soap ½ lb.

Dissolve soap in water by boiling; take from fire, and, while hot, turn in kerosene and churn briskly for five minutes. For use dilute with nine parts of water

so that the above three gallons of stock emulsion will make 30 gallons of spraying mixture.

FLOUR-KEROSENE EMULSION.

1. Kerosene 1 quart
Dry flour 8 ozs.
Water 2 gals.

Stir together the flour and kerosene; then add the water and churn violently for two to four minutes. (To be used immediately.)

2. Kerosene 1 quart
Flour scalded in water 2 ozs.
Water 2 gals.

Scald the 2 ozs. of flour in water before adding the kerosene; churn as above. (Can be kept for a week or more, if necessary.)

WHALE-OIL SOAP.

For brown or black aphid, 1 lb. in 4 gallons water.
For scale insects (young), 1 lb. in 5 gallons water.

For green aphid or thrip, 1 lb. in 6 gallons water.

For San Jose scale (in winter), 2 lbs. in 1 gallon water.

TOBACCO AND SOAP WASH.

Soak in hot water for a few hours, 10 lbs. of tobacco leaves (home-grown will do); strain off and add 2 lbs. of whale-oil soap. Stir until all is dissolved, and dilute to 40 gallons. Apply early, and two or three times at short intervals.

(Continued on next page.)

N.B.—All the above recommendations are dependent on weather. If heavy rains falls within 24 hours, applications should be repeated. Always wash out thoroughly with clean water all pumps and nozzles immediately after using. The gallon mentioned above is the Imperial gallon.

LIME WASH.

Unslaked lime	1 to 2 lbs.
Water	1 gallon.

Strain through sacking before spraying.

LIME-SULPHUR WASH (WINTER WASH).

For San Jose Scale and Fungous Diseases.	
Lime	12 lbs.
Sulphur, powdered	12 lbs.
Water to make	40 gals.

Slake the lime with only enough water to do it thoroughly. Add the sulphur by dusting it over the lime while slaking; stir well, and boil for at least an hour, adding only so much hot water as is necessary for easy stirring. When thoroughly cooked, strain through sacking, and apply warm.

A formula much used in New York and Connecticut, which gives good results, is: Lime, 20 lbs.; sulphur, 15 lbs., and water, 40 gallons.

LIME-SULPHUR-SODA WASH.

Lime	25 lbs.
Sulphur, powdered	12½ lbs.
Caustic soda	5 lbs.
Water to make	40 gals.

Put the lime in a barrel; add enough hot water to make it boil rapidly; while slaking, stir in the sulphur, previously made into a thin paste with hot water; then add the caustic soda, dissolved in hot water. Add more water as required to prevent boiling over, and stir briskly all the time. When all bubbling ceases, add hot water to make up to 40 gallons.

Cook sulphur washes in iron pots or by steam in wooden vats or barrels; never use copper vessels either for cooking or for spraying sulphur washes from.

ALKALINE WASH.

For Borers.

Soft soap, reduced to the consistency of thick paint by the addition of a strong solution of washing soda in water. If applied with a brush about the 1st of June, on the morning of a warm day, this will dry in a few hours and form a tenacious coating not easily dissolved by rain.

If one pint of crude carbolic acid to the gallon of wash be added, it will make it more effective.

FORMULAS OF FUNGICIDES.

BORDEAUX MIXTURE.

For Fungi.

Copper sulphate (bluestone)	4 lbs.
Unslaked lime	4 lbs.
Water (1 barrel)	40 gals.

Dissolve the copper sulphate (by suspending it in a wooden or earthen vessel, containing 4 or 5 or more gallons of water). Slake the lime in another vessel. If the lime, when slaked, is lumpy or granular, it should be strained through coarse sacking or a fine sieve. Pour the copper-sulphate solution into a barrel, or it may be dissolved in this in the first place; half fill the barrel with water; dilute the slaked lime to half a barrel of water, and pour into the diluted copper-sulphate solution, then stir thoroughly. It is then ready for use. (Never mix concentrated milk of lime and copper solution.)

A stock solution of copper sulphate and milk of lime may be prepared and kept in separate covered barrels throughout the spraying season. The quantities of copper sulphate, lime and water should be carefully noted.

To test Bordeaux mixture, let a drop of ferrocyanide of potassium solution fall into the mixture when ready. If the mixture turns reddish brown, add more milk of lime until no change takes place.

POISONED BORDEAUX MIXTURE.

For Fungi and Leaf-eating Insects.

To the 40 gallons of Bordeaux mixture prepared as above, add 4 ounces of Paris green.

For Potato Rot.

Instead of 4 lbs. copper sulphate, use 6 lbs.; and for potato beetles, 8 ozs. of Paris green may be used instead of 4 ozs. in 40 gallons of wash.

SODA-BORDEAUX (BURGUNDY MIXTURE) FOR POTATO BLIGHT AND ROT.

Copper sulphate (bluestone)	6 lbs.
Washing soda (carbonate of soda)	7½ lbs.
Water (1 barrel)	40 gals.

Dissolve copper sulphate as for Bordeaux mixture. Dissolve 7½ lbs. washing soda in 4 gallons water. Pour the copper-sulphate solution into a barrel, half fill the barrel with water, then stir in the solution of washing soda, and finally fill the barrel with water. It is now ready for use. The soda-Bordeaux adheres better to the foliage when freshly made than the ordinary Bordeaux mixture, but it deteriorates rapidly in this respect, and must be used as soon as made. If left standing for 24 hours it will have lost nearly all of its adhesiveness. The soda-Bordeaux is not recommended to the ordinary Bordeaux mixture, but where lime cannot be obtained it may be used with good results. Furthermore, on account of its freedom from sticky matter there is less likelihood of the nozzles becoming clogged when it is used. As washing soda is

more expensive than lime, this mixture costs a little more than the ordinary Bordeaux mixture.

Note.—If the soda-Bordeaux is used for spraying fruit trees, the formula is: Copper sulphate, 4 lbs.; washing soda, 5 lbs.; water, 40 gallons.

RESIN SOAP.

Resin	8½ lbs.
Washing soda (sal soda, carbonate of soda)	6 lbs.
Water	4 gals.

Dissolve 6 pounds of washing soda in 4 gallons of hot water, and then bring the solution to a boil. In another vessel melt 8½ lbs. resin. When the latter is melted, pour it slowly into the boiling soda solution until all the resin is added, stirring it well at the same time. After all the resin is added, continue boiling for one hour, or until a homogeneous mixture is obtained. If properly made, this will mix well with water or Bordeaux mixture. As some water will be evaporated in boiling, sufficient should be added to make the stock mixture 4 gallons.

Two quarts of the above stock mixture should be used with 40 gallons of Bordeaux mixture.

Resin soap may be added to Bordeaux mixture (2 quarts to 40 gallons), and makes it adhere better to foliage.

COPPER-SULPHATE SOLUTION.

For Fruit Trees Before Buds Burst.

Copper sulphate (bluestone)	1 lb.
Water	20 gals.

As soon as dissolved it is ready for use. Use only before the buds open. To destroy wild mustard, spray before bloom, with 5 lbs. in 20 gallons.

AMMONIACAL COPPER CARBONATE.

Copper carbonate	5 ozs.
Ammonia	2 qts.
Water (1 barrel)	40 gals.

Dissolve the copper carbonate in the ammonia. The ammonia and concentrated solution should be kept in glass or stone jars, tightly corked. It is ready for use as soon as diluted with the 40 gallons water. To be used when Bordeaux cannot be applied, on account of staining the fruit.

FORMALIN.

For potato scab, soak the whole tubers before cutting up or planting.

For 2 hours in a solution of commercial formalin (formaldehyde), 8 ozs., in water, 15 gallons; 1 oz., in water, 2 gallons.

For smut in small grains, soak the seed for two hours in formalin solution, 16 ozs. in 40 gallons water, before sowing.

UNIFORM FORMULA FOR LIME-SULPHUR MIXTURE.

Editor "The Farmer's Advocate":

There was a keenly-interested meeting of fruit-growers at St. Catharines last spring, and practically the whole time was taken up in discussing the San Jose scale and its treatment. Prof. Surface was present from Pennsylvania, and took a prominent part in the discussions. Prof. Fletcher, of the Michigan Agricultural College was also there, and gave a very interesting address on the improvement of plants by selection and cross-breeding. In my addresses I urged the necessity, or rather the great advantage, of the fruit-growers of the Niagara District settling upon one standard formula for the lime-and-sulphur wash. At present everyone who boils the wash seems to make some variation according to his own taste or convenience, but the resulting lack of uniformity in preparing the wash has a decided effect in causing many who are almost persuaded to spray to leave the matter until there is more uniformity of opinion as to the proper formula. In the Niagara District, the lime is of good quality and fairly uniform; the three brands used are very similar in this respect. The sulphur used is also of practically the same purity; so there is no reason that I can see why a uniform formula should not be decided upon and widely used. In the spraying calendar I am sending you, I have advised the formula, lime 12 pounds, sulphur 12 pounds, water 40 gallons; but, as a matter of fact, the 40-gallon barrel is not filled to the top, and the consequence is that the formula I have advised is the same as the one known as the "1-1-3" formula (1 pound lime, 1 pound sulphur, 3 gallons water), which has given excellent results in the United States, and the best results in the State of Ohio, where the conditions are very similar to those prevailing in the Niagara Peninsula. Mr. Geo. E. Fisher, who did such excellent work in the Province of Ontario, tells me that his final experiments decided him to use 20 pounds of sulphur, 30 pounds of lime, and 40 gallons of water. This gave a formula very easy to remember, and one which left a deposit of lime on the trees which was easily seen after the work was finished. This is a great advantage in doing complete work. To be effective, this wash must cover every part of the tree, and in the first spraying it is almost impossible to cover the tree thoroughly, without missing some branches. If, however, the sprayed part is conspicuously white, in "trimming up" the orchard after spraying, the missed parts are easily detected, and can then be attended to.

JAMES FLETCHER,

Dominion Entomologist and Botanist.

VEGETABLES FOR PROFIT.

Editor "The Farmer's Advocate":

Some years ago, the Ladies' Aid of our little church, about ten in number, wanted to raise money for some improvements. In the month of April they agreed each to invest a dollar in any way they chose, and make their returns in June. One of the ladies came to me to know the best thing to invest her dollar in. On her lawn was a flower-bed 7 x 20 feet that would not be planted until June, so I suggested that the bed be manured and dried, and planted with Dutch-sets onions. I got the bed ready, marked it for the onions, 4 x 4 inches each way, the hole about three inches deep. She bought a peck of onions for a dollar, and they were planted the 20th of April. In the first row two onions were set in each hole, in the next row one onion, until the bed was planted. They were at the south front of the house, and grew very rapidly, and, by the last week of May were ready for sale. She got them ready for market, put up in nice clean bunches. The crop made \$5.20—\$4.20 to the good, so I think that was a stroke of business; and I know whereof I speak, for I sold her the onion sets, and also sold the crop for her. Now, those onions were sold in Toronto, which is a cheap market.

There is no reason why this sort of gardening could not be done on a larger scale with many a farmer's family throughout the country. There is always a market for early onions, lettuce and radishes at most of the country towns. This winter there has been a larger quantity of hard white cabbage (over fifty carloads) shipped into Toronto, from New York State, and sold rather cheap, than should have been. It is up to a great many of the vegetable growers to get a move on and stop this nonsense. Some will say, How are we to do this? We have as good land and climate as they have in New York State, and no duty to pay.

Seed onions are a good crop for those that have a good piece of soil, not too heavy, although the heavy soil was best for onions last year. Most of those fine onions that were exhibited at Massey Hall exhibition were grown on rather heavy soil. But, as a rule, we like a nice clay or sandy loam, not too dry. You cannot have it too rich. Land that was used for root crops last season would be suitable for onions, with a liberal dressing of well-rotted manure, thirty loads per acre, well worked with plow and disk harrow. Then, on a dry day, use levelling harrow, roll or plank to firm soil. Sow good seed to suit conditions, 6 pounds seed per acre, 15 inches apart, if worked by hand cultivation; 4 pounds seed per acre, 24 inches apart, if by horse cultivation. We use the Planet Jr. drill. Keep well worked and free from weeds. Sow early to avoid stiff-necked onions.

When filling the bags for sale, just think of the other fellow, who is likely to be the buyer. The reason for mentioning this is that, last December I bought 25 pounds of onions from a well-known commission house in Toronto. On the top of each bag was a peck of good onions; the others were rubbish, of no use whatever. There were 150 bags in the lot, shipped from one party. When I let the commission man know about it, he had them all looked over, and they were all alike. I would like to have a photo of the conscience of the man who filled those bags. We always tell our men to put stuff up, whether in bags or boxes, just as they would like to buy them.

To grow cabbage, we must have the soil very rich and well worked. It will not do any harm to plow and disk-harrow it three or four times, to be sure the manure is well incorporated in the soil. The more you work it, the more moisture it will retain. You can scarcely make a mistake what time to plant cabbage. Any time from April 15th to July 1st. Around Toronto we often plant as late as July 20th, and they do well after early potatoes are off. What does for cabbage, does for cauliflower and Brussels sprouts. We plant rows 2½ feet apart; for early cabbage, 18-in. rows; late cabbage, 24-in. rows; cauliflower, 24-in. rows; Brussels sprouts, 3 feet each way, and planted very early in May; they require a long season to make their growth. We grow cabbage on any kind of rich land, from light sand to heavy clay. Early cabbage we grow on the heavier soil, to avoid the root maggot. Late cabbage do well on sandy soil, when rich. Late cauliflower do best with us planted from July 1st to 15th. When planting, be sure the roots are well grounded with the setting stock, then the plant will start to grow immediately.

Parsnips are a good money-making crop for vegetable farmers to grow, and of easy cultivation. They are now worth about \$10 to \$15 per ton at Toronto market, and, any time there is not a good sale for them, remember there is no other root that has the same feeding qualities as the parsnips for stock or swine. The soil most suitable to them is deep, sandy loam moderately rich, and well worked before sowing. Our way is to ridge up with narrow plow, 24 inches apart; level ridges lightly with levelling plank,

so that the soil is firm for the drill to run on top of ridge. Sow plenty of seed, 3 pounds per acre. Let the drill run deep, 1½ to 2 inches each. After sowing, run roller over, so that seed is well covered. When up in rough leaf, run double wheel hoe over once a week as weeds appear, then the horse cultivator for a few times. Parsnips soon cover the soil, making them one of the easiest of root crops to manage. They come next to mushrooms for profit. Some of our vegetable men are making quite a success growing mushrooms. They sell at 60 cents a pound, \$120 per ton. York Co., Ont. J. W. RUSH.

"DEHORNING" FRUIT TREES.

We have a number of Northern Spy and Golden Russet apple trees, which have been kept pretty well trimmed out, but they are planted rather closely together, and the lower branches are interlacing, while they are growing entirely too high to suit me. How would you advise me to prune them? If I cut ten or twelve feet off the top, would it be just like a brush-heap on top? Would it be all right to trim the top off, also all interlacing branches, and keep thinned out at the same time? E. C. M.

Evidently you are now up against the proposition which all orchardists have to face sooner or later who plant trees too closely, and it is a difficult matter sometimes to determine what is the best thing to do. In some cases it would be better to trim out the alternate trees and give the others room for full development. If, however, you wish to lower the heads of the trees, it might be done by "dehorning" them, as is now being done in many orchards in the Niagara District; that is, by cutting out all the large limbs and allowing them to form new tops. This, however, is a very severe treatment, and, unless the trees are thrifty and healthy, they may not stand the shock and make good trees again. When the trees are cut back in this way and are not killed outright by the severe pruning, they usually make a very strong growth in their effort to re-establish balance between the root and top, in which case close watching is necessary to train the new growth as desired, and not allow it to form a brush-heap in new top. This can be done by thinning out shoots not needed, and directing growth into those which are needed to form the new top of the tree. When trees are cut back in this way, all of the large wounds should be well covered with heavy lead paint to exclude moisture and prevent decay until they can be healed over. H. L. HUTT.

O. A. C.

GROWING CUCUMBERS.

How should soil be prepared for cucumbers? When should they be planted, how taken care of, and when picked? Peel Co., Ont.

A SUBSCRIBER'S SON.

Cucumbers may be successfully grown in any good garden soil, although light soil, neither dry nor wet, is the best. The soil should be exceedingly well worked, and made rich enough to induce a quick growth, although not so rich as to induce the plants to run to vines. The hills should be about two feet in diameter, and made four or five feet apart each way. For early cucumbers, sow in the house or greenhouse in April, and set out the strongest plants when danger of frost is over. If inverted sods are used to place the seeds in, there need be no setback due to transplanting. For later cucumbers, sow out of doors when danger of frost is over, 8 to 10 seeds in the hill, on account of insects, thinning to 4 or 5 plants in the hill. A third sowing, for pickles, may be made in late June. Cultivate until the vines cover the ground, and water well when necessary. Pick all fruits when of proper size, even if not needed, as if allowed to run to seed, the vines will cease to bear. In some localities the cucumber is liable to attacks of the striped beetle. To evade these, "trap" crops of squash, which the beetle prefers, are sown four days before the cucumbers. When the cucumber plants appear, they may be covered with netting or sprayed with Bordeaux, when the plants come up, when the third leaf appears, and again just before the vines begin to form runners. The strength of the Bordeaux should be one to eleven.

A NATIVE PLUM.

By Mrs. Annie L. Jack.

A fruit that is fast disappearing, even in inland rural sections of the country, is the native plum, that we all knew before so many of the imported varieties came to us. It was red, juicy, and with a tang of flavor that made it a favorite for pies.

Black-knot and curculio have caused the trees to be exterminated in some parts of the country, but in one of the by-ways of our Province a row of these trees were found last season that were healthy and loaded with fruit.

The old farmer, who had lived over 50 years on the same farm, excited my curiosity, for he

had never been on the railway or become smitten with the desire to keep moving that is the ruin of our rural homes of to-day. But he knew all about red plums, and gave an item as to their use that had never before come under my observation. Sitting on a fallen log near the fence where the wild plums grew, he said, reminiscently:

"There was one year we had no grain threshed in the fall, and no time to thresh it. Milk was scarce, and, when the plums were ripe, I thought I'd try them for pig feed. So, every morning while they lasted I gathered two pailfuls, shaking them down as they ripened, and put them into the trough. Well, you should just have seen the pigs crunch stones and all." I asked if their digestion didn't suffer? "Well, you know," he said, confidentially, "they thrived better than when they got the feed from the mill. I always had thought them useless, and one of the youngsters said to me, once, 'I suppose red-plum trees were made so as to look pretty before apple trees come into bloom?' But I found out a use for them when other feed was scarce, and have had more respect for them ever since."

APIARY.

MAKING A START WITH BEES.

Before buying bees, one should learn as much about them as possible. But, "What books and periodicals shall I study?" the uninitiated will ask. This is a pertinent question, for, as in any other calling, there are a number of books on bee-culture, some of which are better for the beginner than others. Some of the bee journals, too, are more for the professional than for beginners. For simple, timely, practical instructions, follow the Apiary Department of "The Farmer's Advocate." The bee-book that I purchased first was "A B C of Bee Culture." Though I have read most

lost. When bees are purchased during fruit bloom, no special ventilation will be required when hauling them home. Simply fastening ordinary wire cloth over the entrance is well enough. Should, however, the day be quite warm, as is possible here during fruit bloom, the hive of bees should be protected from the direct rays of the sun. Every precaution should be used that the wire cloth may not get loose, or in any other way bees get out of the hive during transit. Run-aways are reported from time to time by bees getting out and stinging the horses while the former are being moved. If the hives are such that they can hardly be made bee-tight, it is best to haul them home during the night.

When arriving home with the bees, they should be put on the place they are to occupy and released at once. If bees are put on a temporary stand, and afterwards moved to the place they are to occupy for the summer, bees will be lost by going back to the old stand. If, however, there is only one colony, and it is not moved too far, most of the bees will find their home.

Of course, a beginner will want to open the hive to see how the bees are working, every day, or perhaps oftener. This is not good for the bees, but just the way for the beginner to acquire knowledge.

An ordinary "silk-front" bee-veil should be worn to protect the face from stings. Gloves, too, may be worn the first few times. I discarded them after having worked with the bees three times. A good bee-smoker should be purchased, too. Some try to handle bees without using smoke. That's a big proposition. I would rather do without a veil than without a smoker. F. A. STROHSCHNEIN.

[Note.—A B C of Bee Culture may be ordered through "The Farmer's Advocate" office for \$1.40, postpaid. "On the Hive and the Honey-bee" will be supplied at \$1.50 net, or \$1.60 postpaid.—Editor.]

CO-OPERATION WITHOUT ORGANIZATION.

Editor "The Farmer's Advocate":

In my humble opinion, co-operation in marketing honey is a matter that requires considerable forethought, for many reasons. One reason is that we do not have a regular crop of honey every year to harvest or dispose of. Again, organization has to take place among the honey-producers before co-operation can be established. Beekeepers are only human beings, and, as a rule, would not care about entering into a thing they did not see their way clear to get some benefit from. Of course, the beekeeper who is sure of having a crop of honey to dispose of every year, over and above what his home market demands, would say co-operation for him is all right, but, as to the beekeeper who can dispose of his honey in the neighborhood of where it was produced to good advantage, no co-operation is necessary for him. For the beekeeper who has to rely on the wholesale houses, ship long distances, or send to a foreign country to dispose of the product, co-operation should be beneficial. But, sir, when it comes to the question of ways and means, there is where the shoe pinches. Would the profits to be derived from co-operation be sufficient to warrant those of the class which I have just mentioned in going to the expense of entering into a body corporate along these lines, under existing circumstances in Ontario? I would say, I think not. Of course, some of the very large honey-producers in South-western Ontario, who are reasonably sure of a surplus crop to dispose of every year, may think different, and may be right in thinking so. But have not they already opened up a market—and a good market, too—for their supply of honey across the sea? Mr. McEvoy says they have. And now, sir, as I may not be called upon to touch this subject again, I would advise all honey-producers, without exception, to look closer after the home market, by trying to get their honey, as much as possible, from the apiary direct to the table of the consumer, without the intervention of the middleman, and to always aim at producing the very best article possible, and you will be surprised how the home market's demand will increase, to the benefit of both producer and consumer; and, in a word, co-operation between producer and consumer could and would exist, without the kind offices of a well-paid official to live on the fat of the land. Prescott Co., Ont. W. J. BROWN.

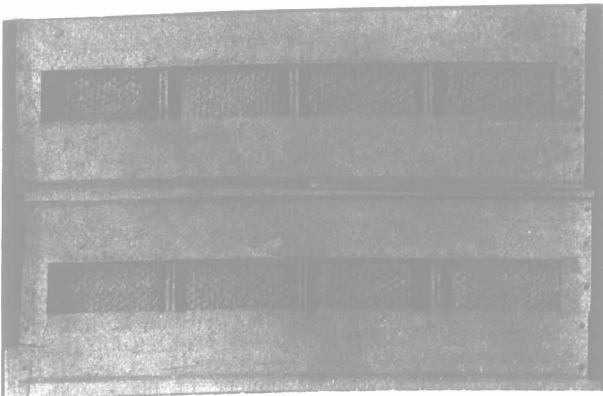


Working with Bees.

of the other bee-books since, I still consider this one the best for the novice. It is in encyclopedia form, therefore very convenient. It is the only one of the divers books on apiculture that is kept up to date by revising it every one or two years.

Langstroth's, Dadant's revised, on "The Hive and Honeybee," is also very good for the beginner. There are other books, to be sure, but I would recommend, as I have already said, the A B C of Bee Culture. It is a good idea to study this bee literature during the winter months, so one will be able to purchase wisely in the spring.

As transferring bees and combs from box hives into movable frame is a mussy job, especially so for the beginner, a colony of bees should be pur-



A Luxury Fit for the Gods.

chased in movable-frame hives. It is unwise to buy too early in spring, for then one cannot tell as easily as during fruit bloom the populous colonies from the weak ones. The bees should not be purchased nearer home—or the place they are to be kept—than one and one-half miles. The nearer bees are set within 1½ miles from their former location, the more will go back and be

When we consider what a palatable and wholesome food is honey, and how little expense and labor is involved in securing and caring for a few hives of bees, it seems passing strange that so few farmers take up beekeeping. The bees work for nothing and board themselves; and, besides storing a large quantity of surplus honey for the family and for sale, do a valuable work for the farmer by pollenizing his clover and fruit bloom. In one neighborhood, where bees are kept, farmers sold up to \$75 worth of alsike clover seed per acre last year, largely owing to the work of the bees, and one beekeeper in the same section sold \$3,000 worth of honey.

THE FARM BULLETIN.

THE STOCKMEN'S OUTLOOK.

Editor "The Farmer's Advocate":

This letter will be a rambling one, as I intend to touch on conditions in South Simcoe, and also ask a few questions, which, if answered, may help a goodly number of your readers. First, let me say that feeders, both of cattle and hogs, are pretty well disgusted with things in general this season. Those who sold their wheat and barley last fall at prices from \$1 to \$1.07, and 75c. to 90c., certainly did a good stroke of business. Through necessity, perhaps, as much as anything else, I sold both barley and wheat, and am glad of it. But acting on what used to be called wisdom, when everybody is going out of a certain line that is the time to go into it, I find myself with a big stock of pigs, and the only thing that has saved me this winter, with a large number of beef cattle on hand, has been a lot of well-saved clover hay, and a good supply of peas, which, mixed up with rough feed, I have been able to use to fair advantage. However, a problem presents itself as spring approaches. Is there anything that will carry pigs over cheaper than clover, which, by the way, is none too plentiful in some sections, owing to the drought of last summer?

Does rape do well if sown early in spring, or is there anything better for early feed?

I venture to predict that if next summer is an average one, clover not making a good general stand last season, and so many farmers dissatisfied with returns from feeding, that there will be more grain sold in this section than during any of the last twenty years. I might also say that Prof. Grisdale's figures of returns from grain of from \$7 to \$9 per acre do not apply to "Old South Simcoe."

Simcoe Co., Ont.

TOM G. ALLAN.

[Note.—As we understand it, Prof. Grisdale, in his speech last January at the Dairymen's Convention, was speaking of farms in Middlesex Co., on which grain-raising was the general system of farming carried on, and the net returns per hundred-acre farm were about \$700 to \$900. This would probably include some land in fallow, pasture, and hay. He did not mean that the revenue from the fields actually in grain amounted only to \$7 to \$9 per acre. As for hog prices, one swallow does not make a summer. The wisdom of the rule quoted is not disproven by a single instance of apparent failure. Mr. Allan may yet do well on both hogs and cattle. For swine pasture, alfalfa and clover are hard to beat; grass may be used. Rape is good, but not liable to come on very early. A mixture of oats and peas, or of oats, peas and rape, might be worth trying for early pasture, with reliance on another sowing of rape for later use.—Editor.]

THE BULWARK OF THE NATION.

Editor "The Farmer's Advocate":

It is one of the pleasures of my life to raise either hand or voice in whatever will help our country. It is manly to love one's country. It fills me with pride to think I am a Canadian, and I am proud of the country in which we live. Think of its great development in the last thirty years, and the almost unlimited future. There are no better inducements to be found in the world for young men starting in life than are found in Canada at the present time.

The nation always has depended, and always will depend upon the men who cultivate the soil for everything that goes to make life worth living. There is more intelligence, more true patriotism, more of good citizenship to be found on the farm than anywhere else in Canada. There is no place better fitted to develop a man than the country. It gives him better opportunities if he will only take advantage of them, and I would like to impress upon the fathers and mothers on the farm that while their children are growing not to allow them to look forward to the time when they can leave home for the more attractive outward show of city life. Many young men who left the farm for the city have succeeded well in life, yet their number are few when we think of the thousands who have met failure. Think of the many instances one can recall of the beginning of a downward course to many a farmer's son, who had left the old farm with all its pleasing associations and happy memories, surrounded with the beauties of nature and all that helps to build up a pure young life. The time will never come when this or other countries can afford to lose sight of the interest of the people who live on the land.

What has Canada, what have our citizens, what have we all to depend upon? There are four sources from which everything comes that is worth having, namely, our mines, forests, fisheries and our farms. At present our fisheries yield millions yearly; our mines are among the richest in the world; our forests the greatest in extent and value in America; yet the time may come when these will cease to return a revenue. But our farms are left, and they will last as long as the world exists, and with proper cultivation and care will sustain tenfold the population we have to-day.

Our cities, our churches, our schools, our universities, our lawyers, doctors, merchants, millers, everyone, makes his living out of the man who cultivates the soil, and this must go on in Canada for all time to come.

I look upon farming as the most useful and independent calling we have, and among the farmers of my acquaintance I cannot find a single instance of one who, having made the most of his time, has not succeeded,

although he began life with limited means. Luck is a fool. Pluck is a hero. I have better hopes for the success of a young man starting life with no help in view except his strong determination to overcome obstacles and to fight the battle of life bravely, than I have in the young man fitted out with a hundred acres of land, but lacking energy and determination.

One of the finest pictures in life to me is the old home on the farm surrounded with its beautiful shade trees, with its flower garden and lawn, and the other comforts which help to make life pleasant; the place where our boys and girls learn their first lessons in life, lessons never to be forgotten, where character is formed, and from there they go prepared to do their part in life.

Why should we cry down farming in our homes before our boys and girls since farming has done more to mould and make our country what it is than all the other industries together? Success nearly always comes to the man who has perfect faith in his calling. The boy leaves the farm because he has a false idea of the business which it affords him. He leaves the farm because he is very dissatisfied with its seeming drudgery, and, to his uneducated mind, its small profits and limited possibilities. He has no appreciation of the beautiful side of country life, or of the natural beauties surrounding him. To him the earth lacks interest because he does not understand it. He should learn to understand and measure what constitutes true living; also foreshadow the future of his city life, and compare it with his chances in the country; and if trained to weigh the good and the bad, the sense of pleasure and power on one side and of confinement and cramped opportunities on the other, he will generally elect to be and remain one of God's free creatures, and wrest from nature some of her hidden truths, which guard her secrets and hold her great stores of wealth.

Oxford Co., Ont.

JOHE C. SHAW.

ADVANCED LEGISLATION IN MANITOBA.

At the recent session of the Legislature of Manitoba, a pretty good grist of legislation was put through, some of it rather radical in character. Such of this as is of general interest we have synopsis. The most advanced legislation was that in connection with the taking over of the telephone, the Motor-vehicle Act, and the amendments of the Noxious Weeds Act. According to Western opinion, the amendment of the grain exchange did not really amount to very much. Exchange members kept up quite a noise, but it is alleged that this was done merely to make the grain-growers think they had the "hooks in."

REGULATING THE GRAIN EXCHANGE.

One of the most prominent amendments brought in this session is that respecting the Winnipeg Grain and Produce Exchange, which, under the new regulations, can no longer be an exclusive corporation, as it has been in the past. Henceforth, all proposed by-laws must be published in the Manitoba Gazette, and in some daily and weekly newspaper published in Winnipeg. Immediately after the drafting of each by-law, also, a copy must be sent to the prothonotary of the Court of the King's Bench at Winnipeg, without whose approval no by-law can have any effect. Other amendments provide for the admission of the public, protect against expulsion without good cause, and against members being crowded out of trading privileges. Reputable firms and corporations shall be admitted to trading privileges, but not to membership when any member or shareholder is a member of the Exchange. It is also provided that the Minister of Agriculture, or his assistant, shall examine the books, etc., every year; that the public is to be admitted during trading hours; that the prices are to be posted up in plain view every half hour; and that no hartering with seats shall be allowed, the maximum price of a seat being \$2.50. Other regulations refer to the prices members shall pay, the amount of commission to be charged, etc.

NOXIOUS WEEDS.

By an amendment to the Noxious Weed Act, Canada thistle and perennial sow thistle are taken out of the list and placed in a class by themselves. Farmers are made responsible for the destruction of weeds on the road allowances adjoining their property to the extent of half the width of the road, all weeds to be destroyed before the 31st of July. Sufficient inspection, and the imposition of fines amounting to not less than \$25, and not over \$100, for neglect of weed-cutting, are provided for; the councils of municipalities to see to the destruction of weeds on unoccupied land.

RE AUTOMOBILES.

By an Act regulating automobiles, no motorman shall be allowed to drive with undue haste; each motorman must also lend all necessary assistance to persons meeting him with horses; he must bear on his person a certificate of identification, issued by the municipal commissioner; must have the number of his car in full view at both front and back; and must modify his speed at crossings and in cities, towns and villages. In places where passing is difficult, the motor must stop until the horse has passed. It must also be stopped whenever the driver of a horse signals by raising his hand. For violation of this Act, the fine for the first offence is not more than \$25, with costs, and for subsequent offences not more than \$50, with costs.

SEED-GRAIN FINANCING.

Another Act designed to assist new or unfortunate settlers, enables municipalities to borrow limited amounts of money for seed-grain purposes, the limit not

to exceed \$20,000, to be paid back to the person, bank, or corporation at such time as the borrower or lender may agree, with interest not exceeding 8 per cent. per annum. Promissory notes may be given by the municipalities borrowing; but no money shall be borrowed or lent under this Act, save for the purpose of furnishing seed grain. The amount of grain allotted to each person shall not exceed \$200 in value, the distribution to be left to the reeve and secretary-treasurer.

THE LIQUOR ACT.

By the "Liquor License Act" amendment, the councils must carry out without delay the wishes expressed in a petition signed by twenty-five per cent. of the ratepayers. The disputed three-fifths clause has also been removed so that it is now possible to carry or repeal local option by a mere majority. The provision that the voting on this by-law shall take place at the same time as the annual municipal elections will save unnecessary expense and time. The results of the voting must immediately be made public. As the old Act stood, a local-option by-law had to stand two years before a vote for repeal could be made; now a repeal may be made at the time of any municipal election following proper notice. In case of appeal, also, a fresh vote on the by-law may be made at the next election. Other regulations apply to prevention of "signalling apparatus" between bar-rooms and other parts of the house or other points in the vicinity; to the serving of free lunches, or holding concerts in bar-rooms, etc.; and provide that no druggist can sell liquor without the buyer presenting a doctor's certificate. Interdiction, also, will be more frequent, and more easily accomplished. Any person who has been convicted of drunkenness five times in any one year may, on the sixth time, be considered an incorrigible drunkard, and be placed in confinement for one year.

RAILWAY REGULATIONS.

Hitherto railways have made such rates as they pleased. Now, the Government provides that all rates must be submitted and approved by the Railway Commission.

By the amendment to the Public Schools Act, provision is made for the conveyance of children to consolidated schools; also that stable accommodation shall be provided wherever children must drive to school.

Promise is given that the Telephone System, now owned by the Government, shall be extended; and an Act forming a Department of Telephones and Telegraphs for Manitoba has been passed, by which provision has been made for taking over all local 'phones, thus forming one complete provincial system.

AMERICAN PORK AND THE ANTI-DUMPING CLAUSE.

Below is a resolution, moved by D. C. Flatt, President of the Dominion Swine-breeders' Association, seconded by R. H. Harding, and endorsed by the Executive of the aforementioned organization, praying that an investigation be made by the Canadian Government into the matter of the importation of pork by Canadian packers, and suggesting that in case such investigation should establish the facts alleged, the anti-dumping clause of the tariff be made to apply against American pork purchased on glut markets in the United States and imported into Canada.

A committee, composed of President Flatt, W. O. Sealey, of Wentworth; Hon. John Dryden, Toronto, and Joseph Featherstone, ex-M. P., of Streetsville, has presented the resolution to the Dominion cabinet, represented by Hon. Sydney Fisher, Minister of Agriculture; Hon. Wm. Patterson, Minister of Customs, and Hon. W. S. Fielding, Minister of Finance, with the result, we are informed, that an investigation has been already instituted, and the Executive of the Dominion Swine-breeders' Association are hoping for something better in the near future. If, say the swine breeders, American pork products are allowed to come in at the same rate as they have been coming in at recently, the pork industry in Canada will be seriously crippled. Hogs in Buffalo have been recently bringing around 5 cents per pound, and the same price has been prevailing here. Does it look reasonable, the producers ask, that our packers should be importing American pork products and paying the duty of 2 cents per pound on cured meats and 3 cents on green? Hog raisers believe that such apparent evidence as this, coupled with the fact that this meat is said to have been brought in at Stratford at a cost of 7½ cents per pound (which is less by far than actual cost to the American packer), furnishes ground for the application of the anti-dumping clause, and that in the event of this not being put in force, the duty should be increased by 2 cents a pound.

It would seem that the consumer is deriving no benefit from the low price of hogs, pork retailing as high to day as when hogs were selling at 7c. on foot. In giving publicity to these claims and to the resolution submitted, we take occasion to invite expression of opinion on the subject, not only in the way of contributions, but, also, as petitions. Following is the resolution presented by the Dominion Swine-breeders' Association's committee to the Dominion Government:

Whereas the pork-producing industry is a very large and important one in Canada at present, and we appreciate the efforts of the Government in rearranging the tariff so as to encourage its growth and improvement during the past, the results of which efforts have

been most satisfactory until recently, when we find that in the face of the present tariff large quantities of U. S. pork are coming into Canada, thereby reducing the Canadian price to producers of live hogs to such an extent that under present conditions the industry does not afford a livelihood, and, in order that an effort be made to remedy this condition of things, it is moved by D. C. Flatt, and seconded by R. H. Harding, and unanimously carried, that we members of the Swine-breeders' Association of Canada request the Hon. Mr. Fisher, Minister of Agriculture, to cause immediate inquiry to be made as to the quantities of pork in various forms coming into Canada at present from the United States. Also inquiry as to the tariff head under which it comes, as well as investigation of the correctness of the price, weights, etc., as represented for tariff purposes, and, also, that inquiry be made from those importing same as to the profitable business results of such transactions, and if, after so doing, all these matters prove correct and regular, then we can only conclude that at the present time Canada is being made the slaughter market for over-production of the United States, and, therefore, the anti-dumping clause tariff should apply, for while we are all moderate-tariff men, yet we believe that on any line the tariff should be so fixed as to regulate the trade of so important an industry most favorable to encouraging home production, for with the present prices the packer receives in Britain, as well as the present prices the packer receives in Canada, the home producer should be receiving more than present prices per pound, on foot.

While we hesitate to trouble your Department in the matter, we are prompted to do so by the alarming circumstances that there are 50 per cent. fewer young hogs produced to-day than there were six months ago, entirely as a result of low prices and the unfair competition, whereas if properly encouraged, the resources of Canada are quite capable of producing at the present time double the quantity of six months ago, instead of half, and at all times all the packers can possibly use for both home and export trade.

In the above matter we feel conscious that we are voicing the sentiment of every farmer in the whole Dominion, or at least 95 per cent. thereof, and if you deem it advisable definite assurance as to this would be forthcoming by petitions.

The packers can buy a stock of United States product on a low glut market and tide themselves over until conditions are favorable to stocking up again. The fact of the United States being able to produce corn much cheaper than we can in Canada, puts them in a position to pay the 2c. duty, and trade with us their surplus dump product.

While the matter is up, we deem it advisable to

further draw your attention to the splendid reputation Canadian pork has in Britain, and to the importance of guarding this reputation, and providing for the profits accruing therefrom coming directly to the Canadian producers, and in that way avoiding the possibility of packers who own packing houses in both the United States and Canada as well, diverting a part of this profit to the United States by way of substituting the United States product for Canadian, made possible by the lack of thorough branding of the Canadian product, all this to the end that the British consumer, who is so anxious to support the "Made in Canada" sentimental preference, as well as securing better quality, may be protected from being deceived by the substitution of the United States product.

BRANDON WINTER FAIR.

Manitoba's Winter Fair, held at Brandon, March 10th to 13th, proved quite a satisfactory success, the attendance being quite large, and the horse and swine department strong in numbers and quality, while some very good cattle were also shown, though a number of entries were not in as good condition as could be desired.

Percheron horses made an unusually strong showing, there being 15 entries of aged stallions, 12 of which were out. The first award went to a gray belonging to Robert Reid, of Forest; second to J. B. Hogate's black Bonton, which many horsemen considered should have been an easy first; third to Hogate's Macaire, and fourth to Upper's Robosse.

Clydesdales made a brilliant showing. Nine aged horses were on parade, most of them veterans of former contests. W. H. Bryce's Perpetual Motion, looking fresh as ever, was first, though closely pressed by Hogate's Mark Twain, which took second place. McMillan, Colquhoun & Beattie's Elator Prince was third, and Hogate's Golden Promise, fourth. In a class provided for horses foaled in 1904, Sir Wm. Van Horne's Lord Ardwall was first; Flash Baron, owned by the Chater Association, second; John Graham's Kasongo, third, and Blacon Model, from the Club Stables, Brandon, fourth. In a large class of three-year-olds, Bryce's Baron of Arcola was placed first; Dr. Henderson's Baron Shapely, second, and John Graham's Baron Ajax, third.

For the championship, Lord Ardwall won, and Perpetual Motion was the reserve.

In the class for mares foaled before January, 1904, Bryce's Lady Rotha, by Royal Favorite, was first, and she was also awarded the female championship; May Morn, the first-prize three-year-old filly, belonging to Jas. Burnett, Napinka, being reserve.

In aged Shire horses, Hogate's Grimsarch Admiral

was first, and next to him was Advance, shown by John Stott, Brandon.

In a strong class of Hackney stallions, Lord Texas, shown by McMillan, Colquhoun & Beattie, captured first award, second going to Inverness Royalist, owned by Dr. Henderson, of Carberry, and John Graham was third with Scottish Crest.

PROFESSORS ABROAD.

G. C. Creelman, President, and R. Harcourt, Professor of Chemistry at the Ontario Agricultural College, sail for Naples, Italy, this week, on a tour to investigate agriculture in Europe. President Creelman intends to return in June, but Prof. Harcourt will go into Germany and spend some time there. He expects to return to the College this fall, but may possibly remain until Christmas of this year.

FORTHCOMING EVENTS.

May 4th to 9th.—Canadian National Horse Show, Toronto.

May 6th to 9th.—Montreal Horse Show.

May 6th and 7th.—Glasgow National Stallion Show.

June 18th to 20th.—Galt Horse Show, Galt, Ont.

June 18th to 27th.—International Horse Show, Olympia, London, England.

June 30th to July 4th.—Royal Agricultural Society's Show, at Newcastle-on-Tyne.

June 29th to July 9th.—Dominion Exhibition, Calgary, Alta.

July 11th to 17th.—Winnipeg Industrial Exhibition.

July 21st to 24th.—Highland Society's Show, at Aberdeen.

MONEY IN CHILLED PLOWS.

A despatch from South Bend, Ind., last week noted that the will of James Oliver, inventor of the chilled plow, proprietor of the largest plow plant in the world, public benefactor and wealthiest man in Indiana, had been filed for probate. Family ties are shown in the distribution of the vast fortune, which is reported to amount to \$68,000,000.

CLOSE SEASON FOR BASS.

An order in Council has been passed making the close season for bass in the Province of Ontario from April 15th to June 15th, both days inclusive, except in that portion of the River St. Lawrence, extending from Kingston to Prescott, where the close season shall be from April 15th to June 9th.

GOSSIP.

Mr. James Begg, St. Thomas, Ont., breeder of business Ayrshires, joins the ranks of "The Farmer's Advocate" advertisers with this issue, and writes: "I am breeding for size, production, quality and teat and udder development, having a small herd that are up-to-date, and will yet be heard from, if good milking qualities count."

BIRMINGHAM SHORTHORN SALE.

At the annual Birmingham (England) Show and Sale, March 4th to 6th, 349 Shorthorn bulls were sold for an average of \$270, and 110 females for an average of \$202. The highest price was 460 guineas (\$2,415), which was paid by Mr. McLennan, for South America, for Mr. C. F. Raphael's yearling bull, Shenley Baronet. The same buyer paid 450 guineas for Mr. J. de Rothschild's junior yearling, Ascot Vulcan. Twenty-six others sold for prices ranging from 100 guineas to 420 guineas.

THE GARDNER-PEARSON SALE.

Remember the auction sale, on April 8th, near Meadowvale, Peel County, Ont., of the entire herd of Shorthorns belonging to Mr. F. A. Gardner, Britannia, and 20 head from the Valley Home herd of S. J. Pearson, Son & Co., Meadowvale. There are a dozen excellent young bulls of serviceable age, the grand 5-year-old imported bull, Gold Mine =50342=; also a roan three-year-old bull, Scottish Archer =59603=, from imported sire and dam; his sire a Toronto senior champion. Several of the younger bulls are sons of Royal Diamond 2nd, by Royal Diamond, sold at the Uppermill dispersion for \$5,000, and out of an imported Kinellar Mina cow, by the Duthie-bred Lucky Archer, by Scottish Archer. The females in the sale are mostly of popular Scotch-bred families, with a number bred from the earlier importations and of deep-milking strains. Now that winter feeding is well over, and prices for beef cattle are looking up and likely to advance steadily, this sale offers a favorable opportunity to secure good stock at moderate prices. This sale, postponed

owing to the snow blockade, will take place at the farm of Mr. W. B. Gardner, one mile from Meadowvale Station, on the Toronto-to-Owen-Sound branch of the C. P. R., three miles from Streetsville Junction (C. P. R.), and five miles from Brampton (G. T. R.). Conveyances will meet the morning trains at these stations. The same animals will be offered as catalogued, as the sale was not commenced on March 3rd. Those who have received catalogues are requested to bring them to the sale. Remember the date, Wednesday, April 8th.

SALE DATES CLAIMED.

March 26th.—McGarvin Bros., Chatham, Ont., imported and Canadian-bred Percherons and road horses.

April 2nd.—Oak Park Stock Farm Co., Brantford, Ont., Hackneys, Shropshires, Barkshires, and seed grain.

April 8th.—F. A. Gardner, Britannia, and S. J. Pearson, Son & Co., Meadowvale, Ont., joint sale, Shorthorns.

June 4th.—John Dryden & Son, Brooklin, Ont., Shorthorns.

The Clydesdale Horse Association of Canada has decided to adopt as their crest the head and crest of Baron's Pride, surrounded by a large horse-shoe. A die of the crest will be made, and medals awarded by the Association will be stamped with it.

An Alabama man, meeting an old colored man formerly in his service, put to him the usual question: "Well, Jed, how are you to-day?" "Tol'able, sah, tol'able!" cautiously replied Jed. "Ah'd be all right, sah, if it wa'n't for de rheumatism in mah right laig." "Ah, well, Jed, we musn't complain," said the questioner. "We're all getting old, and old age does not come alone." "Old age, sah!" was the indignant protestation of Jed. "Old age ain't got nuthin' to do wid it, sah. Heah's mah other laig jest as old, an' dat's sound an' soople as kin be!"

TRADE TOPICS.

Farmers, before purchasing seeds for spring sowing, should look up the advertisement of the old and reliable seed house of the Wm. Rennie Co., of Toronto, and write for the "Rennie Seed Annual," which is free for the asking, and gives much useful information as well as how to order seeds direct from their house.

WRONG PRICE ON HORSE-CLIPPING MACHINE.

In our issue of March 12th there appeared an advertisement of the Stewart No. 1 horse-clipping machine, stating the price to be \$6.75. This advertisement was inserted by us through error, and the Chicago Flexible Shaft Company, who manufacture this machine, have requested us to explain to our readers that the price of \$6.75 on this machine is f. o. b. their factory at Chicago. Customers who order from them direct are obliged to pay transportation and duty on the machine; but it may be had from dealers in Canada at \$8.75. The duty on these machines is considerable, and when that is added to the transportation it makes it impossible for our dealers over here in Canada to sell the machines below \$8.75, and if you were to order the machine direct from the manufacturers, and paid duty and transportation, it would cost you, laid down, a little more than you can buy them from your dealer for. The practice of clipping horses in the spring is now recognized as being the proper thing to do, and these machines are so inexpensive and so well made that every man who owns horses ought to have a machine in his stable.

A suburban minister, during his discourse one Sabbath morning, said: "In each blade of grass there is a sermon." The following day one of his flock discovered the good man pushing a lawn mower about his garden and paused to say: "Well, parson, I'm glad to see you engaged in cutting your sermons short."

THE SPICE OF LIFE.

On Mark Twain's seventy-second birthday a Hartford clergyman said to him:

"No wonder he finds happiness in old age. All the aged would be happy if they were as sympathetic and as kind as he. He is continually going out of his way to please others, and the result is that he is continually pleasing himself."

"Listen, for instance, to the quaint compliment he paid me the last time he came to hear me preach. He waited for me at the church door at the service's end, and shaking me by the hand, said, gravely:

"I mean no offense, but I feel obliged to tell you that the preaching this morning has been of a kind that I can spare. I go to church, sir, to pursue my own train of thought. But I couldn't do it. You interfered with me. You forced me to attend to you, and lost me a full half hour. I beg that this may not occur again."

The venerable and learned Mr. Justice John M. Harlan, during a game of golf at Chevy Chase, explained the intricacies of evidence to a young man.

Mr. Justice Harlan illustrated well the case of conflicting evidence—how, when the statements of two witnesses are opposed, the more probable statement is to be accepted.

"Usually, in conflicting evidence," he said, "one statement is far more probable than the other, so that we can decide easily which to believe."

"It is like the boy and the house hunter. A house hunter, getting off a train at a suburban station, said to a boy:

"My boy, I am looking for Mr. Smithson's new block of semi-detached cottages. How far are they from here?"

"About a 20-minutes' walk," the boy replied.

"Twenty minutes!" exclaimed the house hunter. "Nonsense! The advertisement says five."

"Well," said the boy, "you can believe me or you can believe the advertisement; but I ain't tryin' to make no sale."

THE TRADERS BANK OF CANADA

Incorporated 1885.

Capital and Rest, \$6,251,960

75 BRANCHES IN CANADA.

Learn to Save

Many people are good workers, but poor savers. Learn to save in the working days—and thus provide for the days when sickness and old age come.

The best provision is a **Savings Account** in the Traders Bank. \$1.00 opens an account, on which interest is compounded 4 times a year.

MARKETS.

TORONTO.

LIVE STOCK.

Receipts of live stock at the City and Junction markets last week were not as large as the week previous, being as follows: 183 carloads, composed of 2,416 cattle, 3,806 hogs, 516 sheep and lambs, 213 calves, and 162 horses. Few finished cattle, either butchers' or exporters, were offered. On account of light deliveries, trade was brisker, with prices a little better than in our last report.

At the Junction market on Monday, March 23rd, receipts of cattle were 715; quality fair; trade firm, at 10c. per cwt. advance for good cattle; export steers, \$4.85 to \$5.25; bulls, \$4 to \$4.50; prime picked butchers', \$4.70 to \$5; good, \$4.50 to \$4.75; medium, \$4.20 to \$4.40; common, \$3.90 to \$4.20; milk cows, \$35 to \$50; calves, \$6 to \$7 per cwt.; sheep, \$5 to \$5.25; lambs, \$6.75 to \$7.25; hogs, \$5.50 for selects, \$5.25, f. o. b. cars, country points.

Exporters.—Last week steers sold at \$4.90 to \$5.25, the bulk selling at \$5 to \$5.15; several lots brought in as exporters were bought as short-keep feeders at \$4.75 to \$4.90, for cattle weighing 1,250 lbs. each. Export bulls sold at \$3.75 to \$4.50.

Butchers'.—Prime picked lots, which were scarce, sold at \$4.75 to \$5; loads of good, \$4.40 to \$4.65; medium, \$4.10 to \$4.30; common, \$3.60 to \$4; cows, \$2.50 to \$3.75.

Milkers and Springers.—Few choice or even good milkers were offered, the bulk being of cows badly wintered. Prices ranged from \$30 to \$50, with one or two of the best at \$60 each.

Veal Calves.—Good quality calves are scarce. Prices ranged from \$4 to \$7 per cwt. Choice, new-milk-fed calves are worth \$7.50 per cwt.

Sheep and Lambs.—Export ewes sold from \$1.65 to \$5 per cwt.; rams, \$3.50 to \$4; yearling lambs of good quality, \$7 to \$7.50 per cwt.; common yearlings, \$5.75 to \$6.75 per cwt.; spring lambs, sold from \$7 to \$10 each, but choice quality would bring \$12.

Hogs.—Prices were advanced. Selects, fed and wintered at the market, sold at

\$5.40; at country points, f. o. b. cars, \$5.15, which would mean that farmers were getting \$5 per cwt., or a little better. Dressed hogs, on the farmers' market, sold at \$7.50 per cwt.

Horses.—At the Union Stock-yards Horse Exchange, on Monday, March 16th, over 200 horses were on sale. The attendance was large, and included farmers and horse dealers from many parts of Ontario, besides one from Montreal and two from the Northwest. The chief buyers were farmers who were looking for general-purpose and light-draft horses, weighing from 1,200 to 1,400 lbs. each, these being in the best demand. Driving horses were slow sale. About 100 horses were disposed of by auction, and many more by private sale. Drafters sold from \$165 to \$200; general-purpose and delivery horses, \$150 to \$180; drivers, \$125 to \$160; serviceably-sound workers, \$60 to \$125. These sale stables have become very popular, and dealers speak highly of the manager, Mr. Smith.

BREADSTUFFS.

Wheat.—No. 2 white winter, 93c. to 94c., outside; No. 3 red, 93c.; No. 2, mixed, 92c.; goose, 90c. to 91c. Manitoba, No. 1 Northern, \$1.21; No. 2 Northern, \$1.18.

Barley.—Dealers are not anxious to buy, and, at present, it is difficult to get a correct quotation. At the call board, no quotations were made. On the Toronto farmers' market, barley sold at 60c.

Oats.—No. 2 white, 52½c., on track, at Toronto; No. 2, mixed, outside, 48c.

Rye.—No. 2, 84c.

Peas.—No. 2, 86c., outside.

Buckwheat.—No. 2, 67c.

Corn.—Market firm; No. 3 yellow, American, 71c. to 72c., Toronto.

Flour.—Ontario patents, \$3.50 bid for export; Manitoba patent, special brands, \$6; second patents, \$5.40; strong bakers', \$5.80.

Bran.—Car lots, bags included, \$25 to \$26, at outside points.

Shorts.—Scarce, at \$25 to \$26, car lots, in bags.

COUNTRY PRODUCE.

Butter.—Patent prices are a little firmer, but dealers expect lower quotations at an early date. Creamery, pound rolls, 32c. to 33c.; separator dairy, 30c. to 31c.; store lots, 26c. to 27c.

Eggs.—New-laid eggs are plentiful and cheaper at 22c. to 23c.; cold-storage eggs are about done, and the few left are selling at 19c. to 20c.

Cheese.—Market firmer. Large is selling at 13½c. to 14c.; twins, 14c. to 14½c.

Honey.—Market steady. Strained, in large tins, 11c. to 12c.; small tins, of 5 to 10 lbs., 12c. to 13c.; combs, \$2.75 to \$3 per dozen.

Potatoes.—Market easier. Car lots, on track, at Toronto, sell at 90c. to 95c. per bag.

Poultry.—Receipts light. Prices firmer at following, for dressed: Turkeys, 18c. to 20c.; geese, 10c. to 11c.; chickens, 14c. to 15c.; ducks, 12c. to 13c.; old fowl, 10c. to 11c.

Beans.—Market firm. Primes, \$1.70 to \$1.75; hand-picked, \$1.80 to \$1.85.

Straw.—Car lots, of baled, \$9 to \$10, on track at Toronto.

Hay.—Baled hay, in car lots, \$16 to \$17, on track at Toronto.

TORONTO FRUIT MARKET.

There is little change in the fruit market prices. Choice No. 1 Spies, \$3 to \$3.50 from farmers; dealers asking \$4; No. 2 Spies, \$2.50 to \$2.75; Kings and Baldwins, \$2.50 to \$3; Greenings, \$2.25 to \$2.75; Talman Sweets, \$2; dried apples, 5½c. to 5¾c. per lb.; evaporated apples, 7c. to 7½c. per lb.

TORONTO SEED MARKET.

The Rennie Seed Co. reported little change in the seed market prices. They report their selling prices for re-cleaned seeds as follows: Alsike, fancy, per bushel, \$10.50 to \$12; No. 1, \$9.50 to \$10; red, fancy, \$13.50 to \$14.50; No. 1, \$12.50 to \$13; alfalfa, per bushel, \$12.50 to \$13.50; timothy, per 100 lbs., \$7 to \$8.50.

HIDES AND SKINS.

The E. T. Carter & Co., 85 Front St., East, Toronto, were paying the following prices: Inspected hides, No. 1 cows and steers, 5½c.; inspected hides, No. 2 cows and steers, 4½c.; country hides, 3½c. to 4c.; calf skins, 8c. to 9c.; kips, 6c. to 7c.; horse hair, per lb., 25c.; tallow,

per lb., 4½c. to 5½c.; lamb skins, 90c. to \$1 each.

CATTLE MARKET NOTE.

The best load of export cattle seen this year at the market, of which there were eighteen in number, were brought in by Daniel Murphy, of Wellington Co., Ont., and delivered to the firm of Maybee, Wilson & Hall, who shipped them on order to the British market. They were fed by Mr. Murphy's sons on their father's farm at Mount Forest, and the boys certainly deserve great credit for having produced such fine cattle. These eighteen steers were bought as feeders last fall at the city market, when they weighed 1,090 lbs. each, from Laidlaw & Macdonald. When they were shipped on Wednesday from the Toronto market, for export, they averaged 1,430 lbs. each, having gained 340 lbs. each.

MONTREAL.

Live Stock.—Owing to the number of fast days, the consumption of meat has been much smaller of late, and butchers are not buying cattle so eagerly as before. As a result, surplus stocks of both live and dressed animals were rather larger than usual last week, notwithstanding that the offerings also showed a slight falling off. On the whole, prices continued about steady, and the quality of the stock showed quite a little improvement. Choice cattle were selling at 5c. to 5½c.; fine, 4½c. to 5c.; good, 4½c. to 4¾c.; medium, 3¾c. to 4¼c.; common, 3c. to 3½c., and inferior down to 2½c. The supply of sheep and lambs was on the light side, and, as a result, a somewhat stronger feeling was in the market, prices being a fraction higher. Some demand was noticeable from outside buyers, and sheep sold at 5c. to 5½c. per lb. Lambs sold at 5½c. to 6½c. per lb., according to quality, for yearlings, and \$7 to \$10 each for spring. Calves have been coming forward more freely, and selling at \$2 to \$6 each. Live hogs, owing to lighter supplies, advanced in price to \$5.90 to \$6.10 per 100 lbs.

Horses.—Market dull. Heavy-draft, 1,500 to 1,700 lbs., \$250 to \$300 each; light-draft, 1,400 to 1,500 lbs., \$225 to \$275 each; good blocks, 1,300 to 1,400 lbs., \$200 to \$225; express horses, \$150 to \$225; common plugs, \$50 to \$75 each, and choice saddle and carriage horses, \$300 to \$350 each.

Dressed Hogs.—Prices were about ¼c. higher. Butchers were making purchases freely, and were paying 8c. to 8½c. per lb. for choice abattoir-dressed, fresh-killed hogs. Country-dressed, about 50c. below. Very fair demand for provisions of all kinds. Pure lard, 11½c. to 12c. per lb., and compound, 8½c. to 9½c.

Potatoes.—Market rather unsettled. Recent favorable weather and good roads brought forward quite a quantity, and prices were a shade lower than previously. It is said, also, that there were more potatoes in the East than was expected, and that this would probably occasion a decline before long. Dealers claim to be buying at 74c. to 76c. per 90 lbs., carloads, on track, Montreal, for reds, and at 80c. to 90c. for whites, according to quality, and selling at 82c. to 88c. for reds, and 85c. to 95c., broken lots, on track, or at 90c. to 95c., in bags of 90 lbs., for reds, delivered into store, and at \$1 to \$1.05 for whites.

Eggs.—The market experienced a considerable decline last week, due to larger offerings of new-laid. Prices dropped to 24c. per dozen, for new-laid eggs, candled; limed, 19c.; cold-store about 18c. By Monday, 23rd, new-laid dropped to 22c.

Butter.—The market for butter took an unexpected course. Last week some of the largest merchants began offering butter at a decline. Apparently competition set in, for presently prices had developed quite a weakness. Towards the end of the week purchases were being made by grocers at 28½c. to 29c., for October Townships. It is thought, however, that the quality was not so fine as that previously sold at several cents higher. Single packages would probably

sell at 30c. to 31c., and small packages at 31c., and occasionally 32c.

Cheese.—Market dead. Prices steady; Ontario colored being quoted at 13½c. to 13¾c., and white at 13c.

Grain.—No. 2 white, carloads, in store, are 53c. per bushel for Eastern Canadas; 49c. to 49½c. for No. 3, and 48c. to 48½c. for No. 4; 46c. to 47c. for rejected, and 49½c. to 50c. for Manitoba rejected.

Flour.—Market was fairly active, though not quite the rush there was a few weeks ago. Prices, at \$6.10 for Manitoba spring wheat first patents, in bags, and \$5.50 for seconds. Ontario patents are \$5.25 to \$5.75 per bbl., and straight rollers, \$4.50 to \$5.

Feed.—Demand for all sorts of feed was good last week. Manitoba bran, in bags, \$23 per ton, and shorts, \$24, Ontarios being about the same figures. Ground oil cake is encircled for, and prices are \$1.70 per 100 lbs., gluten meal being \$1.50 per 100, exclusive of bags.

Seeds.—Strong market for all kinds of seeds, and some dealers look for higher prices on clover. They have been selling at \$22.50 to \$24 per cwt. for red clover; \$17 to \$20 for alsike; \$21 to \$22 for alfalfa, and \$6.25 to \$7.50 for timothy.

Hay.—No. 1 timothy, \$15.50 to \$16.50; No. 2, \$14 to \$15; clover mixture, \$12 to \$13, and clover, \$11 to \$11.50.

Hides.—Prices last week showed no change whatever as compared with the week before. The quality is very poor, and demand is as dull as it could well be. There is practically nothing going on.

CHICAGO.

Cattle.—Steers, \$5 to \$6.65; cows, \$3.40 to \$5.25; heifers, \$3.40 to \$5.60; bulls, \$3.50 to \$4.80; calves, \$5.50 to \$6.85; stockers and feeders, \$3.25 to \$5.10.

Hogs.—Choice heavy shipping, \$4.95 to \$5.02½; butchers', \$4.90 to \$5; light mixed, \$4.80 to \$4.95; choice light, \$4.80 to \$4.95; packers, \$4.60 to \$4.90; pigs, \$3.50 to \$4.45; bulk of sales, \$4.90 to \$4.95.

Sheep and Lambs.—Sheep, \$4.50 to \$6.50; lambs, \$6 to \$7.85; yearlings, \$6.25 to \$6.85.

BUFFALO.

Cattle.—Prime steers, \$5.75 to \$6.

Veals.—\$5 to \$9.25.

Hogs.—Heavy, \$5.30 to \$5.35; mixed, \$5.35; Yorkers, \$5.25 to \$5.55; pigs, \$4.25 to \$4.84; roughs, \$4.50 to \$4.75; dairies, \$5.10 to \$5.30.

Sheep and Lambs.—Lambs, \$5 to \$8.35; yearlings, \$7 to \$7.50; wethers, \$6.75 to \$7.

BRITISH CATTLE MARKET.

London.—London cables, 10½c. to 12½c. per pound, dressed weight; refrigerator beef, 9½c. per pound.

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 must be enclosed.

Miscellaneous.

BUTTER QUOTATIONS.

Are the reports of the Toronto butter market, as published in "The Farmer's Advocate," based on the wholesale prices of butter, delivered in Toronto? Or, are they jobbing prices of commission men to retailers? W. G. M.

Ans.—The prices quoted for butter are from wholesale commission houses, who sell consignments. When sold, they deduct their commission. For instance, the Locust Hill Creamery consign their butter to Butherford & Marshall, and have been getting 34c. to 35c. per lb., but have to pay Mr. Butherford's commission out of this. The Locust Hill butter retails at 38c., and sometimes 40c. per lb.



**Life, Literature
and Education.**

[Contributions on all subjects of popular interest are always welcome in this Department.]

BIOGRAPHICAL SKETCHES.

Agassiz.

In all biography, perhaps, there is not the history of a finer character than that of Jean Louis Rodolphe Agassiz, the famous naturalist and geologist. From earliest childhood his life appears to have been marked by purity, affection, industry, joined to a mightiness of intellect and a genius for research which only belong to a born king among men. During his long career, he met, it is true, with many reverses, yet long ere he died the reward of his endeavors came to him, and he knew that he had accomplished the greatest aims for which he had lived.

Agassiz was born in Switzerland, May 28, 1807, in the Village of Motier, on the Lake of Morat. His father was a clergyman of no especial ability, but his mother appears to have been a woman of rare mental keenness. From the very first, she seems to have recognized an intellectual quality rather than a mere childish caprice in the lad's mania for natural science, and, perhaps, well for him, during those early, impressionable years, encouraged, rather than dissuaded, him from his passion, even when it found expression in turning the house into a museum and the back yard into a menagerie.

For long enough, however, even she did not recognize that her son's life-work might be bound up in such things. It was decided that he should be a physician, and so, when he reached the end of his primary schooling, he was sent first to Zurich, then to the Universities of Heidelberg and Munich to finish his education. He appears, throughout, to have been a conscientious student, yet it must have surprised his parents that, in his letters to them, he rarely spoke of his medical studies, but rather of the things he was learning in natural history, and of glorious rambles over the mountains or by the lakes with his friend, Alex. Braun, already a botanist of some note. They would doubtless have been more anxious regarding his medical career had they been able to look into his room, which, wherever he went, was speedily turned into a museum, with stones, shells and fossils occupying every available spot, stuffed animals ranged about the walls, turtles crawling about the floors, frogs and fish splashing about in temporary aquaria, and walls covered with drawings of birds, fish and skeletons. Upon one occasion he even kept a number of live birds as companions, permitting them to rest at will among the branches of some young pines placed for them in one corner of the apartment.

From the very beginning of his college course, Agassiz seems to have been the leading spirit of a band of young scientists, who were accustomed to "squeeze themselves in

among his specimens once a week to discuss scientific topics, and deliver, in turn, lectures upon natural history; but it was not until he had reached Munich that the idea of devoting his life to natural science seems to have entered his mind, and with such strength that he at once set about collecting material for a book on the anatomy and natural history of fresh-water fishes.

He immediately announced his intention to his parents, much to their chagrin. They had looked upon the profession of medicine as honorable and lucrative, and were in no mind to see their son embark upon a venture which promised so fickle a fortune as that which must await a wandering naturalist. "If it be absolutely essential to your happiness," his father wrote him, "that you should break the ice of the two poles in order to find the hairs of a mammoth, or that you should dry your shirt in the sun of the tropics, at least wait till your trunk is packed before you talk with us about it. Begin by reaching your first aim, a surgeon's diploma."

His mother wrote him in gentler strain, but not less-evident anxiety, a little feminine bribe, which, however, for the time, failed to move her obdurate son: "Nor are you made to live alone, my child. In a home only is true happiness to be found; there you can settle yourself to your liking. The sooner you have finished your studies (medical), the sooner you can put up your tent, catch your blue butterfly, and metamorphose her into a loving housewife." . . . Agassiz's reply to this blandishment can scarcely have been reassuring, but it most certainly shows the temper with which he was starting out in the world: "The man of letters should seek repose only when he has deserved it by his toil, for, if once he anchor himself, farewell to energy and liberty, by which alone great minds are fostered."

The result of the dispute was, however, a final agreement that if the youth, during the course of his studies, should succeed in making himself known by a "work of distinction," he should be permitted, having first taken his doctor's degree, to spend one year on natural science alone. . . . The "work of distinction," as was not then explained to the elder Agassiz, was even then well under way—a description of the Brazilian fishes brought home by Martius and Spix. This book, which was written in Latin, and dedicated to Cuvier, drew the attention of the scientists of Europe to the youth, and its success was no doubt an important factor in fixing his ambition. "I wish it may be said of Louis Agassiz that he was the first naturalist of his time."

Only the fire of genius itself could have carried Agassiz through the checkered career upon which he now rushed, full of high hope. His studies met, at every turn, with success, but the preparation and publication of his books was expensive. He was obliged to spend much of his slender means in research; to employ one and sometimes two artists to make his drawings, and to pay for the publication of his volumes, for which, when issued, the demand was, too often, not sufficient to raise him

above an almost distressing poverty. Yet he never faltered in his purpose. Careful in everything else, he was the veriest spendthrift where science was concerned, and only a hope of doing something magnificent for the scientific world could have justified him in the daring risks which he undertook.

In 1830 he obtained his degree of M. D., and went home, with his collections, to the little Swiss village, where for a time he practiced as physician, but devoted much more time and energy to this scientific pursuits. Here, however, he soon became restless and unhappy. He constantly wished to go to Paris, so that he might avail himself of the opportunity of that city, and be more in touch with the scientists of the age. Thence, accordingly, he set forth, with his artist, Dinkel, serene in the hope of weathering through somehow, chiefly by the help of a small allowance from an indulgent uncle. In Paris, however, he met poverty face to face. For long enough he could take no part in social life for want of a decent coat; but he found books and specimens to his hand, and made warm friends, among whom were the famous Cuvier and the not-less-famous Humboldt.

In 1832 the tables began slowly to turn. He accepted the Chair of Natural History at Neuchatel, and so began that career as teacher which, with the greatest enthusiasm, he pursued until his death. His constant plan for giving instruction was to take his students to the mountains or lakes, and teach them from Nature herself. When the weather would not permit of this, he heaped specimens before each on the table, and illustrated his lectures by black-board work. His classes were always crowded, for, perhaps more than any other man of his time, he possessed the power of illuminating his subject, and of exciting enthusiasm in those who listened to him. Even unlettered fishermen, it is said, after hearing him talk, would forget themselves, and pour forth to him the story of their own acute if unclassified observations.

In the meantime, with the unflagging industry which followed him through life, he was collecting a museum at Neuchatel, and compiling his great works on "Fossil Fishes," and "Fresh Water Fishes," which appeared in fragments, volume by volume, and with disastrous financial consequences to himself. At one time his application to study was so persistent that his eyesight was threatened, and he was compelled to spend three months in almost total darkness. Even then, however, he went on with his studies, examining his fossils by touch. "For mercy's sake," Humboldt wrote him at this time, "take care of your eyes. They are ours."

In 1833 he married Cecile Braun, sister of his old friend, Alex. Braun, a young woman of rare artistic talent, who, during her short life, drew some of the finest illustrations in his books. Although their home was of the simplest, almost of the poorest, it soon became a rendezvous for the scientific men of the Continent, for, although only twenty-six, Agassiz was even now numbered

among the foremost scientists of his day. In 1834 the Wollaston prize, for the encouragement of geological investigation, amounting to about £31, was conferred upon him by the Geological Society of London. The same year he visited England, and found so many new fossils among the fine collections there that he was compelled to rewrite many portions of his as yet unpublished volumes of "Fossil Fishes," a work which was proving so great a burden on him that he wrote, in 1835, to Humboldt, "I have certainly committed an imprudence in throwing myself into an enterprise so vast in proportion to my means as my Fossil Fishes. But, having begun it, I have no alternative. My only safety is in success." . . . His hopefulness, however, immediately appears: "I have a firm conviction that I shall bring my work to a happy issue, though, often in the evening, I hardly know how the mill is to be turned to-morrow."

Before the end of the year, the British Association renewed its vote of 100 guineas, and Agassiz was accordingly enabled to spend his vacation with Charpentier in a study of the Rhone glaciers. This glacial work fascinated him. Thenceforth it was to become the master-work of his life; for it was Louis Agassiz who first proclaimed the now-famous Glacial Theory.

His first announcement of this theory, made quietly at a meeting of scientists, aroused a storm of protest, even of contempt; but the young savant was sure of his ground. His eyes led those of others to see, and before many years had passed he had the satisfaction of seeing the lions of Europe fall, one by one, into acceptance of his teachings.

In the meantime, he explored Europe, North America, and even South America, finding everywhere the polished rocks, peculiar markings, and traces of moraines, which he expected, living, often for months at a time, with a few friends, in a hut on the vast ice-fields, and meeting daily with experiences fraught with danger. Upon one occasion, somewhere among the Alps, he had himself lowered 125 feet into an ice-chasm, lined with stalactites. At the bottom he found himself plunged suddenly into an ice-cold bath, from which he was extricated well-nigh frozen, and in imminent danger of masses of ice from above falling. . . . As a result of these investigations, his "Etudes sur les Glaciers," and "Systeme Glaciere" were published. During the same period he also found time to complete his "Fossil Mollusks," and "Tertiary Shells."

In 1842 the King of Prussia made him a gift of £200, and in the same year he began that correspondence with Charles Bonaparte, Prince of Canino, then in America, which finally led to his residence in the United States. "Do you think any position," he wrote the Prince, "would be open to me in the United States, where I might earn enough to enable me to continue the publication of my unhappy books?"

Bonaparte's answer was an invitation to spend a summer with him, and in the following year, at the great grief of his students, Agassiz bade a final farewell to Neuchatel.

In America, during the following years, he found, as usual, a busy life. He lectured, took a Chair in the University at Cambridge, Mass., founded a museum, and, as he always did, created a veritable hive of industry about him. At intervals he made extended tours, to Lake Superior, the far West, the Florida reefs, about the coast of South America via the Straits of Magellan, to San Francisco, and to the Sargasso Sea.

In 1850 he married his second wife, Elizabeth Cary, of Boston. The following two years were spent at Charleston, S. C., but in 1853, with shaken health, he returned to Cambridge. In 1852 he had been awarded the Prix Cuvier by the Government of France.

After the return to Cambridge, Agassiz's wife and daughters, as a surprise for him, completed a plan for opening a school for young women. He threw himself into the scheme with enthusiasm, and agreed to give lectures. As a result, the school became so popular that the financial stringency for the Agassiz family was at an end; the heavy debt still remaining on "Fossil Fishes" was paid off, and a few years of peaceful enjoyment followed. Nor was Agassiz, during this halcyon time, lacking in comradeship. Within easy distance lived nearly all the intellectual giants of the United States, and, at the famous "Saturday Club," where the boyish and mirthful Agassiz sat at one end of the table, and the quiet and gentle Longfellow at the other, were accustomed to congregate such men as Holmes, Hawthorne, Emerson, Dana, Lowell; Gray, the botanist; William Hunt, the artist; Dwight, the greatest musical critic of his time; and many others of America's brightest men.

In 1858 the Order of the Legion of Honor was conferred upon Agassiz by France, and not long afterwards the Copley Medal was awarded him.

His closing years were marked by the same tireless energy which had always been his. He carried on his teaching, his museum work, wrote for the Atlantic Monthly, established a summer school at Penikese, made trips of investigation, and finished four volumes of his "Contributions to the Natural History of the United States."

His last address was delivered to the Massachusetts Board of Agriculture, at Fitchburg, where he lectured on "The Structural Growth of Domestic Animals." The next day, December 2nd, 1873, he was taken seriously ill, and two weeks later he was buried at Mount Auburn, in a grave now marked by a boulder which was brought from the glacier of the Aar, not far from the spot where his observation hut once stood, while the pine trees about it were sent by friends in Switzerland.

While accepting in many respects Darwin's theory of evolution, Agassiz was, on some points, its strongest opponent. "More than 1,500 species of fossil fishes which I have learned to know," he says, "tell me that species do not pass insensibly one into another, but that they appear and disappear unexpectedly, without direct relations with their precursors." Belief in a Creator, working from age to age, was, in fact, the keynote of his study of Nature; over and over again he declared his opinion that development is "controlled by something more than the mechanism of self-adjusting forces." He was, in fact, among the most religious of the scientists, and much of his life was spent with the aim of proving the living personality and activity of the all-powerful Mind, whose evidences he, at least, was able to see written everywhere.

DARWINISM AND EVOLUTION.

[That Agassiz was justified in rejecting, as he did, part of the Darwinian theory, would seem to be the opinion of a growing number of scientists. We quote from a recent number of the N. Y. Independent the article below.]

One is safe in saying that, to the great majority of intelligent readers, nowadays, the terms Darwinism and evolution are synonymous. At best, there is, though not widely prevalent, a vague and disturbing impression that scientific men have made some important and incomprehensible distinctions in their uses. That an anti-Darwinist may be an uncompromising evolutionist, seems to the great public a paradox. And yet it is quite true that Darwinism to-day is disputed by a large and growing body of scientific students, to whom evolution is the fundamental principle of all life. Perhaps the first attack made upon the all-sufficiency of the distinctive doctrine so convincingly brought out by Darwin—natural selection—was by the Lamarckian school, which rose to considerable eminence a dozen or more years ago. The battle was, for a while, a notable one. The Lamarckians, it is true, have been repulsed by numbers, though they by no means acknowledge defeat; while their whilom opponents, the Darwinists, are now facing the common enemy, those who deny the effectiveness, or even the possibility, both of natural selection (Darwinism) and of the hereditary transmission of the effects of use and disuse on the organism (Lamarckism), as factors in the origin and preservation of species. We have heard so much about the "struggle for existence" during the past forty years, the phrase has permeated literature so widely, that to be told now flatly and oftentimes intemperately, that there is little or nothing to it, is like a dash of cold water; it makes us gasp. Perhaps the center of attack on these generally-recognized views is as yet Germany, though there are some in America who have already entered the lists or have thrown down the gauntlet. That the Germans should declare that "Darwinism is dead," does not surprise us greatly; we are already painfully aware of the predominating German characteristics in science—intolerance and conceit. But, that its friends among the laity may not be frightened at the supposed imminent danger of the citadel of Darwinism from this Teutonic invasion, let us remind them that other theories of evolution have been as intemperately urged by the Germans in the past, theories which now scarcely cut any figure at all in the triumphal procession of evolution.

However, nearly all controversies result in some good, and the present one has very clearly demonstrated to most of us that natural selection is not so all-powerful in evolution as we were once disposed to believe it was. Darwinism must be modified and amended doubtless—the Lamarckians showed its adherents that, if nothing more; but its staunch defenders have lost no faith in it as the guiding principle of evolution.

"POWER LOT, GOD HELP US."

This new story, by Sarah McLean Greene, which begins in the present issue, is a strong temperance story, yet without sermonizing. It preaches the gospel of fresh air, hard work and sobriety in such an interesting and natural way that the reader gets both enjoyment and benefit—the latter almost unconsciously. It would be a pity for you or your friends to miss the opening chapters. If you read them, you can be trusted not to miss the rest.

Sarah McLean Greene is a down-Easterner, who knows as she knows her alphabet, the land and people of the coast of Maine and the Provinces that border on the bay of Fundy, and she has written about them in "Cape Cod Talks," "Deacon Ly-sander," "Vesty of the Basins," as well as in "Power Lot, God Help Us." The last named is a Nova Scotia story, which will be a never-ending delight to the "Blue-Nose" who has left the "fish country" and come to the West. He will know the places she describes, and memory will recall characters like Captain

Belcher and Jacob Trawles. But the interest is far from being purely local, for women like Mary Stingaree and men like Jim Turbine, though rare, are not confined to any one locality.

It is not too much to say that our readers will enjoy it fully as much as any story "The Farmer's Advocate" has yet placed before them.

OUR LITERARY SOCIETY.

Editor "The Farmer's Advocate":

I have read with deep interest the essays on "What Constitutes Success." It is certainly a vast subject with which to deal, but a vaster thing is to be the possessor of its elements. There are few characters recorded in the Bible who attained the utmost sphere of its properties. But I will stop here.

Essay I. says, in part: "Success, we would say, consists in doing the very best that is possible for us to do, having in view our Heavenly Father's kingdom on earth and through eternity. If we did our best, each one of us the utmost that we are capable of doing, how long would the millennium be dawning on our world? How long would the liquor traffic be tampered with? How long would all the other evils of our social and political life be allowed to remain to blight our nationality?"

Ah! How true this is! And yet, comes to me the query, Why do we not, as individuals, do our best? Should not the very reality of living in a better world, and the approval of our own conscience, and the blessed assurance of a home eternal in the heavens, be sufficient inducement for us? But I think if we look deep down into the hindrances of doing our best, we come to the conclusion that there must be some lacking of a consciousness of the all-sufficient Source of Power, and the willingness to supply that power at all times and places; and secondly, there must be the lacking of courage—we are so afraid of being laughed at or jeered, and so afraid of hurting other people's feelings, or, in other words, we are too prone to follow and not lead the crowd. Perhaps there are other hindrances on our part that keep us from fulfilling His will, which is no more or less than living the successful life.

Let us hear from others on this important theme; perhaps it can be enlarged upon. Hoping it will influence some one to lead a better life, and strengthen them that are already in the way, I will close.

Brant Co., Ont. J. H. J.

RE MACBETH.

Though I have not previously entered into the discussion of Macbeth, I have taken a great deal of pleasure (and, I think, profit) in going over it with an idea to observing the points of controversy that have been brought out from the essays written on the subject. The Literary Society has been a most gratifying source of companionship to me this winter, as the heavy roads have made other companionship almost impossible.

I am a farmer's daughter, and appreciate fully the joys of country life, but I have often wished that we might have a neighborhood literary society, and meet for mutual enjoyment and profit in the study of well-chosen books. However, our busy lives, and the disadvantages in meeting, seem to make such a move unfeasible, but I feel that I have been compensated in being allowed to belong to "The Farmer's Advocate" Society, and share in its privileges.

Very truly yours,
JANE McFADEN.

The following are Miss McFaden's comments on "Macbeth":

ON THE SUBJECT OF MACBETH.

In regard to your suggestions with reference to this study, which has been followed with a great deal of

interest and pleasure, the following views are respectfully submitted:

As Shakespeare's characters are generally acknowledged as types of humanity, rather than mere personalities of fiction or historical fact, we might regard Macbeth as a once able general and honorable gentleman, who, like many other brave and good men, had become intoxicated by drinking deep of the cup of prosperity, until finally nothing but the blood of kings could satiate his thirst.

It is doubtful if Macbeth would have carried his ambition as far had he not been urged on by the thoroughly unscrupulous and ambitious Lady Macbeth, who would stoop to the deepest ignominy to place her husband on the Scottish throne that she might share with him the honors. That the voice of the tempter had previously whispered in his ear, however, is evident from the fact that when Rosse and Angus went to meet him (Macbeth) with the king's message, after his brave defeat of the rebel army, he soliloquized:

"This supernatural soliciting
Cannot be ill, cannot be good; if ill,
Why hath it given me earnest of success
Commencing in a truth? I am thane
of Cawdor;
If good, why do I yield to that suggestion
Whose horrid image doth unfix my hair,
And make my seated heart knock at
my ribs,
Against the use of nature? Present
fears
Are less than horrible imaginings:
My thought, whose murder yet is but
fantastical,
Shakes so my single state of man, that
function
Is smothered in surmise," etc.

However, just after this, he seemed willing to let the matter rest, in the happy conclusion that

"If chance will have me king,
Chance may crown me
Without my stir."

But later, when Duncan pronounced upon his son Malcolm the title of Prince of Cumberland, Macbeth is again disturbed, and says to himself,

"The prince of Cumberland; that is a
step
On which I must fall down or else o'er
leap.
For in my way it lies, Stars, hide
your fires;
Let not light see my black and deep
desires," etc.

The king further honored the thane of Cawdor by paying a visit to Inverness, Macbeth's castle. Lady Macbeth, having just perused a letter from her liege, in which he informed her of his newly-acquired title, also of the future greatness prophesied by the witches, began at once to form her fiendish plans, not trusting to her husband's too-kindly nature. These plans were quickly shaped when a messenger announced the fact that the king was coming as their guest that night. That no such terrible designs existed in the breast of Macbeth, may be declared from the fact that, when Lady Macbeth unfolded her own inhuman plot, his more noble nature revolted. When she charged him with weakness, he declared:

"I dare do all that doth become a man,
Who dares do more is none."

This remark showed the truly manly character underneath that which savored of unworthiness, and indicated, also, that he might have been readily influenced to better deeds. Capable of such a manly retort, how bitterly, in after life, he must have reviewed his own baseness! But the woman tempted him, and he did eat (though he fit to his credit he never declared thus).

After the discovery of the murder of Duncan, Lady Macbeth feigned faintness as the bloody deed is recounted in her hearing. This was,

however, but part of her plot, as she declared to Macbeth when he began to doubt if they would be regarded as guiltless,

"Who dares receive it other,
As we shall make our griefs
And clamor roar";

and the "gentle lady" deemed it fitting she should swoon.

It is needless to recount the remainder of the tragedy, which has already been outlined by the members of the Literary Society. Macbeth finally met death at the hands of Macduff, who advanced upon him with the army from England, whither he had fled to assist Malcolm in organizing an army to depose the bloody tyrant.

In reviewing previous essays on this topic, the question might arise, "Are the witches supposed to represent the evil suggestions that come to us, or does Shakespeare mean to imply that Macbeth actually consulted the witches, even as Saul, through the witch of Endor, appealed to the spirit of Samuel?"

JANE McFADEN,
Wellington Co., Ont.

Query.—Could a naturally brave and good man ever fall to the depths to which Macbeth fell?—or does the fact that he thus fell point to some inherent weakness in his character?

About the House.

STRENGTH - GIVING FOODS.

Alert women everywhere now realize the necessity of giving their families the right kinds of food, food not only well-cooked and nutritious in itself, but suited to the different seasons, and to the work which is to be done. For instance, during the "dog-days" it would be madness to serve strongly heat-producing viands, just as great madness as it would be to serve green salads and lemonades as the principal dishes on the bill-of-fare during the winter solstice. Again, it would be a great mistake to expect the man of sedentary occupation to relish the food which may be palatable, necessary even, for the one who works at hard outdoor labor, such as that which engages the great majority of our farmers.

Now that the spring has come, with its immediate prospect of plowing, gardening, housecleaning, etc., the wise housewife will at once recognize that a change is in order. During the winter, when there was comparatively little hard work to do, and a great necessity was to keep warm, starches and fats were much called into use. Now there is an additional need of more purely muscle building food.

In writing of foods, scientific folk use, as a rule, a great many big words. They tell us in this case, for instance, that the nitrogenous (protein) foods, the albumins and albuminoids, are among the greatest muscle, strength, and energy producers. It may not be at all needful for us to remember these words, but we should certainly try to remember the foods in which the substances for which they stand are contained—that the albumins are found to a certain extent in all vegetable and animal organisms—in the casein of milk, in the gluten of wheat, in the legumin of peas and beans, and very largely in lean meat and blood, and in the white of egg, which is almost pure albumin. The albuminoids, on the other hand, comprise the gelatinous constituents of bones, cartilage, etc., and the collagen, or connective tissues of the muscular fibre in meat. Collagen swells and softens when heated, or when treated with diluted acid, and thus it is that steak thickens when fried, and that tough meat becomes more tender if soaked in vinegar.

Now, knowing just these few facts, the housewife will reason that properly-cooked meat and eggs, milk, milk-and-egg puddings, and cheese, are very important items of the bill-of-fare, especially for those who must work at all hard. Green vegetables should be always added, of course, when possible, to supply the mineral and medicinal elements necessary for the body. It is a great mistake not

to have early vegetables. But it is a still greater mistake to sell all the eggs, to limit the home consumption of meat to salt, indigestible pork (we do not include well-cured bacon), and to never even think of placing a pitcher of milk on the table for the use of the family. All these things pay for themselves many times over in the added strength and power to do work which they produce. We do not expect our horses to be able to work without food of the right kind; why, then, should not the same rule hold good in regard to human beings? . . . And just here remember that no amount of pie, cake, etc., can make up for the omission of the simple, nutritious, food-substances enumerated above—meat, eggs, milk, bread, cheese (thoroughly masticated) and green vegetables.

Proper cooking is, of course, an important essential in the assimilation of foods into the system. Bread is good, but it must be good, light bread, not

the outside as rapidly as possible by placing over a very hot fire and turning, then boil or roast, or do what you will with it; the outside has been hardened, and the juices cannot escape. On no account, however, cook a steak or roast until hardened throughout. Meat should be juicy and digestible, not hard and dry. It is well to remember that, as a general rule, starchy foods require much cooking; the albuminous foods less, and the fats least of all, or rather that fats require longer cooking and at a lower temperature. A very high temperature in cooking fats always renders them less digestible.

To provide simple, nutritious, strength-giving food, cooked in the most palatable, most digestible way should be the aim of every housewife, so far as the culinary department is concerned. She may leave out fancy or troublesome dishes, if she will, during this busy season, but she should never forget that

the right proportion of gluten essential to the making of light, spongy bread.

Brown breads are inferior to white bread, because they contain much less available nutriment. It has been the belief for years that the best of the wheat grain is milled out and thrown away in the bran. There is absolutely no foundation for the wild claims made by the whole-wheat crank, everything is in favor of the white article. The white bread yields eight per cent. more nourishment to the body than Graham bread, which is made from the whole wheat; not only so, but the bran particles by irritating the intestinal walls and thus promoting too rapid muscular action hastens other foods too rapidly through the intestines so that complete absorption cannot take place, and considerable loss occurs. Of course, where there are certain affections of the alimentary tract, this increased action is a benefit, and many people eat brown bread for this reason. Sedentary people are often benefited by using brown bread; but the active person will be yielded more energy from the white. The calcium, iron and phosphorus salts, which are lost in the bran, make no material difference, as they are present in oat-meal, and almost every vegetable and animal food we eat. Bread contains so many of the ingredients required to nourish the body—fat, proteid, salts, sugar, and starch—that it may well be termed the staff of life; but, as it does not contain enough fat for a perfect food, the addition of butter to it renders it more valuable as an article of diet.

Ideal bread should fulfil certain dietetic conditions:

1. It should retain as much as possible of the nutritive principles of the grain from which it is made.
2. It should be prepared in such a manner as to secure the complete assimilation of these nutritive principles.
3. It should be light and porous so as to allow the digestive juices to penetrate it quickly and thoroughly.
4. It should be especially tempting so that one may be induced to eat enough for nourishment.
5. It should be quite free from coarse bran, which causes too rapid muscular action to allow of complete digestion; this effect is also produced when the bread is sour.

Bread is made from a combination of flour, liquid (either water or milk), salt, and a vegetable ferment called yeast. The yeast acts slowly or rapidly, according to the temperature to which it is exposed. The starch has to be changed by the ferment, called diastase, into sugar, and the sugar into alcohol and carbonic-acid gas (carbon dioxide), which makes itself known by the bubbles which appear and the gradual swelling of the whole mass. It is the effect of the carbonic-acid gas on the gluten which, when checked by baking, at the proper time, before the ferment becomes acetic (sour), produces the sweet, wholesome bread. The kneading of the bread is to break up the gas bubbles into small portions in order that there may be no large holes, and the fermentation be equal throughout.

The loaf is baked in order to kill the ferment; to render the starch soluble; to expand the carbonic-acid gas, and drive off the alcohol; to stiffen the gluten; and to form a crust, which should have a pleasant nutty flavor. Much of the indigestibility of bread is owing to the imperfect baking. Unless the center of the loaf has reached boiling point (212 degrees F.), the bacteria contained in the yeast will not be killed, and some of the gas will remain in the center of the loaf, and be unfit to eat. The crust is the most easily-digested part of the bread, as it is predigested, being turned into dextrine, or sugar.

One hundred pounds of flour can be made into about 135 lbs. of bread, the extra weight being due to the addition of water. Wheat flour contains 60 per cent. starch, 11 per cent. albuminoids, 4 per cent. of gum and sugar, 2 per cent. of salt, and a little fat or oil.

Starch is the main ingredient of all cereals. One of its offices in the animal economy is to keep up the temperature of the body. It does so by being burnt in the blood (just like coal in a furnace), the carbon which it contains combining with the oxygen which we breathe, and developing heat by its combustion. The flour contains some soluble albuminoids, which act like ptyalin upon the starch of



A Pleasing Interior.



Library or Living-room.

(By permission of House Beautiful.)

heavy, indigestible stuff, such as is sometimes seen. . . . Cereals are also good, that is, provided they are properly boiled. Porridge, boiled for but 15 or 20 minutes, is in a poor shape for assimilation, hence the best cooks now boil it the day before, say for two or three hours at least (in a double boiler), and merely reheat it for breakfast. . . . Eggs cooked in the right way are good, dropped into boiling water and boiled three minutes they are but questionably so, the white being then toughened into a hard mass, upon which the juices of the stomach have but little effect. The proper way is either to put them into cold water and remove them the very instant the water begins to boil, or else to drop them into boiling water and set them back, closely covered, on the very back of the range, for ten minutes. . . . Meat, too, must be cooked to retain the albumin, which is contained chiefly in the blood. To do this sear

upon her rests the responsibility, to a great extent, of keeping up the health and strength of her family.

SCIENCE OF BREADMAKING.

[A paper read at the Kemble Branch of the North Grey Women's Institute by Mrs. Geo. McCoag, of Lake Charles.]

A wheat kernel may be subdivided into three layers: The first or outer one contains the bran and a good part of the mineral matter; the second contains the gluten, fats and salts; the third contains the starch.

The third or the center of the wheat kernel is the part which is made into pastry flour, which is mostly starch. The second and third are what is milled into white-bread flour, and the whole wheat kernel into Graham flour. Bread is made principally from wheat flour, because wheat is the only grain which contains

the flour and potatoes, which thus becomes changed into sugar; the yeast then attacks the sugar, breaking it up into alcohol and carbonic-acid gas.

The object of using potatoes is to obtain sufficient sugar for producing the gas required in the quickest way possible. In wet seasons, or when the wheat is badly stored and kept at all damp, the soluble albuminoids which it contains act upon the insoluble gluten, decomposing it into soluble bodies, and, at the same time, produces dextrine by their action on the starch of the grain. Flour made from such wheat is deficient in gluten, and rich in dextrine. The result is that the bread rises badly and gets highly colored. The dough should rise in a temperature of 75 degrees. Avoid all cold drafts or sudden changes of temperature, which checks fermentation and effects the flavor. The oven should be heated from 400 to 500 degrees.

LAUNDRY NOTES.

When ironing clothes, especially white starched ones, keep a cloth dampened with coal oil beside you, and rub the iron over it before commencing; the irons will then never stick.

If table linen has fruit stains on it, soak in cold soft water before pouring on the hot water, which may only set the stains.

For rust spots, hold the spot over a bowl and pour spirits of lemon through it. Then pour boiling water through, and the spot will come out.

In starching doilies with fringed edges, dip the fringe or lace into salt water before proceeding.

To clean ribbons, wash them in gasoline in a place where there are no lights or fire, hang out to dry, then press with a hot iron, and they will look as good as new.

A little pipeclay dissolved in the water employed in washing linen is said to clean the dirtiest clothes thoroughly with a great saving of labor and soap. It also whitens the linen.

To wash fine lace so that it will look like new, put it in a glass fruit jar filled with hot soap-suds and a little ammonia. Shake the jar from time to time, letting the lace stay about twelve hours.

If much soiled, change the water once. At the end of that time rinse in clear water by shaking it in the jar well, and then dry entirely by patting and slapping between the palms of the hands, at first between the folds of a towel to absorb the excess of moisture. When dry, it will be found perfectly smooth. This is a good way to do fine lace turnovers.

Alum water will restore many faded colors. Brush the faded article thoroughly, cover with a layer of castile soap, rinse in clear water, then in alum water.

Before using a new clothes-line, boil it. This saves it from stretching, and it will last twice as long.

SINS OF OMISSION.

It isn't the thing you do, dear,
It's the thing you've left undone
Which gives you a bit of headache
At the setting of the sun.
The tender word forgotten,
The letter you did not write,
The flower you might have sent, dear,
Are your haunting ghosts to-night.
The stone you might have lifted
Out of a brother's way,
The bit of heartsome counsel
You were hurried too much to say;
The loving touch of the hand, dear,
The gentle and winsome tone,
That you had no time nor thought for,
With troubles enough of your own.

The little acts of kindness,
So easily out of mind;
These chances to be angels
Which every mortal finds.
They come in night and silence,
Each chill, reproachful wraith,
When hope is faint and flagging
And a blight has dropped on faith.
For life is all too short, dear,
And sorrow is all too great
To suffer our slow compassion,
That tarries until too late,
And it's not the thing you do, dear,
It's the thing you leave undone
Which gives you the bit of headache
At the setting of the sun.

—Author Unknown.

The Quiet Hour.

OUR LEADER'S WATCHFULNESS.

"Among so many can He care?
Can special love be everywhere?
A myriad homes, a myriad ways,
And God's eye over every place?"
I asked; my soul bethought of this:
'In just that very place of His
Where He hath put and keepeth you,
GOD hath no other thing to do.'

JESUS answered and said unto him, Before that Philip called thee, when thou wast under the fig tree, I saw thee.—St. John i: 48.

Yesterday evening I was talking to a dear friend about this great privilege of writing each week a few words on the greatest of all subjects to thousands of readers. My friend said that she was afraid I was living in too great a rush of work to do justice to such a great and important work as the writing of a Quiet Hour, she said I had no time, scarcely, for reading or meditation, that it was a mistake to "give out" when the press of work kept me from "taking in." I agreed with her, in theory, but I felt that I could not bear to give up this glorious opportunity, and I certainly could not drop the active service for God and man that keeps my days so full and so happy. I said that if there was little time given me for "reading," at least I had ample opportunity for studying human nature at first hand;—and yet, and yet,—I was inclined to agree with her statement that I could not do full justice to you—my dear readers—without neglecting the "neighborhood" or "settlement" that is so pressing every moment. The very next mail brought me the following letter:

"Dear Hope,—It is with much pleasure that I take the opportunity of writing you a few lines to thank you for those lovely sermons published in 'The Farmer's Advocate.' I have been reading them for years, and I must say that every one is food for me. You have revealed many things to me that I shall never forget, and through them I have been often kept from doing things contrary to the will of God.

"I feel I would be very ungrateful to you if I did not acknowledge the fruits of your faithful and good work, and my prayer is that all who read them may carry into practice the plain truths of everlasting life, which you practically put before us. God grant that you may long be spared and blessed in your good work.
Yours sincerely,
"R. R."

Words like these always come to me when I begin to feel that my writings must surely pall on our readers. Surely it is no coincidence. God is continually planning to give us the human encouragement we need. When Moses was sent to speak to Pharaoh and the Israelites, and when he shrank back in fear of the greatness of the responsibility laid upon him, he was encouraged by the promise: "Is not Aaron the Levite thy brother? I know that he can speak well. And also, behold, he cometh forth to meet thee." . . . and the LORD said unto Aaron, Go into the wilderness to meet Moses." If you were to study the Bible carefully, you would find many such instances of timely encouragement sent to men and women. But we don't need to go as far back as Bible times to see the watchfulness of our Leader. We have proved it innumerable times, both in our own experience and in the experience of our friends.

I have taken for our text to-day the simple words addressed to Nathanael, words which caused him to burst out with the astonished exclamation: "Rabbi, Thou art the Son of God; Thou art the King of Israel."

This noble-hearted Israelite had come with his friend to see the Prophet from the despised village of Nazareth. "Can there any good thing come out of Nazareth?" he asked, and Philip's answer: "Come and see!" was better than a thousand sermons. Why was this man, who had no faith in his friend's newly-discovered Prophet, convinced so easily that He was indeed the Son of God and the King of Israel? What had happened before Philip called Nathanael, what secret communion with

God beneath the fig tree, that only Nathanael and God knew about? Whatever it was, when this young Rabbi looked with quiet sympathy into his eyes and said He knew all about it, the conquest was complete. Is it not always so, with a soul that is really seeking for a perfect Leader? One who is deliberately doing evil may prefer the darkness, he may try to hide from God, as Adam did before he repented his disobedience, but one who is bent on making the best of his life and is looking for goodness—another name for GOD—is ready to follow One Who knows him through and through. Try to tell out your holiest, highest thoughts to the best earthly friend you can find, and you will soon discover that his insight and sympathy fail to perfectly satisfy you. You can't put your best aspirations into words, for one thing, and—though any friend that is worthy of the name can understand a great deal without words—still there is always something lacking. But when, like Nathanael, a soul finds out the perfect comprehension of God—God Who is also Man—there is no barrier to the gladness of this perfect sympathy. We all need a confidential friend, for it is an instinct with us to try to make two souls meet as one; and one who has discovered by his own experience what a satisfying Friend the Great Master of men can be will be ready to exclaim, with Nathanael: "Thou art the Son of God; Thou art the King of Israel."

And what a wonderful difference it makes in one's life when one sees clearly that nothing is left to chance, that every little event is carefully, wisely and lovingly planned by a Leader Who cannot make any mistakes. We may make mistakes and interfere with His plans for our happiness, but when we do that He at once sets to work to bring good out of evil. We have a parable of that in the visible world. If a tree falls to the ground, the moss grows up and covers it with a living robe of green; if anything dies it is caught up by the living world around, and soon lives again in another form. It is misery to struggle hopelessly against God's ordering, it is hardening to accept it with stoical endurance as one's "fate"—an accident which has happened by chance and which cannot be cured, and therefore must be endured. True gladness of soul springs up when we can stretch out both hands for God's daily gifts, whether they be sweet or bitter.

In Benson's book published last year, "The Altar Fire," he pictures a young man who left Oxford with almost everything before him which a young and eager spirit could desire. Then an accidental fall laid him "on the shelf, with other cracked jars, for life." He went through agonies of despair and rebellion, and just lived on, praying almost hourly for death. "But," he says, "I did not die, and then at last it dawned upon me, like a lightning sunrise, that this was life for me; this was my problem, these my limitations; that I was to make the best I could out of a dulled and shattered life; that I was to learn to be happy, even useful, in spite of it—that just as other people were given activity, practical energy, success, to learn from them the right balance, the true proportion of life, and not to be submerged and absorbed in them, so to me was given a simpler problem still, to have all the temptations of activity removed—temptations to which with my zest for experience I might have fallen an easy victim—and to keep my courage high, my spirit pure and expectant, if I could, waiting upon God. . . . The reason why some of us make shipwreck—and even that is mercifully and lovingly dispensed to us—is because we will not throw ourselves on the side of God at every moment. Every time that the voice says, "Do this," or "Leave that undone," and we reply, fretfully, "Ah, but I have arranged otherwise," we take a step backwards. He knocks daily, hourly, momentarily, at the door, and when we have once opened, and He is entered, we have no desire again but to do His will to the uttermost."

The secret of gladness is to walk with eyes upon our Master's face, to obey His orders unquestioningly, to trust His ordering utterly. No little service secretly rendered for His sake, is ever overlooked or forgotten. Are you struggling on quietly, doing your daily duty uncomplainingly, bearing your daily burdens patiently, enduring your daily sor-

rows and fighting your daily battles bravely? Then let this thought thrill you with hope and gladness, this thought that the Master is taking notice of everything. He rejoices when you keep sweet in the midst of fuss and rush, He smiles encouragement into your eyes every time you win a battle over temper or distrust, every time you put your hands together in His and say: "Not my will but Thine be done." He is putting in motion many plans for your happiness, only walk as He directs, and they will come as unerringly to meet you as Aaron came to meet Moses in the wilderness. Turn your back on a path that looks pleasant because it is your duty to go in an opposite direction, and you will most surely find that—like Alice in the Looking-glass house—you are walking directly towards the thing you had bravely given up. I know that I have said much the same thing a hundred times before, but each of us has his own message from God to deliver, and this is the special message He continually presses into my hand for you—even the reminder that He is close beside you, that He understands what you need most, and that He is giving it to you, perhaps in the very cross you shrink from most. He is not only on the mountain-top, watching His disciples as they fight bravely against difficulties; He is also standing beside each soldier, for encouragement and strength, for direction and help of all kinds. He appoints each soldier to his daily post, the orders for the day come straight from the Leader. Before each day's battle He says, as He did to Joshua, "As Captain of the host of the Lord am I now come." He has "now come" to give each one of us the special orders for the day. Let us fall down at His feet, as Joshua did, and say, "What saith my Lord unto His servant?" And let our obedience be prompt and soldierly as his was. When the orders were issued there was no attempt to shirk, as we are told—"and Joshua did so."

"I lean upon no broken reed,
Nor trust an untried guide.
I know Him, and He knoweth me,
He walketh by my side.
I hold His hand as on we walk,
And He still holdeth mine.
It is a human hand I hold,
It is a hand divine."

When Judson was once asked how he had been influenced to go to India as a missionary, he declared that Christ's last command seemed to come to his heart directly from heaven, and he determined on the spot to obey it at all hazards, for the sake of pleasing his Leader. And he declared, confidently, "If the Lord wants you for missionaries, He will send that word home to your hearts. If He does so, you neglect it at your peril!"

Certainly He does want you to be a missionary, the only question is, "Where and How?" Last Sunday I heard a clergyman ask the children in a Sunday school, "What is a missionary?" A small boy answered, confidently, "A person who tells people about God." I don't think anyone could invent a much better answer than that, do you? Certainly it is the business of every Christian who loves his Master to tell people about the only Leader who never disappoints the hearts of His followers. He may not want you to talk much about your secret religion, but He does want you to show your colors so that the world about you may feel quite sure that you are proud and glad to be one of His soldiers. There was a small boy once who, when asked if his father was a Christian, answered, "I think so, but he doesn't work very hard at it." If that is the kind of a Christian you are, then it is time you gave up such amateur kind of Christianity, and set up to be a professional. If the members of your own family are not very sure whether you belong to the Great Army, then you are certainly not working very energetically at mission-work.

I will go back to the subject I started off with. If my Master wants me to deliver weekly messages from Him to you, He is quite able to put them into my heart, and give me the words to deliver them. He knows exactly the message you need each week. If I take it from Him, and simply pass it over to you, there is little need for me to question—like Moses, whether I am eloquent

or not. If God will, indeed, say to me as He did to Moses: "I will be with thy mouth, and teach thee what thou shalt say," then the message will be from Him and the privilege of being allowed to deliver it will be all mine. We all have some message to deliver to somebody. Let us see to it that we are not turning our backs, like Jonah, on any Nineveh we are told to go to and preach unto it the preaching that God has bidden us. It is not only a great privilege, it is also a tremendous responsibility to be chosen by our Leader to bear His messages. Let us be on the watch for His lightest whisper.

We do not always know it when we have the privilege to be God's messengers, Nor who shall be His messengers to us."

HOPE.

With the Flowers.

WHAT YOU CAN DO WITH FIFTY CENTS.

A tiny garden, a very limited amount of money, and a very unlimited desire for flowers—this is a combination by no means unknown in rural as well as in city districts. And yet how much can be done with just this tiny garden, this trifle of money, this great love for the beauty which it may procure. If you don't believe it, try the following investment: One package Daybreak asters, 10 cents; one package candytuft, 5 cents; one package morning-glory, 5 cents; one package coreopsis, 5 cents; one package nasturtiums, 5 cents; one package Shirley poppies, 5 cents; one package sweet peas, 5 cents; one package verbenas, 5 cents; one package phlox Drummondii, 5 cents. . . . But we have left out so many beautiful flowers? Certainly,—you can't have everything for 50 cents. We have chosen those that will give you the most color, and the longest bloom, for the money. Of course, you may cut out some of the list and substitute mignonette, and balsams, and stocks, and pansies, if you choose. In any event, you will have, if your plants do well, a most beautiful garden.

NOTES.

Be sure to put in sweet peas just as soon as the frost is out of the ground so that it can be worked. Have the soil rich and deep, and pack it well, both under and above the seeds.

Bulbs which have flowered in the house, will be of no use for pot-culture again, but may be planted out in the border.

Provide for plenty of vines in your garden: morning-glory; Alleghany vine, and Canary vine, both dainty as lace-work; Dutchman's pipe, Kudzu vine; all of these may be depended upon to make rapid growth while you are waiting for the more woody vines—the clematis, grape, Boston ivy, honeysuckle, trumpet-vine, etc.—to make growth. There is nothing like vines to cover up unsightly things, and make a home a veritable bower of beauty.

If you want a perennial or lazy man's garden, which will give you plenty of beauty for little work, plant out roots of foxglove, perennial phlox, bleeding heart, hollyhocks, iris, perennial poppies, golden glow, anemones, columbine, perennial larkspur, perennial gaillardia, and sweet William. Some of these may not bloom the first season, but will be laying up riches against another summer. Remember not to plant, side by side, colors that "swear at" each other, such as pink and scarlet, red and blue. If necessary to have plants of these colors even near one another, separate by clumps of white—white candytuft, white phlox, etc.

For sweet perfume, plant mignonette; English violets; spring-flowering bulbs, such as lily-of-the-valley, narcissus, and hyacinths; double-flowering stocks; tuberoses, lemon-scented verbenas, heliotrope, liliun candidum, nicotiana affinis, and sweet peas.

Order seeds in good time, so you can see how each variety is to be treated. Directions should be found on each package.

Plan your garden before you begin to work at it, and have it harmonious, not

a nightmare of spasmodically-formed, ugly beds.

Mass flowers, as much as possible, that is, plant numbers of the same variety in clumps. A single foxglove, for instance, may be interesting, but provokes no exclamations because of its beauty; take a bed of them, however, and there is a different story. The same thing may be said of asters, sweet William, phlox, in fact, any of the flowers which depend on color rather than delicacy or perfume for their attractiveness. Massing is Nature's way. Try it.

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[Note.—Where two numbers appear, ten cents must be sent for each number.]

FASHION NOTICE.

We regret to say that, owing to a change in the pattern manufacturing department, no patterns which appeared before March 1st can be supplied.

SOMETHING ABOUT EDUCATION.

In the coming summer there will be a large gathering assembled in Old London, under the name of the Pan-Anglican Congress, at which there will be many representatives from Canada, both men and women, in addition to the English and Colonial Bishops and Clergy, to whom, we believe, will be left all such decisions as may be distinctively ecclesiastical or official. But, growing out of these, and because of their indirect relationship to them, there will remain many subjects of social, moral and intellectual import upon which general discussion will be cordially invited, and upon which, not only specialists, but delegates from all over the British Empire will give their opinion and experiences.

The programme, so far as it is known, already covers wide ground, including, as topics, many which touch the lives of the womanhood of to-day. Among these are "Women's Work and Wages," "Modern Views on Marriage and Divorce," "Liquor Traffic," "Gambling," "Phases of Modern Religious Belief," "The Religious and General Training of the Young," "Missionary Problems," "Race Problems," etc.; whilst a wide range over the fields of education as they

were in the past and may be in the future, is likely to be recognized as a subject of the profoundest importance.

As the press will convey to us from time to time echoes of these meetings, and later on the Canadian delegates will bring back with them accounts which will be eagerly listened to, it has been deemed desirable to hold preliminary gatherings in several centers upon our side of the Atlantic to prediscuss some or all of these things, with a view to awakening in us a deeper interest and a clearer insight into their meaning.

At the first of these meetings in London, Ontario, the subject of education and its effect upon the women of the past and present generations was the topic selected from the programme. How have they been educated? How are they being educated in the future, to equip them, not only for their home lives, but for the many opportunities for service which are now almost daily opening up for them? Take the devoted woman, for instance, who offers herself for work in the mission field. It is not enough for her to say, "Here I am, send me." To her willingness to go must be also added the necessary training to enable her to meet the special requirements of the position, not only spiritually and intellectually, but she must understand the laws of health whereby to safeguard herself and those she is teaching from needless risks entailed by climate, unwholesome surroundings, etc., thus prolonging her term of usefulness and ensuring more valuable results.

And this recognition of the absolute need of definite training for definite work seems to be amongst the good things which the last half century has brought to us, and which is the keynote to many of the improved methods adopted by the more practical educationists of the present day.

THE SCIENCE OF HOME MAKING.

Thanks to the introduction into our schools of the subject of Home Economics and Domestic Science, in all their branches, our girls of this generation need not fear lest they should begin their married lives in sublime ignorance of the duties which will confront them from the very outset, and to which ignorance, even the most devoted husband will only be indulgently blind so long as his digestion can stand the strain, and his earnings suffice to meet the leakage caused by the incompetence of his poor little bride. Someone has said—I forget who it was—that, "The knowledge which will produce proper food, well-cooked and daintily served, in a neat home, is a greater bulwark of safety to a nation than the largest standing army it can support."

Through the teaching of Domestic Science, the girl now knows the why and wherefore of every home lesson given to her. She knows the food value of each component part, and what will be its effect upon the human system. She obtains an intelligent acquaintance with the several uses of fruits and vegetables. She understands something about germs, and how to neutralize their ill-effects by cleanliness, etc. Her sense of proportion is more acute, and she can enter upon the several processes to which she puts her hand during her day's work with an interest born of knowledge.

The young girl of to-day, then, is being trained for the life she naturally expects to lead, the life, which is her heritage, even though she may not be endowed with it for some time to come, or perhaps never at all, for it may so happen that a home of her own may be denied her. All the same, she realizes that knowledge is power, whilst the fact that she is mentally equipped to be a housekeeper and homemaker, either as maiden aunt or as the capable help of another, who can thankfully offer her an equivalent for her valuable services, gives her a sense of self-respect and an independence of adverse circumstance which must

surely repay her for every moment devoted to her training.

These more enlightened views of education, which happily are now being more and more adopted in our schools in Canada, not only affect the future destinies of the young girls of this generation, but, through the medium of the technical instruction and physical training afforded to our boys, virtually say to them: "If you mean to gain your living by your intellect, do not allow your arms and legs to grow stiff. If you mean to earn your bread by the pickaxe, do not forget to cultivate your mind and enlarge your range of thought."

Truly, our Canadian educationists are on the right track at last, when their aim is so effectively directed towards giving us more complete, all-round boys and girls, so that the men and women of the future may be just the kind of citizens which go to the upbuilding of our country, and to the maintenance of its integrity amongst the nations of the earth. And this is the testimony which, let us hope, our Canadian delegates will give at the coming congress in England next summer.

H. A. B.

Current Events.

It is rumored that China is about to spend \$50,000,000 in naval equipment.

Mr. Justice Mabee has declined the position of Chairman of the Railway Commission.

The Czar has refused full pardon to General Stoessel for his failure at Port Arthur, but he has commuted the death sentence to ten years' imprisonment in a fortress.

The United States fleet, after completing its cruise in the Northern Pacific, will visit Australia, and return to the United States via the Suez Canal.

By the license-reduction bill, introduced to Parliament by Mr. Asquith, Chancellor of the Exchequer, over 30,000 bars will be closed in Great Britain.

Sir Henry Campbell-Bannerman's health has completely broken, and it is recognized that he must give up his leadership in the House of Commons.

Irrigation has been commenced by English capitalists on 25,000 acres of land on the Thompson River, near Ashcroft, B. C. Five hundred expert fruit-growers will be brought out from England to settle the district.

According to the budget presented to the House of Commons by the Hon. Mr. Fielding, Minister of Finance, on March 17, the surplus for the last fiscal period of nine months, is the greatest ever known in Canada, the surplus of revenue over expenditure for that time being \$16,427,167.

The Edmonton firemen are complaining about people sending in alarms from the new boxes by trying to post letter in them. A young fellow was noticed the other day gazing lovingly at a letter as he stood on the street corner. After fondling it for a moment, he went up to a fire-alarm box and tried to get it inside.

A passerby, who had been watching him, however, intervened: "I know you're heart's on fire," he observed, "but I think you had better use the box at the next corner."

The Ingle Nook.

Letter from "A Canadian."

Dear Dame Durden,—I would like to make a few suggestions for Lenten thoughts. Quite recently I heard a married lady say: "Be thankful you are not married, for men are the most selfish creatures; they do what pleases themselves, and never consider any person else." Now, it seems to me that happiness, and our ideas and views of life depend greatly on circumstances, not whether a woman is married or not. It is on ourselves, on the people with whom we live, and our means, although some people are happy with very little of this world's goods. An old lady, with little money, who lived alone, after making some self-denial for a charitable cause, said: "I'm the richest poor woman, the youngest old woman, and the happiest lone woman in this town." But the more money we have, the greater our opportunities for doing good and benevolent things, and the more comforts for ourselves.

For we often see children carrying burdens too heavy for young shoulders, and journeying on to the end of time with a life overshadowed by an unhappy childhood; while others' childhood is one sweet song. Then there are young girls losing the dew of their youth through the heat and burden of the day; while many are extremely happy and enjoying life to its fullest extent. Sometimes we see those of mature years weary of life from necessary toil; while others are resting on their oars enjoying the fruits of their labors. There are many married women who have every freedom, leisure time and happiness; while there are many like the woman whose words I have quoted. She was a woman, years old before her time in looks, and physically unfit for work. Her husband had given up his occupation and retired; but finding that life not satisfactory, had, instead of seeking something which would have been suitable for both his wife and himself, gone back to their former home, which would add much extra work to his wife's already overburdened shoulders.

Instances of this we see every day—men selfishly following their own inclinations, regardless of the extra work and trouble they cause their wives and daughters, till life is one ceaseless round of duties; task after task following each other in quick succession, with no time for rest or mental improvement, faded, weary and tired. No wonder some ask, "What is life? Why were we born? Why do we have to live?" The world is a beautiful place; everything in nature is in harmony and order. God intended us to be happy and contented. But it is the people who are all wrong. The root of the trouble is selfishness. There is selfishness in a greater or less degree in the home, in business, and in every walk of life.

Man is so physically strong, so weak when it comes to a question of self. He is dominated by selfishness. His own interests are first. Many think it manifests strength of character to carry their own point, to have their own way; but such is a mistake. The man who has force of character is he who can yield when it is for others' best interests; a strong man subdues his passions, the weak man allows his passions to subdue him. Strong characters have strong feelings, and a strong command over them.

There is an oft-quoted expression, "That a man puts the same price on his wife as she puts on herself." If she is willing to save and slave, they accept it; in time, demand it. But if she demand her rights, her husband will have more respect, consideration and admiration for her. The wife has her rights and prerogatives; it is her duty to conserve them and see that they are not encroached upon by others.

A gifted writer says: "No soul can reach its best development beneath the absolute dominion of an imperfect human master, but must be cramped and crippled and deformed." So, if one's husband strive for the supremacy, and is tyrannical, the wife would be restricted, and the husband warped and dwarfed. But if they endeavor to live up to the highest in themselves, and both seek each other's good and best development, and mutual love and pleasure, so may they strow life's pathway with the choicest

flowers of happiness. Queen Victoria described the Prince Consort as having been to her "husband, father, lover, master, friend, adviser, and guide." That seems to sum up the ideal husband.

The duty of every woman is threefold: to herself, to her husband, and to her children. Let every woman keep in good health, and be at her best; take sufficient rest, sleep, and plenty of good mental and spiritual food; leave out non-essentials; eliminate superfluities; live the simple life, if necessary; but be not overtired, for to be overtired means the sharp word, the quick and angry retort; then unhappiness in the household. Live so as to create a sunny atmosphere; be to your husband and children a genial ray of sunshine. And, as a flower turns towards the sun, and day by day unfolds its petals, revealing its wonderful sweetness and beauty till it is a joy to the beholder, so by your good example and influence, see your children and husband develop, day by day, the most beautiful qualities of their natures. Unselfishness, usefulness, goodness, sympathy, loveliness, benevolence and devoutness form themselves into life and character, and these characters make the world much happier. And, when you come to the end of life's journey, and pass through the pearly gates, you will hear the well-earned words: "Well done, good and faithful servant," from the lips of the King. A CANADIAN.

Middlesex Co.

OUR SCRAP BAG.

Hemming Napkins.

Everyone knows how hard it is to turn a very narrow and perfectly even hem in table napkins. Put the hemmer attachment on your sewing machine, but do not use any thread. Just run the napkins through the hemmer without sewing them, and they are creased as narrow as desired, and are all ready for hand-sewing.

To extinguish a fire in the pipe or chimney throw enough salt in the stove to cover the fire. It will create muriatic gas, which will put out the fire above.

To make dresses less-inflammable, put an ounce of alum in the last water in which muslins or cottons are rinsed, or in the starch, if starch is used. They will not take fire easily from a chance spark if thus treated.

To soften the hands, rub them with a little vinegar, or vinegar and corn meal, frequently, especially after you have had them in strong soap-suds while doing laundry or other work requiring the use of strong soap.

Garden Huckleberries.

Dear Dame Durden,—In last week's issue of our valuable Nook, you asked to hear from us concerning novelties in the flower and vegetable garden. Mine last season was the garden huckleberry. When I received the seed, I found ten tiny seeds enclosed in a tiny envelope inside the seed packet. I planted the ten seeds indoors. Seven grew. But, owing to a misfortune, I had only three plants to come to perfection and bear.

Some friends, who saw them growing, said: "My, how they resemble nightshade. I'd be afraid to eat them." I had great faith in the seedman I bought from (he advertises in "The Farmer's Advocate"), and so decided to try them. The first pie I made from them, I put the berries (raw) in the pie, and cooked with two crusts. We did not like them as well that way as afterwards, when I cooked them thoroughly first, and made pies of the cooked fruit. When mixed with elderberries, and cooked first, they make excellent pies. As one friend remarked, "The best pie I ever ate."

In making the pies, I always bake with upper and lower crusts, put in some sugar and a little flour in the bottom, then the cooked berries and remainder of a cupful of granulated sugar, a table-spoonful of vinegar, and a little nutmeg.

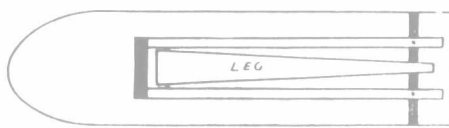
To clean an old lantern, take it all apart; take out all the oil; place it on its side in the wash boiler; put in all small pieces, except chimney; cover with cold soft water and plenty of soft soap; bring to a boil, and let boil half an hour, then take out and shake and jar well, and wipe dry, and it will burn like a new one. Hoping this will be a little help to some reader.

Kent Co.

CONTENTED ONE.

An Ironing Board.

Dear Chatterers,—I have long intended writing, as I, too, find the Ingle Nook helpful and interesting. I was much interested in the clothes-closet ideas. I made a lot of the barrel-hoop hangers, as suggested. Then I took two small pieces of board, bored a hole in each, put a No. 9 wire through holes, and bent them; screw-nailed the boards to each side of closet, leaving a tight wire the length of closet about 10 inches or so from wall at back; and what a lot of clothes I can hang on this wire, coats, shirt-waists, skirts, etc., nothing missed, and yet none hidden, as the edge of each garment is in sight. I will try to give you a plan of my ironing board, which I like better than any other design I have ever seen, and any person can put it on a board that can handle tools at all. The leg is 2 feet 6 inches long, and is fastened on with a 3-inch T hinge. The top nicely fills the space between frame, and has two nails that are two inches from top, and work as a lever in tightening board to table, which end of frame is loose. The leg, when down, just touches the frame. The frame is 34 inches long, and is one inch from end of board, and leg must be two inches from end of board.



Ironing Board.

The strap that holds the frame is the thickness of your table, and is bolted through frame, strap and board. When fastening board to table, you keep the leg up till you slide the end on, then drop it, and you have a solid board that does not even wiggle when ironing on the end of it, and is small enough not to be cumbersome in any way.

Here is a recipe for fruit cookies that are nice: Two eggs, 1½ cups granulated sugar, 1 cup butter, ¼ large teaspoon soda dissolved in 8 tablespoons sour milk, 1 teaspoon of cinnamon, cloves, allspice, and nutmeg, 1 cup seeded and chopped raisins, and flour enough to roll. Now, I would like to know what will remove the stains of sweet oil from cotton? It has been in over two years, and no washing seems to take it out.

I made one of the doll-basket cradles, and it was so pretty; thanks for the suggestion. LORENA.

Not understanding the diagram sent by Lorena, I wrote her for further explanation. She sent the following, which, I trust, will make the construction of the board clear:

The frame of board is only fastened at front, 6 inches from end of board, and that with two bolts, not very tight, so as to leave a little play; then the leg is fastened to board by a strap or T hinge one inch from loose end of frame on the inside, and in this leg, two inches from top, are placed one three-inch nail on either side of leg, so they are behind the frame. When board is adjusted to table, the leg is dropped, and these nails being two inches from board to frame hold the frame that distance from board, thus lightening the front of frame, which is only thickness of front bar, and that the thickness of table top."

AFTER-FULFILMENT.

I hungered. They gave not. I hunger no more.

Now how they hasten to lavish their store—

Apples of gold, the Hesperides gave, And mellow Falernian, brought from the cave!

I was night-bound and homeless. They cried "Hence, away!"

I have found the blind road into ambient day,

And they build me a dwelling and deck it with theft

Of marble and splendor, from palaces reft!

I entreated them, "Hear me!" They turned with a jest.

Now, when the dove-silence broods in my breast,

They would make me dispenser of laughter and tears.

With words that are magic, enchaining all ears!

—Edith M. Thomas, in the New York Independent.

Children's Corner.

[All letters intended for the Children's Corner must be addressed to "Cousin Dorothy," 52 Victor Ave., Toronto.]

CRUEL TOM.

Tom sat at the parlor window,
Watching the people go by;
But what was he really after?
Why, plucking the legs from a fly.

Ay, there he sat in the sunshine,
Tormenting the tiny things;
First plucking their legs from sockets,
Then afterwards clipping their wings.

He didn't know then that his father
Was waiting till Tom had a game;
Then he thought he would give him a lesson,
And treat him a little the same.

So catching his son of a sudden,
And giving his elbow a twist,
He pulled at his ears till he hollered,
Then doubled him up with his fist.

And didn't he twist on the carpet!
And didn't he cry out with pain!
But whenever he cried, "Oh, you hurt me!"
His father would punch him again.

"Why, Tom, how amazingly funny!
You don't seem to like it, my boy;
And yet when you try it on others,
You always are singing for joy."

"Hush, hush! while I pull both your legs off,
And clip off the half of your arm;
What you practice yourself, sure, on others,
You can't think a sin or a harm."

"Now, Tommy, my boy," said his father,
"You'll leave these poor creatures alone?
If not, I'll go on with my lesson"—
"I will," cried poor Tom with a groan.
—Barr.

THE DEBATE.

Dear Cousin Dorothy,—Have animals any feelings, and, if so, should they be considered? I think they have, for if you step on a cat's foot, it will make a noise. I have a dog, Bounce, and if I speak cross to him he will go away from me, and if I speak kind and gentle to him, he will come and wag his tail. When you make a noise, the hens will run and scatter in all directions. We have two horses which I am sure appreciate kindness, for they will come to us and eat apples, etc., from our hands. In fact, all the farm animals seem to show a fondness for those who are kind to them, and their feelings should always be considered. It helps us to be kind, and promotes the happiness and contentment of the animals.

FREDA KATHLEEN BISHOP (age 12).
Round Hill.

Dear Cousin Dorothy,—I think I am the first to write from Petrolia. I will try to write on the debate, "Have animals any feelings?" Well, I think they have. Everyone knows when they step on a cat's paw how it will "meow," and a dog will growl if you hurt it in any way. If these dumb animals had no feelings, would they "meow" and "growl"? What a sorrowful sight it is when you see cruel people lashing their poor, tired, dumb creatures. I wonder what they would think if someone came along with a whip, and said, "Now, you stand still and don't say one word!" I am done with you." Petrolia is an oil district, and derives its name from petroleum. Although the oil has almost played out, we hope some manufacturing enterprise will establish themselves here.

WITH A SMILE.

Petrolia, Ont.

THE NEXT DEBATE.

I suppose the children who treat animals as if they had no feelings are too ignorant to write letters, as none of them have written us their arguments. So we will decide for the affirmative. One of the Cousins would like a debate on which is the nicer season, summer or winter?

C. D.

In Bedroom Bureaus Are Often Found Articles of Value, Put Aside Because They Look Spotted, Faded and Dingy.



"Some weeks ago while searching through the drawers of a bureau, I found a faded gray Nun's cloth skirt, a shabby looking muslin shirt waist and some pieces of faded and crushed ribbons. Having had some experience with Diamond Dyes, I decided to have 'a dyeing day.' I bought the Diamond Dyes I needed, three packages for Wool and one package for Cotton. My coloring work was an immense success. At a cost of forty cents I have gained about twenty dollars. It pays me, and will pay all others to use Diamond Dyes."

Mrs. Chas. K. Linwood, Glace Bay, N.S.

DO NOT FORGET about the old things which you have stored at present in your bureaus and wardrobes. Though cast aside as useless, they are still valuable. A magic bath in some fashionable and popular color of the Diamond Dyes will make the old things as rich and handsome as newly bought goods.

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\$12 WOMAN'S SPRING SUITS \$6.50 Tailored to order. Also suits to \$15. Send today for free cloth samples and style book. Southcott Suit Co., London, Ontario

THE LETTER BOX.

Dear Cousin Dorothy,—My father has been taking "The Farmer's Advocate" for nineteen years, and thinks it is a good paper. We have two farms, and milk 20 cows. We have an incubator, and had over two hundred chickens last summer. I have three brothers; two of them are older, and one is younger than me. One of them is going to high school. I am ten years old, and am in the Senior Third Class. I am going to try for the Fourth Class at midsummer. To-night my brother and I were on the farm, and we saw an owl. We tried to catch it, but could not. It flew away too quickly. I wish some of the children of the Corner would write to me. CLEWORTH FOSTER. Moira, Ont.

Dear Cousin Dorothy,—I am seven years old. This is my first letter to the Children's Corner. My mamma reads the letters to me, and I laughed at Myrtle Pugh naming her kitten Stickem. My kitten's name is Lily, and my dog's name is Collie. He comes to meet me when I come from school, and I always save a bit of my dinner for him. I cannot think anyone would be cruel to animals. I would like a pony some day. We have four horses now; their names are Deck, Gyp, Floss, and Bess. I have only been at school since holidays, and cannot write very well. WILFRID WILCOX. Mt. Brydges, Ont.

Dear Cousin Dorothy,—I go to school regularly, and I am in the Junior Second Class. I have a half a mile to go; but we drive in the winter. I have a dear little baby brother. He is only 4 months old. We call him Teddy Bear. I guess some of the little girls will say that is a funny name for a baby; but his right

has taken "The Farmer's Advocate" ever since we started to farm, and will take it till we finish. Bolsover, Ont. RAY FORESTER.

Dear Cousin Dorothy,—I would like to correspond with some of the boys who write to the Children's Corner. I am fourteen years old. HOMER McMULLEN. Zimmerman, Ont.

Myrtle Whitmell, Dunchurch, Ont., would like to correspond with some of the girls.

To Disappointed Writers.

N. B.—If your letter has got into the waste-paper basket, it couldn't have been very interesting. Write us a better one! C. D.

Dear Cousin Dorothy,—This is my second letter to "The Farmer's Advocate." We have two cats, and the kitten is three times bigger than its mother. We have a dog; his name is Norman; he is part Newfoundland and part Eskimo mixed. He draws us in a cutter in winter, and, in summer, in a cart. I have some pigeons up in our barn. Papa had 84 hives of bees; he started with two hives. I help papa to pack them up for winter in shavings. We live on a nice place, about two miles from the city. In the summer, our lawn is nothing but May flowers. I go to school every day; but I don't walk to school when it is rainy. JAMIE HURLEY (age 9).

Waterdown School.

Dear Cousin Dorothy,—I wonder if any of your readers would like to know something about our school. It is situated on a hill, which slopes nearly down to a beautiful creek. In the winter the boys sleighride down the hill, and the girls



A Drawing Lesson.

name is Richard Leo, and we only call him Teddy Bear for a nickname. IDA MAY BARRY (age 9). Renfrew, Ont.

Dear Cousin Dorothy,—I have a cat named Flossie; she is a Manx cat. We got her from New Hampshire when she was five weeks old. She has double paws, no tail, and instead of running like other cats, she jumps like a rabbit. She is proud when she catches a mouse, rat or bird, and will bring it to the house to show us. She can open any latch door. Besides her, I have a collie dog; his name is Whitney. We taught him to do lots of tricks. He will speak, sit on a chair, jump over a stick or through a hoop, roll over, pretend he is dead, and carry anything we tell him to without spoiling it. MARIE WARNER (age 11). Strasburg, Ont.

Dear Cousin Dorothy,—I am going to school, and am in the Third Reader. Our teacher will not let us kiss the girls, and, therefore, we do not like him. He is not much bigger than me, but is much crosser than I. And do you really think that boys should not play with the girls? I live on a farm, about a mile from the schoolhouse. I once had a dog, and if I scolded him he would run away and hide, and I would have to go for the cows alone. I think that we ought not to scold any of our pets. My father

make slides down it. There is room for lots of games in the summer too, as there are about five acres in all, and there is a big, shady lane right beside it where we play also. There are many beautiful shade trees in the grounds, and cement walks around the schoolhouse. The schoolhouse is stone, and has four rooms downstairs, besides a large hall, and a high school upstairs. There is just one man teaching downstairs, and he is my teacher. He is, also, the principal teacher. I am in the Fourth Room in the Junior Class. In the high school, there are two men and one lady teaching. There are so many hills in the village that the boys and girls have jolly times sleighriding, sliding and skating.

We have fine fun on Arbor Day; we all take rakes and wheelbarrows, and we rake all the yard up, and the boys take the wheelbarrows and put all the rubbish in a pile, and then we have a bonfire. We bring plants and seeds to school also, and have window boxes full of flowers all summer. This usually takes place in the forenoon, except planting the flowers, which does not take long; and, after dinner, last year a lot of us girls went down to the ravine and took our lunch, and there we spent the afternoon. Hoping this will interest some of the readers.

REPTA BELLE HENRY (age 11). Waterdown, Ont.

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the nerves, and restoring perfect circulation in the diseased parts. In order to convince all suffering women of the value of this remedy, I will send a 35-cent box, enough for ten days' treatment, absolutely **FREE** to each lady sending me her address.
MRS. F. V. CURRAH, Windsor, Ont.

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POWER LOT:

A Story of "Down East."

BY SARAH McLEAN GREENE.

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CHAPTER I.

A Message.

The Almighty—up at Power Lot—looks as though He had at last all kinds of material to work with; infinite ocean, broad basin, mad river, far heights, and sharp valleys, bowlders that make you catch your breath, and green pastures that lie sound asleep—all kinds of such business the Almighty has at Power Lot. And so much of it! Looks as though He laughed to Himself at last for the room there was, and tossed creation about helter-skelter and gigantic free.

I remember an artist who came there once, who seemed to think that it was all arranged.

"See that touch to the middle distance," he'd say; "watch that class of shadows; observe the symphony of hill and vale."

But I, being no artist, sucked in my sense of it first hand; and, as I say, it looked to me as though the Almighty, having leaned from His solitudes to a long view of the cities somewhere, and feeling stifled on those contraptions of walls and petty man-made ways, had turned back with an awful joy and had His rampage with our landscape there at Power Lot. I don't mean anything irreverent, either. A God-Almighty rampage with the landscape is something to make a man bow the knee.

POWER LOT, GOD HELP US—that was the complete name of our place; worse than Nazareth, you see. Yes, outsiders speaking of us said with meaning, "He lives over to Power Lot, God help us," or, "It happened at Power Lot, God help us." It may have been because it was so hard to get up to us there by the steep way; it may have been by reason of our poverty or our ignorance, but with our name was ever attached this invocation for supernatural aid.

So out of Power Lot, God Help Us, came patient toilers by land and sea, as well as vagabonds and ne'er-dowells with a taste for wandering; ambitionless, resigned women; runaway boys and girls; and out of Power Lot, God Help Us, came Mary Stingaree.

Well named! There was a sting to Mary, for me, at least; a sting I carry with me so long as I journey over this firmament in the garment of the flesh. I am not with Mary's sort of people now; she got far beyond me in a way. But somehow I've made up my mind it's a healthy sting. It's better, I reckon, to make your try at being a man than to win your sweet desire. So Mary stung me, and stings me ever.

A little, sulky-mouthed, broad-browed, black-haired girl was Mary Stingaree. Distrustful, sulky-mouthed—that came from old Bate Stingaree, drunkard, deceased.

Down to school at Bear River we went together, Mary and I. I was in her class then. Of course, the Bear River children derided us, coming from Power Lot, God Help Us.

Way back from somewhere Mary had inherited a steady, never-failing gristmill of brains, and a singing voice like a soul quit of flesh. Bear River was poor in musical talent, so they let Mary in to the Baptist church to take part in a Sunday school exhibition. She sang; there were some tourists stopping at Bear River, and they applauded for delight, clapping their hands. Mary thought she was being derided again, the troubled little soul from Power Lot, God Help Us, and she went out weeping bitterly.

But the gristmill of brain kept a steadily revolving wheel. From Bear River district school to the distant academy at Wolfdale Mary worked her way. She came home on a vacation, fourteen years old now, and grave as a woman.

"May I see you to evening meet'n', Mary?" said I. By this time she was sort of dissociated in everybody's mind from Power Lot, and had been admitted to the Bear River Baptist Church under deep religious conviction and a presumption of actual social equality. I sneaked along in the wake of her material welfare, wondering. Spiritually, she was lost to me.

"May I see you to evening meet'n', Mary?" said I, waylaying her at the bridge.

"I'll go back and ask mother," said she.

I waited at the bridge. She came back, stepping demurely. "Mother says 'Yes,' Jim."

I was nineteen, of a long line of toiling progenitors not much vexed by brains. I stood in awe of the bookish little maiden. This would be a great woman; I would put in my plea early, would begin courting already. I knew a bit of rustic etiquette in that line.

"Will you take my arm, Mary?" I said.

She blushed deeply, religiously.

"I couldn't do that, Jim," she said. "It would mean too much—it would be too intimate," said the bookish little maiden. "But I will take your hand, Jim."

So, hand clasped in hand, we went to the evening meeting at Bear River. Very proper and formal that may have seemed to wise little Mary Stingaree, but to me it was vastly tender. Her slender hand nestled in my broad one—I can feel it still. And I would have been content if the road from Power Lot, God Help Us, to Bear River had wound on and on through this mortal lifetime. That brief hour was my portion. Mary's ideas of convention changed.

The gristmill of brains kept steadily turning. From academy to provincial college Mary worked her way; then across the water to the highest seat of learning in the States; then a post-graduate course and a degree; and then, by reason of her marked ability, a position of distinction at the head of a seminary.

Just at that climax of her toiling ambition old Bate Stingaree fell in a drunken fit and broke his neck. A flock of evil crows swooped down over the Stingaree fortunes. The mother, half-paralyzed, took to her bed. The younger brother, a clean, straight fellow, went down with his fishing boat in a hurricane off the Gut. The older brother, dissolute like his father, had lost his position in a cloth manufactory in the States, and came home in rags. Mary was sent for, and took leave of absence to come home to her father's funeral.

It was the solemn desolation of winter there by the hills and gorges and the pounding, seething shores that lay off in view of Power Lot, God Help Us. The wind swept with endless moan through the cypress forests.

When Mary saw how it was with her people at home her eyes for a moment had that very look of the world without, just that look as of bleak gorges and the passion of the waves surging back, moaning and thwarted, from the shore. Then her lips took on the strength of the hills

and their quiet, too. She had grown tall and straight. She was more than beautiful; she was what my soul had prophesied; she was a great woman.

"Jim," she said to me, "you are one of that fated kind of whom it is easy to ask things, of whom one is always morally sure that no request will be refused. You have not reformed, like the rest of us. You have not had advantages."

There was an elf in her black eyes that might have been wicked, I had sometimes thought, except for stern schooling and the quiet habit of the big strong mouth. She smiled at me.

"I have read all the books you sent me, Mary," I replied, "three times over. I don't know what I should have done without them. I've been waiting to thank—"

"No," she interrupted me, meditatively, "you have not reformed. I don't believe you ever will. You have not had advantages."

I could almost have sworn that she was fond of me. But it was in a way too high for me to take any notice of. I understood that. The kindness in her eyes was hard to bear.

It was the sort to lure a child or a big, trusty Newfoundland. But first and last I adored her, and I stood confused to all except that she was near me, looking at me, and that I was ready to do her bidding.

"The sea is rough—cruel and rough—to-day, Jim," she said, "and there would be danger out there to-day, even to the staunchest little fishing vessel, managed by the most skillful hand that ever was?—danger even to Jim Turbine?"

I laughed. "You used to know better about the sea and the weather. Your advantages have left her out," I added, with a jealous eye to the spars of my boat, rocking down there under the ledge.

"And I'm selfish," she went on. "My one spar of hope up here would be—Jim Turbine. And I don't see," she went on, drearily, half-dreamily, looking toward the water, "how anyone of mortal frailty could trust himself to-day out on that heaving, tigerish waste of waters and—live."

"You used to love the sea, Mary." "I used to love"—some bitterness curled her lip—"many things. Now, what I have to do is to send a message, Jim. And, if possible, it should be sent at once. A message by wire from the station over at Waldeck. But it may be softer weather to-morrow."

"You've remembered what we say, here, about the weather being 'soft' sometimes," I answered gratefully. "But it is soft for winter, Mary—right down soft; it won't be any softer for weeks. A boat's easy managed out there, if you know how." I laughed again. I had no fear, even of taking Mary over to Waldeck. The sea was not running either stormy or strong, to my way of thinking.

"Will you take my message over, then?"

"You—wouldn't have to go?"

"No." She smiled. "I could write it down, and you could take it. And I"—she added gravely—"should always be in your debt for a very, very great kindness."

"You get it ready, Mary," I said, blusteringly, for I was disappointed and chagrined. A telegram had been to my mind a sort of rite which demanded personal supervision. "You go and get it ready right now, and I'll take it over."

"My good—brother—Jim," she said, with eloquent eyes; and with that I had to make myself content, just a good brother waiting there to go out and cross the winter bay for her, who was no sister to me, but so much my heart's desire that every sense of my body ached stupidly. Then I got to thinking of her, and what the message probably was. I knew before she came back to me with it—a folded slip of paper that I buttoned up in my inner pocket. Then I hesitated.

"It isn't sealed orders to me," I said. "I—I'm afraid I know what you are going to do."

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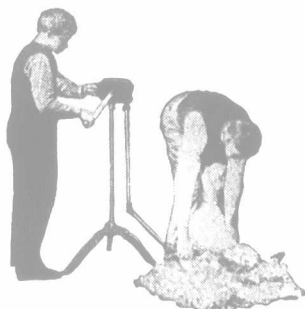
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"Well?" "You are going—to give up your position—that you've been working for—all these years."

Her face was pale and set, but she kept her pleasant humor. "You are a wizard, Jim. You have something far and away beyond advantages; you can read writing up a flight of stairs and behind doors. You—"

"Yes, I can," I said. "I can read it all right every time. But you just stop and think, Mary. Some other woman could manage this miserable business here. But you! Good Lord!"

"It's my mother and my brother, Jim. It's my mother. I have 'thought,' never fear. I have made up my mind. Say no more about it."

"You ain't fit for it. You're fit for the place you've been filling back there. You've no right to go and knock it all over. It's—it's burying yourself alive."

She put her hand lightly on my rough coat, but somehow it impelled me toward the door. She smiled again in that moment as we

stood looking off from the heights of Power Lot.

"'Buried alive,' " she repeated, her lip twitching; "this is more like a vantage ground for ascension. Don't you think so, Jim?"

"All right, you can smile now. It will kill you inch by inch, though, as you go on. It will break your heart. You've got used to such different things—and the ambition of you—my Lord! And you've changed! Why, when I first saw you I thought I'd have to say 'Miss Stingaree.' I think so now, half the time when I look at you."

"'Miss Stingaree' would forsake this and go back to her business?" "Yes, and she'd have a good right to do it."

"What would 'Mary' do, according to what you remember of her?" She was looking at me so intensely she seemed to forget that my big body was there covering my soul. She fished up my soul, and I had to see the way it was. And I had to speak, too, and speak quick.

"Oh, d—n," I swore, "she'd 'a' stayed."

"There's so much of 'Mary' left

in me that it bothers me, Jim," she said, in her whimsical way, but I thought there was a dash of honest fretfulness in it. "Mother—clings to me. And Bate—the case is desperate altogether. It seems to demand someone of their own, who is bound by duty, and who understands and can have patience. I tried to think it was common sense to go. I could earn money for them back there—but I can't go. And when you can't go, there's no way but to stay. I thought you would have been glad to have me stay."

"I reckon, I was a-thinkin' of you."

"Perhaps you were. You used to have a habit, quite strong, of letting your thoughts go moonshining about in the interests of other people. I dare say it has grown upon you, as bad habits do."

It isn't any fun to have eyes like Mary Stingaree's caressing of you, when it's all got to stop there, and your part is just to plod out the path of the good brother. I stepped outside for a bluff, as though I was sick of the house air and wanted to make off.

"Well, I'll take your message over," says I. "There's a Hand at the hellum somewhere," says I. "I reckon on finding that out for sure some day. Meanwhile I'm steerin' the best I know, in the dark. But you take it from me, that it's plumb in the dark."

"I won't forget that it's dark, Jim."

My head cleared when I got out on the bay, and steering was all the business in hand for me. I let it go—that about Mary, the mystery of it. A great, faithful ambition, to reach its hill-height, and then get knocked in the head and stunned in the heart, like I knew the case was with Mary.

So many books she had sent to me, to try to lead me on a bit. But I couldn't remember much to the point in them to help just now, except what an old blind man who sold his writings for a few pounds said once—to "Steer right on."

Sailor or landsman, he had the trick. And, considering the circumstances, his words sang down to me, carrying mighty weight with them,

"Nor bate one jot of heart or hope, But steer right on."

That old blind man, working away

POULTRY AND EGGS

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

BUFF ORPINGTONS—Pure-bred—Eggs, \$1 per 15. 9 chicks guaranteed \$5 per 100. Extra heavy layers. Hugh A. Scott, Caledonia, Ont.

BARRED ROCKS—To introduce my stock, eggs for hatching 75 cents for fifteen. N. Smith, Jerseyville, Ont.

CHOICE Rhode Island Reds—Eggs, one dollar per setting. Cockerels one dollar. Emerson Turf, Welland, Ont.

CANADA'S champion Barred Plymouth Rocks at Toronto. First, cocks First, second, third, fourth hens. First, fourth, cockerels. First, second, fifth, pullets. Some excellent cockerels for sale. Jno. Pringle, London, Ont.

DUCKS—Indian Runners—Ducks, twenty-five Indian Runners for sale. Eggs now ready for shipment. Also Black Orpington eggs from choice stock. Some Ind an Game hens. S. D. Furninger, St. Catharines, Ont.

EGGS for hatching from specially selected matings. Barred Rocks, Buff Orpingtons Rhode Is and Reds, \$3 for 13; \$3 for 26. Any variety. Cash with order. J. N. Cober, Box 203, Hespeler, Ont.

EGGS for hatching. Pekin ducks (imported), eggs twenty-five cents each. White Wyandottes (Fisher), R. I. Reds (Thompson), eggs fifteen cents each. Farwell Poultry Farm, Oshawa.

EGGS for hatching. Choice White Wyandottes and Barred Rocks, \$1 per two settings. W. A. Bryant, Cairns, Ont.

EGGS—White Wyandottes, dollar. \$95 champion heads pen. Cockerels. H. O. Helm, Haverhill, Ont.

GLENE FARM White Plymouth Rocks. Canada's leading strain of utility fowl. Bred for meat and winter egg production by use of trap nests. Winners at the "Ontario" for three successive years. Eggs \$2 per 15. G. A. Robertson, St. Catharines.

INGLE NOK Poultry Farm offers eggs from selected pairs of heavy laying strains—Brown and White Leghorns, Buff Orpingtons, B. Minoras, and Barred Rocks \$1 per 13. White Leghorns only \$5 per hundred. W. H. Smith, 41 Spruce St., Toronto.

MY Barred Rock—237-egg-hen—is still Canadian champion. Send for circular. J. R. Henry, Waterdown.

MAMMOTH B. turkeys for sale, bred from imported stock. Young birds took 1st and 2nd at London, 1907. Pairs and trios mated not sold. E. G. Rose, Glanworth, Ont.

MOTTLED Ancona eggs, \$1.50 per 15; single-comb White Leghorn eggs, \$1.00 per 15, \$4.50 per 100. Winter layers. Money makers both. Circulars free. E. C. Apps, Box 224, Branford.

PEACHGROVE FARM—Eggs from Buff Orpingtons and Brown Leghorns (grand layers), dollar per fifteen. Indian Runner duck eggs, 10c. each. Frank Baird, Glanworth, Ont.

RED PYLES—The proudest and gamest. Lorne Game Yards, West Lorne, Ont.

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Houdans and White Wyandottes We won more prizes at the leading Canadian shows than any other exhibitor on Houdans. Houdan eggs, \$3 per 15; Wyandotte eggs, \$2 per 15, or \$8 per 100. Write for circular. Charlton Bros., Box 1, Hilderton, Ont.

MORE SHIRES FOR CANADA.

C. K. Geary, Manager the Canadian stables, at St. Thomas, Ont., of John Chambers & Sons, of Holdenby, Eng., advises us that the firm are shipping him this week from the Old Country another large consignment of Shires, composed of stallions and mares. Among the stallions will be a number of two-year-olds; while the females will include some three-year-old and four-year-old fillies, in foal. Watch our columns for particulars.

Defying Age.

That's the story I am told:
"Gittin' ol'! Gittin' ol'!"
Well, mebbe so, but seems t' me
I'm spry as what I uster be.
Git yer fiddle—draw yer bow—
Rosum up an' let 'er go—
Louder! Faster! Let 'er sing!
Watch this ol' time pigeonwing!
What's the matter—air y' dun?
Cracky, I have just begun!
Whares that weakened up ol' soul
Telt me I was gittin' ol'?

for little or nothing, either of love or money or appreciation, he got the whole voyage down on his chart in just those twelve words.

(To be continued.)

IN THE MORNING.

Oh, dear little heads on the pillow,
So full of perverseness and fun,
I pause in my haste to awake you,
And cause you from dreamland to come;
The new, busy day lies before you,
Of school joys and sorrows combined;
But, oh, these glad days will ne'er come again;
Be kind, little lads, be kind.

Sometimes my heart seems like breaking,
When I think on the days that have been,
You've been molded, and scolded together,
Where one was, the other was seen,
My mother-arms held you my bairnies,
'As mother-arms only can bind;
Then oh, for the days when parted you'll be;
Be kind, little lads, be kind.

You've roamed all your short lives, my laddies,
All over this dear home galore.
The orchards, the meadows, the tree tops,
Each land-mark you've been to explore;
The bend in the lane you have travelled,
Till you almost could travel it blind;
Then oh, for the day when the nest you've out-grown,
Be kind, little lads, be kind.

Your coming was hailed with rejoicing,
And proudly your father and I,
Have watched each developing fancy,
And shielded the clouds from your sky,
But the gray with the brown's intermingling,
And our brows with furrows are lined;
Then oh, for the love that will never grow old,
Be kind, little lads, be kind.

MRS. ARCHIE M. COLLVER,
Simcoe, Ont.

SOME "DON'TS" OF ORDINARY "GOOD MANNERS."

1. Don't make a noise with your mouth while eating or drinking.
2. Don't put your knife in your mouth.
3. Don't open your mouth while chewing, nor take large bites at any time.
4. Don't talk while food is in your mouth.
5. Don't tuck your napkin under your chin.
6. Don't leave your teaspoon in your cup; put it in the saucer.
7. Don't put your arms or elbows on the table; sit erectly.
8. Don't butter a whole slice of bread at once; take it in detachments.
9. Don't lay the knife and fork with which you are eating on the tablecloth, nor drag them from the edges of the plate.
10. Don't forget to ask the hostess (not the whole company) to excuse you if you come to the table late or leave it before the others have arisen.
11. Don't loll in your chair at any time.
12. Don't cross your legs at any time; it is bad for the health as well as rude to do so.
13. Don't talk loudly.
14. Don't fidget. If you are nervous, at least sit still.
15. Don't forget to greet the hostess first when you enter a room; and do not sit down, unless she requests you to do so, until she is seated.
16. Don't talk in a slangy way, nor monopolize the conversation yours-elf. Don't talk about yourself continually; let it be seen that you are conscious of a universe that moves along all right, quite independently of you or your assistance.
17. Don't precede married or older ladies (if you are a girl) in going from room to room, etc. Be especially courteous to and thoughtful of the aged.

SOME EXTRA "DON'TS" FOR MEN.

1. Don't tilt your chair, nor lean your head against a wall.
2. Don't stretch your legs out half

way across the floor. Sit uprightly as a gentleman should.

3. Don't help yourself first to any dish at the table. Offer it first to the lady who sits next you. Don't forget, also, to lift her chair in place for her as she sits down to the table, and out of her way, if necessary, as she leaves it.

4. Don't forget to stand up when a lady first enters the room, remaining so until she is seated.

5. Don't forget to raise your hat when offering the slightest service to a lady, whether you know her or not.

6. If you are out with a friend and meet a third party whom you do not know but whom your friend salutes, don't forget to raise your hat. Of course you do not speak in such a case.

7. Don't precede a lady ever, unless necessary for her protection or convenience.

MAXIMS OF A QUEEN.

I have received from Mr. John Lane an interesting booklet called, "The Maxims of a Queen" (1s. net). Their author was Christina of Sweden (1626-89), and on their first appearance these maxims were said to rival the sayings of La Rochefoucauld. But in the epigrams of Queen Christina there is none of the cynicism which characterizes the sayings by the great Frenchman. From this translation, which has been made by Una Birch, I give the following examples:

The secret of making oneself ridiculous is to plume oneself on the talents which one does not possess; we may deceive everyone but ourselves.

Modesty is a kind of sincerity. We love those to whom we have done good, and hate those to whom we have done evil.

We should be more miserly with our time than with our money.

Men always eye with disapprobation the things they are unable to do.

The passions are the salt of life; we are neither happy nor unhappy except in their exercise.

Counsel is not command. Extraordinary merit is a crime which is never pardoned.

Those who do not please seldom deceive.

We should rather fear those we love than those we hate.

We are always sufficiently clever if we are sufficiently strong, for mere cleverness seldom makes up for want of strength.

A man of great ability can neither please a fool nor love him.

We should never believe anything we have not dared to doubt.

We should make no comparisons for fear of doing an injustice to others or to ourselves.

Men only shed their ambition with their skin.

The past should count as nothing, we should always live at new costs.

The man is worth nothing who does not prefer duty to pleasure.—[T. P.'s Weekly.

MY MOTHER'S PAISLEY SHAWL

Among the pictures, fair and bright,
That hang on memory's wall,
Is one of vivid hue and tone—
My mother's Paisley shawl.

Ah, well I mark the distant time,
And well I mark the place,
When mother wore, in lengthened folds,
The shawl with stately grace.

Wide-eyed, admiringly, I'd watch
Dear mother making calls
On friends and neighbors who, perchance,
Could boast no Paisley shawl;

Or, proudly walking by her side
To church or festival,
I shared reflected glory from
That wondrous Paisley shawl.

Like that old shawl was mother's life,
Rich-hued, and warm and true,
God grant her sweet beneficence
Descend on me and mine!

—Cora Walker Hayes, in Munsey's.

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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.

EXTRA choice seed corn for sale: White Cap, Essex grown. George Gould, Edgar Mills.

FOR SALE—One of the best farms in the Niagara District. Excellent buildings, nearly new. Forty two acres—five choice fruit, eight wheat, two bush Rich sandy loam. Near cold storage, canning factories, boat, railway, schools, churches, post office. Eight thousand. Easy terms. Owner retiring. Exceptionally fine property. Good water. Edward Parrall, P. Dalhousie, Ont.

SEED CORN—Reliable seed corn that we guarantee to grow or money refunded. The largest and most comprehensive seed catalogue published in Canada; send for it; sent free to all who write for it. Globe Seed Co., Ruthven, Ont.

TWO farms for sale near Locust Hill, in York County. 140 and 115 acres. Land, clay loam; good buildings and fences. For further particulars address A. C. Reesor, Locust Hill, Ont.

WANTED—Herdman for Shorthorn cattle. Married man preferred. House provided. Address J. A. Pettit, Freeman, Ont.

WANTED, on large farm, man—single preferred—good with horses and machinery. References required. W. K. Gooding, Islington, Ont.

YOUNG man wants position as milkman. Good experience. Address: Rugg, care of C. Wood 226 Simcoe St., Peterboro, Ont.

FOR SALE—Standa d bred stallion, Addington Wilkes (No. 927), rising 7 years of age; 16 hands high; wei, ht, 1200 lbs. A sure foal-getter and a dandy. A good reason for selling. Apply to S. L. WILLIAMS, Camden East, Ont.

Choosing a Profession.

All afternoon I've hung around
Joe Burton's blacksmith shop.
I took the colts to git 'em sharpened,
'N there I had to stop
Till Joe got through three other jobs.
'N ever he got done
He let me blow the bellows, gee!
I had a lot o' fun.

'N once when he had tried a shoe
On Billy Jenkins' mule,
He let me take it to the tub,
'N chuck it in to cool.
O say, it made a bully noise,
Like beefsteak in a pan.
I'm goin' to be a blacksmith when
I git to be a man.

'N when Joe puts a heated shoe
Agin a horse's hoof,
There's such a dandy curl o' smoke
Goes up towards the roof.
'N it has such a funny smell,
Paw sez it makes him sick.
Huh! Paw's so blame pickticleer.
I think it's simply slick.

Joe lets me heat a iron rod
Until it's sizzin' white,
'N then I bent it to a point,
There's fun, all right, all right.
I bet 'at I could shoe a horse,
I know jus' how it's done.
It ain't no trick, not half as hard
As shootin' off a gun.

Blacksmithin' makes a feller strong.
Joe has a awful arm.
Say, he could lick mos' any man
What works upon a farm.
I think it's jus' the fines' fun
To hear the bellows blow.
You bet when I git big enough,
I'll run a shop like Joe.

Stump and Tree Pullers
 Self-anchoring and Stump-anchored. Something new. Pull an ordinary stump in 1 1/2 minutes. 1 to 6 acres at a setting. Different sizes to suit all kinds of clearings. For illustrated catalog address
Powerful, Handy, Low Priced.
 Millie Mfg. Co 886 Ninth St., Monmouth, Ill.



NO LEAK-NO RUST
 No buying of new tanks every season or two. Just what you need on the farm. All steel. Guaranteed 10 years. All sizes built to order. Write us your needs.
 Steel Trough & Machine Co. Ltd., Tweed, Ont.
 HOUSE CISTERNS



CONSUMPTION Book Free!

If you know of any one suffering from Consumption, Catarrh, Bronchitis, Asthma, or any throat or lung trouble, or are yourself afflicted, this book will help you to a cure. Write at once to the **Yonkerman Consumption Remedy Co., 132 Ross Street, Kalamazoo, Mich.** Don't wait—do it now.

Ayrshires Bull 4 years old, two yearling bulls, bull calves from \$12 up. Everything in this herd is bred right up to date.
JAMES BEGG, Box 88, St. Thomas.

The Spirit of the Sugar Bush.

Yesterday, superbly, over the edge of the world rose a rosy sun. It rose softly, noiselessly—I have often wondered, when the big sun hit an insolent cloud, why there wasn't a "Boom!"

But there wasn't a noise, not a little bit of a noise, for the sun does not travel with a brass band.

If you want to be great, you've got to be great to start with.

Do we pluck figs from thistles?

Greatness is not acquired. You get it in your baby days, and it worries your mother to death.

I would rather be a basswood.

Aunt Lucy folds her crochet work and looks at me over her glasses.

"Dear heart, would you be a basswood?"

"Yes, I wish to be a basswood; they don't tap basswoods; they tap the maples, and the maples are dying out."

Who heard it first, the "Spirit of the Sugar Bush" or the robin?

"Sure, I heard it," said the robin; "but I saw some of your stuff in a grocery store the other day—"

"My stuff?"

"Yes, your stuff," said the robin. "I guess you'd better make good."

"But all the real stuff I've made," said the Spirit of the Maple Bush, "was six pounds, and it was real nice."

"These folks come from the country," grinned the shipping clerk. "We have ten tons for export."

"The maple tree is a doorkeeper in the House of God. Every day he is insulted, every day he is slapped in the face."

But he is the maple tree all right. What boots it that they make maple syrup yonder? Why cry because they make maple syrup in a canning factory?

If you don't know that someone hath robbed you, you are not robbed. You never miss it. And if you don't know that you have been robbed—why, you haven't been robbed.

So when you get your maple syrup next week—if you think it is maple syrup—what's the difference?—[The Khan

GOSSIP.

The trio of Clydesdale stallions, whose illustrations appears on another page, were imported by the Graham-Renfrew Co., Limited, of Bedford Park, Ont. Men in a position to know whereof they speak, and who are familiar with all the leading studs in Scotland, say that never did they see three such high-class Clydesdales in any one man or firm's stable. Certain it is that the mould, type, character and quality of each individual horse is well-nigh faultless. Sir Marcus [7790] (13205) is a bay, rising five, sired by Sir Simon [5406]; dam Bowfield [13878], by Breadalbane [1978]; he has to his credit, since coming to Canada, first and championship at Toronto last fall, first and championship at Chicago last December, and first in the four-year-old class at the late Horse Show at Toronto. He is now the property of Capt. T. E. Robson, of London, Ont. Buteman [6080] (12881) is a bay, rising four, sired by Pride of Blacon [4072]; dam Dolly [9134], by Prince Rosemont [5345]; he has to his credit, first in the three-year-old class at Toronto last fall. He was not shown at the late Horse Show, owing to the very slippery roads, else a different tale might be told. He is sold to James Cowan, Cannington, Ont. Baron Howes [7791] (13847) is a black, rising three, sired by Baron Hood [6137]; dam Crown Pearl of Armprior [5885], by Crown and Feather [4643]; he has to his credit, first at Chicago in December last, and first and championship at the late Horse Show at Toronto. He is sold to Miss Wilks, of Galt. Lucky, indeed, are the farmers who will be privileged to use such horses as these.

Mush and Milk.

Truly has the poet sung: "Let me make out a national bill-of-fare, and I care not who pays the freight," or something like that. If I could only bring to the attention of some of the disturbing elements of society the real merits of "mush and milk," fully one-half of the world's trouble would disappear.

This great panacea has never been properly advertised. There should be a press agent, a high-salaried government official, who would devote his time to a mush-and-milk propaganda, bringing to the attention of the crowned heads of Europe and the bald ones of America the great and beneficent influence of this great American civilization.

Let Emperor William once come under its potent sway, and the whole of Europe would no longer feel compelled to look under its bed every night. If the Czar of Russia could be induced to eat a large-sized bowl of this pacifying compound every night after finishing his chores, would the clock and put out the cat, Siberia would no longer loom threateningly on every liberal-minded Russian's horizon.

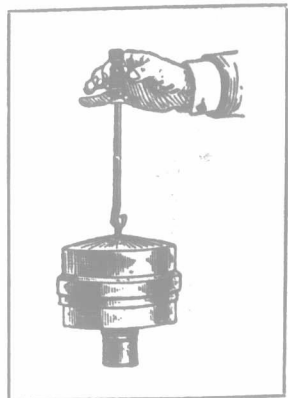
If Mr. Harriman—of course, this is a remote chance—if Mr. Harriman would make a practice of partaking freely of mush and milk every night, the owners of small railroads in this country would not have to sit up with shotguns to watch their property. If another man, erstwhile a resident of Oyster Bay, would follow these examples, the bears of the south-west would breathe easier, and possibly a few badly-seared capitalists in the East could be persuaded to come out of their holes.

Eat freely. In it there linger no dyspeptic germs. Eat often, and you shall rest as one who wraps the drapery of his couch about him and lies down to pleasant dreams. Let the whole world be brought under the influence of the mush-kettle, and animosities and acerbities would be impossible.

Senator Foraker and Secretary Taft would eat out of the same dish, while the "husky, rusty rustle of the corn," mingling with the listening ear. Food of our fathers, be with us yet, lest we forget, lest we forget—[New York Exchange.

Old Lady (who had given the tramp a nickel)—Now, what will you do with it?

Hungry Hoho—Waal, ye see, mum, ef I buy an auto, there ain't enough left to hire a shofur. So I guess I'll git a schooner. I kin handle that myself—Hohemian.



The Hanging Bowl of the Melotte makes it the easiest running Cream Separator yet made.

A hanging object will naturally revolve more freely than one propped up from underneath. The Melotte bowl requires neither neck bushings nor bottom bearings to support it. It simply hangs from a ball-bearing socket, and is not only practically frictionless, but it cannot possibly get out of balance. It runs so easily that a child can keep it turned to speed for hours.

If you are thinking of buying a separator, we can only advise you to sign nothing for other machines until you have tried the Melotte.

Write for catalogue and information.

Remember—We ask you to sign nothing to get a Melotte on free trial.

R. A. LISTER & CO., LIMITED, Stewart Street, Toronto, Ont.

WASH DAY WILL ALSO BE IRONING DAY



What a happy prospect for the busy housewife—washing and ironing the nuisance and upsetting of house affairs, all over in the same day, if you wash with a

"1900 GRAVITY" WASHER

What a priceless boon for the woman who is busy or not strong to have a washer that will cleanse a tubful of clothes in six minutes and do it better than if it were done by hand in an hour's time or more. Besides, it's all so simple. The clothes remain stationary in the tub and the swirling of the tub to and fro, swishes the water through the meshes, while the rise and fall presses out the dirty water.

We want you to try the 1900 Gravity Washer—it will cost you nothing to learn the truth. Don't fail to read our

FREE TRIAL OFFER

We are the only people on this continent that make nothing but washing machines, and that are willing to send a washer on

ONE MONTH'S TRIAL FREE

to any responsible party—without any advance payment or deposit whatsoever. We ship it free anywhere and pay all the freight ourselves. You wash with it for a month as if you owned it. Then if it doesn't do all we claim for it, ship it back at our expense. This proves our faith in the machine.

IT COSTS YOU NOTHING

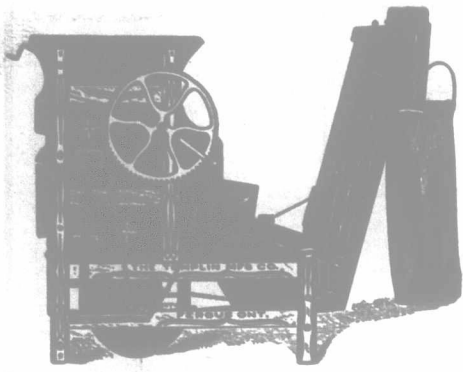
to find out how it pays for itself—shall we send you a "1900 Gravity" Washer on a month's free trial? Or, if you want further information about the best washer on the market, write to-day for our handsome booklet with half tone illustrations showing the methods of washing in different countries of the world and our own machine in natural colors—sent free on request.

Address me personally, **F. A. C. Bach, Manager**
The 1900 Washer Co., 355 Yonge St., Toronto, Canada

LOOK FOR THIS LABEL ON THE TUB None Genuine without it.



The above free offer is not good in Toronto and suburbs—special arrangements are made for this district.



PERFECTION Seed and Grain Separator

The latest and best device for cleaning and grading all kinds of seed and grain. 50 years ahead of all others. Sieves and vibration do the work, and do it thoroughly. Does not blow out good grain with the chaff. Perfect separation. Easy to turn. Saves its cost in one season. See nearest agent, or write for booklet F.

The Templin Mfg. Co.,
C. P. R. Fergus, Ont. G. T. R.

London Fence Machines



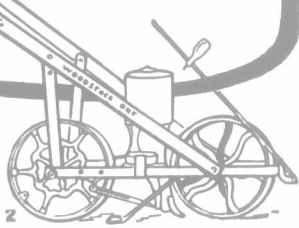
Only successful field machine. One man weaves 40 to 50 rods per day. Saves money. Builds fence to fit the ground. No waste wire. Works easy and uses Genuine Coiled Spring Wire. We furnish special high-grade spooled wire for weaving. For sale by hardware.

LONDON FENCE MACHINE CO.
LONDON, Limited ONTARIO

The "BACON" Seed Drills and Cultivators

The only Rear-Wheel Driven Seed Drill on the market. The feed in the "Bacon" handles seed without bruising or breaking, and seeds evenly to the last seed. Machine instantly converted from a regular seed sower into a hill dropper. Feed Cut prevents waste of seed when turning rows. For sowing Sugar Beets, Parsnips, Radishes, Carrots, Onions, etc., the 1908 model of the "Bacon" is unequalled for strength, lightness, easy running and good work. Write for our complete catalogues.

THE EUREKA
PLANTER CO.
Limited
Woodstock, Ont. 2



You Can secure a Self-supporting Home

In the glorious Kootenay fruit district, British Columbia, for \$10 cash and \$10 per month for ten acres. (Discount for larger payments.) Annual profits, \$500 to \$1,000 per acre. Orchard garden, poultry, grand scenery, hunting, fishing abundant pure water, healthy climate warm winters, cool summers; churches, schools, post offices, stores, daily express trains, lake steam boats within five minutes' walk; fine neighbors comforts of civilization, combined with delightful rural community. Will send maps, photos plans, proofs free. Refer to banks and commercial bodies, also hundreds of purchasers. Write to-day. Address, LAND DEPARTMENT, Kootenay Orchard Association, 459 Ward St., Nelson, B. C.

Stranger.—What sort of a man is your neighbor, John Brags?

Native.—Oh, he's all right, but he has a telescopic imagination.

Stranger.—How's that?

Native.—Yes. He can't even tell the truth without getting it at least two sizes larger than it is.

10c. The latest
success.

Black Watch

The big
black plug
chewing tobacco.

2285

GOSSIP.

"There was a strange man here to see you to-day, papa," said little Ethel, as she ran to meet her father in the hall. "Did he have a bill?" "No, papa; he had just a plain nose."

Gasoline engines are steadily becoming more popular as a farm power, being easily managed, quickly started, and doing satisfactory work. Stationary and portable gasoline engines, as advertised in this paper, are manufactured by the Scott Machine Co., engineers and machinists, London, Ont. See their advertisement, and write them for particulars.

As a magnificent steamer, the property of the Peninsular and Oriental Company, was steaming into Southampton harbor, a grimy coal lighter floated immediately in front of it. An officer on board the steamer, seeing this, shouted: "Clear out of the way with that barge!" The lighterman, a native of the Emerald Isle, shouted in reply: "Are ye the captain of that vessel?" "No," answered the officer. "Then spake to yer equals," said the lighterman. "I'm captain o' this."

OAK PARK AUCTION SALE.

The Oak Park Stock Farm Company, of Brantford, Ont., announce in our advertising columns this week their first annual sale of imported and Canadian-bred Hackney stallions and mares, Shropshire ram and ewe lambs, Berkshire boars and sows, seed grain and potatoes, to take place at the farm, midway between Brantford and Paris, on the electric road, on Thursday, April 2nd, at 1 o'clock. The character and quality of this stock should attract buyers from near and far. The splendid prize-winning record of the Oak Park stock at the leading shows last year speaks for its merit. See the advertisement, which gives fuller information.

Mr. O. Sorby, Guelph, Ont., writes: "I have sold the four-year-old Clydesdale stallion, Royal Thomas, to Edward Hay, Orchard, Ont. Royal Thomas is a horse of rare quality, and the best of breeding on both sides. His sire, the noted Prince Thomas, was one of the largest Clydesdale sires in Scotland, and was purchased by the Messrs. Montgomery at auction for 900 guineas. The grandam of Royal Thomas was Lady Darnley, by the famous Old Darnley (222). By this it will be seen that Royal Thomas combines the best of breeding in his pedigree, viz., Prince of Wales and Darnley, and he should prove a No. 1 stock horse. I have also sold to Wm. Hamilton, Carnduff, Sask., the premium horse, Abbey Fashion, a horse of the best of breeding, a splendid goer, with lots of style and action."

THE LONDON HACKNEY SHOW.

At the London (England) Hackney Show, the first week in March, in the class for stallions five years and upwards and over 15.2, the eight-year-old chestnut horse, Copper King, bred and owned by Mr. Alfred Benson, and sired by Mathias, was first, and later, won the senior and supreme championship awards. Kirkburn Torreador was second in the class; Diplomatist, third, and McKinley, fourth.

In the class for stallions five years and not over 15.2, Mr. R. Evans' six-year-old chestnut, Evanthus, by Polonius, was first; Harrowgate Surprise, second; Royal Fair, third. There were two classes for four-year-old stallions, the first being for horses foaled in 1904 and over 15.2. Mr. Hall's chestnut four-year-old, Copmanthorpe Performer, by Garton Duke of Connaught, was easily first; Forest Danegelt, second, and Witcham Lord Nelson, third. In the class of same age, not over 15.2, Mr. Tubbs was first with Leopard, a chestnut, by Leopold. Pad-dock Grand Slam, by Conquest, was second, and Gartonius, by Garton Duke, was third.

The junior champion stallion was Sir Walter Gilbey's two-year-old, Flash Cadet, first in his class, by His Majesty. The grand champion mare was last year's champion, Hawsker Rosina, by Rosador. The junior champion mare was the three-year-old, Lively Beeswing, by Royal Danegelt.

Mr. P. O. Collins, Bowesville, Ont., writes: "Our herd of Large Yorkshires has come through the winter in excellent condition, and our spring litters are coming thrifty and strong. Our best sows are due to farrow in this month to the service of such excellent sires as Metchley 20th, a prizewinner at London, Toronto, Ottawa, and Sherbrooke; Summer Hill General 9th, a prizewinner also at Toronto and Ottawa; Cedar Lodge Dalmeny Royal (imp.), a first-prize winner at Ottawa two years in succession, and Cedar Lodge Chief, also a prizewinner at Ottawa and Sherbrooke, 1907. We also have a large number of young boars ready to ship, sired by the above-mentioned boars, and out of prize-winning sows, that, in show form, weigh from 600 to 800 lbs. For sale, also, are a pair of very choice boars of September farrow of choicest breeding and individual excellence, and weighing about 240 lbs. each. Intending purchasers would find it to their advantage to get our prices before placing their orders."

GRAND RAPIDS VETERINARY COLLEGE.

The eleventh annual commencement exercises of the Grand Rapids Veterinary College, of Michigan, will be held in the College Auditorium, on Thursday evening, March 26, 1908. A class of fifteen young men will be graduated, receiving the degree of Doctor of Veterinary Medicine, and will go forth to devote their best efforts to relieve the suffering of man's best friends. A very entertaining programme has been arranged for the occasion, consisting of music by the Wurzburg's Orchestra, and addresses by Geo. E. Ellis, Mayor of the city, and Colon C. Lillie, of Coopersville, Michigan's Food and Dairy Inspector, as well as others. The present year has been one of the most prosperous for the College since its organization, the enrollment reaching beyond the one-hundred mark; students coming from all parts of the United States, Canada, Cuba and Australia. The alumni of the College will meet between the hours of two and four o'clock, when several papers will be read and discussed upon subjects of vital interest to the veterinary profession. It is also the desire of the graduating class to have a few clinics for demonstration and entertainment of visiting veterinarians.

CLYDESDALES FOR CANADA.

Messrs. A. & W. Montgomery, Kirkeudbright, on March 1st, says the Scottish Farmer, shipped to Mr. Wm. Colquhoun, Mitchell, Ont., the handsome big horse, King Duke (11764), and three extra good, thick, and well-bred mares. King Duke was bred by Mr. Colin Munro, Tullich, Muntochy, and got by Duke King, out of a mare by Ringleader. He has held the Speyside premium, and being a good doer, is sure to be popular in Mr. Colquhoun's hands. The mares are headed by the four-year-old, Lady Dorothy, bred by Mr. James Murray, of Polmaise Castle, Stirling. She was got by Up-to-Time, out of Lady Baron, by Baron's Pride, and her grandam was the noted Kate of Newfield. It will be seen that she has a double dash of the famous Baron's Pride blood, and there can be little doubt but that she will prove a first-rate breeder. Her two companions, Lady Flora, bred by Mr. Walter Reid, Craigharnhall, Bridge of Allan, and Miss Brims, bred by Mr. Wm. Brims, Thuster, Thurso, are both three-year-olds. The former was got by The Dean, a noted son of the Cawdor-cup winner, Royal Gartly; while the latter was by the Royal and Highland Society winner, Prince Shapely. Mr. Colquhoun has made several first-rate shipments in the past, and his present one is quite in keeping with the high average of his former purchases.

TRADE TOPIC.

The land department of the Kootenay, British Columbia, Orchard Association, at Nelson, B. C., advertise, in this paper, land for sale in the Kootenay fruit district, at moderate prices, and on easy terms. Maps and all necessary information as to the district will be sent free on application to the address given in the advertisement.

Pay \$20 Less For (The Pembroke Range) A Better Range

From a
dealer
'twould
cost you
\$65.

Direct from maker
to your kitchen,
this handsome,
modern range
costs you only \$45



Pembroke ALL-STEEL Range

We deal direct with you, GUARANTEE if this Steel Range is not exactly as represented your money will be refunded. Every detail of the Pembroke All-Steel Range will satisfy you, and give you a better range for \$20 less money than is sold in your Province. Built of heavy steel, to last a lifetime. Beautifully finished in burnished steel and bright nickel—a range you will be really proud of.

Takes 28-inch Wood (Burns Coal or Wood)

Extra-wide firebox, takes full 28-inch wood—other ranges take only 18-inch. This saves. New draft-control gets more heat out of less fuel—holds a fire all night—quick or slow oven at will—perfect baker.

Big COPPER Reservoir

Other ranges have only zinc reservoirs—quick to rust out. Pembroke Range has heavy reinforced copper reservoir—leak-proof—good for years and years.

Big Oven—Self-Ventilating

Ideal baking oven—very roomy, with self-ventilating device that insures perfect results and better baking, without oven odors or steam.

Heavily-Built—Staunch—Solid

This Pembroke Range is so solidly built it weighs over 100 lbs. more than ordinary ranges that cost \$20 more money. Hotel model—base touches floor all round, so no bother or muss cleaning under it. Big ashpan—easy to keep clean—has every up-to-date idea. You can't go wrong choosing this range—we GUARANTEE that. Write for book illustrating details. Address The

Pembroke Furniture Co.

Department 30
PEMBROKE, Canada

(We also sell you direct a cookstove for \$25 you can't duplicate for \$36. Ask for details.)

Satisfied Students.

The best proof of the value of our instruction is in the satisfied students we have in all parts of the Dominion, and the best proof of their satisfaction is shown by the fact that every month several of our former students enroll for new courses. Let us send you the particulars, then decide as to whether one of our courses would not help you.

Courses in Bookkeeping, Short hand, Compl. to Commercial, Teacher's Certificates, M-triculation, Mechanical Drawing, Steam Engineering, Bigler's Course, or any single subject. Address as below to 807 DEPT. E, TORO-TO, CANADA

CANADIAN CORRESPONDENCE COLLEGE LIMITED

CARRIAGES

Write for catalogue and prices.

R. D. MILNER,

P.O. Box 26.

Chatham, Ont.

GOSSIP.

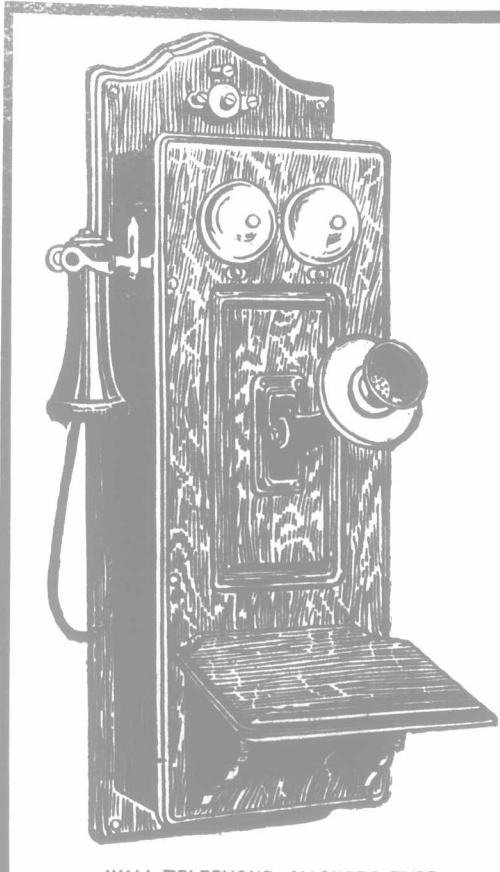
"Now, Tommy," said Mrs. Bull, "I want you to be good while I'm out." "I'll be good for a nickel," replied Tommy. "Tommy," she said, "I want you to remember that you cannot be a son of mine unless you are good for nothing."

A certain young man from Glasgow went to Canada last year and hired himself to a farmer. On the first morning the farmer said to him, "Now, William, you might go down to your corn field, and see if there are any crows in it." When William returned the farmer said to him: "Well, William, were there any crows in the field?" "Oh, yes, many a score." "Well, did you frighten them away?" "Oh, no; I only shut the gate. I thought they were all yours."

"Yes," said the old man, addressing his visitor, "I am proud of my girls, and should like to see them all comfortably married; and as I've made a little money, they won't go to their husbands penniless. There's Margaret, twenty-five years old, and a real good girl. I shall give her five thousand dollars when she's married. Then comes Bet, who won't see thirty-five again, and she'll have ten thousand dollars; and the man who takes Dora, who is forty, will have fifteen thousand dollars with her." The young man reflected a moment or so, and then nervously inquired, "You haven't one about fifty, have you?"

SMITH & RICHARDSON'S CLYDESDALES.

Since commencing business as importers of Clydesdale horses five years ago, the firm of Smith & Richardson, Columbus, Ont., have brought over as many winners of the red, white and blue ribbons at the Toronto National and Winter Shows, and at Ottawa, as any man or firm in the business in Canada, having won against all comers no less than seven championships, 20 firsts and 24 seconds, besides a large number of lesser note, and although their sales have extended from one end of the country to the other, we have yet to hear the first man say he did not get justice at their hands, or was in any way deceived. At the present time in what is probably the best equipped stallion stables in Canada are about 21 stallions, 14 of which are imported, the balance Canadian-bred. Among the latter are such grand good ones as Lavender's Best [6320], winner of first and championship at Ottawa last fall, and first at the late Winter Show; Lord Roberts [3867], winner of first in aged class at Toronto last fall; Gladden's Pride [7922], winner of fourth in the two-year-old class at the late Winter Show; Highland James [6709], winner of second prize in the two-year-old class at the same Show, the whole making an aggregation of Canadian-bred Clydesdale stallions of a type and quality that are living proof that right here in Canada we breed horses as large and of as choice quality as anywhere in the world. Among the imported lot are such high-class quality horses as President Roosevelt (imp.) [7759], a bay five-year-old, by the champion Marcellus, winner of second prize at the late Winter Show in a class of 12; Buchlyvie Laird (imp.) [6102], a roan three-year-old, by Baron o' Buchlyvie, winner of second at the late Winter Show; Knight of Mayfield (imp.) [7760], a brown three-year-old, by the great Prince Thomas, winner of fifth at the late Winter Show; Black Ivory (imp.) [7761], a black two-year-old, by the noted Everlasting, winner of third at the late Winter Show; Baron Columbus (imp.) [6106], a bay roan two-year-old, by Baron o' Buchlyvie, winner of seventh at the same Show; Rab the Ranter (imp.) [7758], a brown yearling, by Everlasting, winner of sixth at the same Show. Seldom, indeed, have so many high-class and fashionably-bred horses been seen together as this firm has now on hand. The selection is a large one, and the quality high, and intending purchasers are sure to find something to please at a price as reasonable as anywhere in the country for the quality, and on terms to suit, with satisfaction guaranteed. They have also on hand several high-class mares and fillies, imported and Canadian-bred. They have long-distance 'phone.



WALL TELEPHONE, MAGNETO TYPE

Join With Your Neighbors Put In A Telephone System

Own your own telephones, control your telephone system, and have good telephone service at a price that all can afford to pay.

CANADIAN INDEPENDENT TELEPHONES

make you independent of the monopoly, and enable you to enjoy all the advantages of the telephone at a fair price.

All of our telephones are fully guaranteed for ten years. All of our telephones give full satisfaction. You will never have any trouble talking over independent telephones.

Talk it over with your neighbors.

Write for particulars,

We furnish full information free.

Canadian Independent Telephone Co. LIMITED

26 Duncan Street, Toronto, Ont.

EWING'S



"SOME SEED FACTS" RELIABLE SEEDS.—The first sure step towards a satisfactory harvest in 1908 Whether you sow for profit or for pleasure, confidence in the seeds you sow is certainly the principal care.

EWING'S RELIABLE SEEDS

Quality is our first aim! You can depend on getting the best seeds that grow. Trying to save on the first cost of seed is false economy, it being relatively a trifling expense in comparison with the resulting product's entire difference in value. Our stocks, the result of many years' careful selection, are famous for exactness of type, vitality and unsurpassed quality. Our rapidly-increasing list of satisfied customers proves convincingly that "The Proof is in the Harvest." Write for our "OS Illustrated Seed Catalogue," "Everything for Farm, Garden and Lawn." Mail orders receive immediate attention. Ewing's Famous "High-grade" Clovers and Timothy.

William Ewing & Co., Seedsmen, 142-146 McGill St., Montreal.



POSTPONED SALE

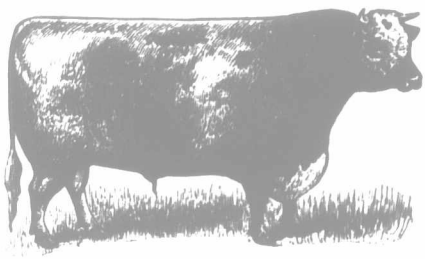
40 Scotch and Scotch-topped Shorthorns By Auction 40

AT PROSPECT HOUSE STOCK FARM

The property of Mr. F. A. Gardiner, 3 1/2 miles east of Streetsville Jct. Stn., 6 miles south of Brampton, and 7 miles north of Port Credit, on

Wednesday, April 8th, 1908.

Mr. F. A. Gardiner will sell his entire herd of 20 head, including his two high-class stock bulls, to which will be added 20 head from the noted herd of Messrs. S. J. Pierson, Son & Co.



In all there will be sold 14 bulls—some extra high-class ones among them—and 26 females, imp. and Canadian-bred; a number of local prizewinners among them.

TERMS: Cash, or 7 months' on bankable paper, with 5% interest. Lunch at noon. Conveyances will meet morning trains at Streetsville Jct. and Port Credit, and will be at Queen's Hotel, Brampton, at 10 a.m. Catalogues on application to:

F. A. Gardiner and S. J. Pierson, Son & Co. Britannia P. O. Meadowvale P. O.

Auctioneers: John Smith, M. P. P.; Capt. T. E. Robson.

PLEASE MENTION THIS PAPER.

Your Boy Can

Run

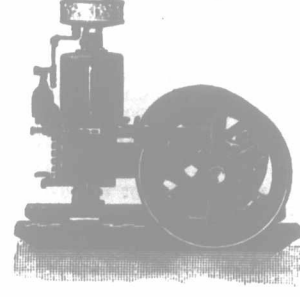
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Simple.



Nothing complicated about the

STICKNEY GASOLINE ENGINE (FACT!!)

Again, it is absolutely safe to operate. Another thing, we GUARANTEE POWER sized in our printed matter. Compare our size of cylinders with all other makes.

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More profitable than poultry. Experience unnecessary. We give advice free. Our new egg book, "Money in Canaries," tells all about it. With book we send free, if you name this paper, a 10c packet BIRD BREAD. Also, "How to Kill Birds of Lice," and "Bird Magazine." Send 25c to-day; stamps or coin. Refunded if you buy birds from us. Birds shipped anywhere any time. Write us before buying. Address:

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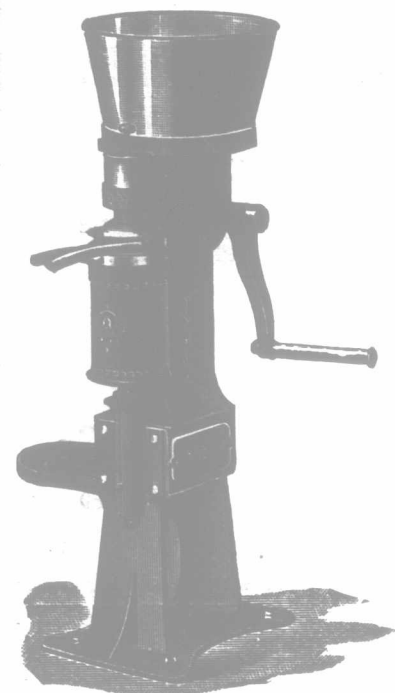
28 Bathurst St., London, Ont.

THE MAGNET CREAM SEPARATOR

HAS A DOUBLE BEARING TO THE BOWL.

This double support to the bowl enabled John Douglas, Creekfield, Saskatoon, to skim his milk with the MAGNET sitting on the open prairie all last season.

The double support to the bowl prevents wobbling, and therefore produces smooth cream.



The double support to the bowl of the MAGNET renders it impossible for the bowl to get out of balance.

The double support to the bowl of the MAGNET prevents wear. It will surely last a lifetime.

The double support to the bowl of the MAGNET makes it the easiest separator to turn.

The double support allows the MAGNET brake to make a complete turn round the bowl, and stops the machine in 8 seconds without the slightest injury. Patent No. 108897.

The double support on the MAGNET enables us, for a few dollars, to increase the capacity from the smallest to the largest size. You buy a MAGNET, and when you increase your herd of cows you can get a larger skimming device for your present machine.

The double support on the MAGNET is protected by patent.

The one-piece skimmer in the MAGNET takes all the cream out of the milk and separates the impurities from both.

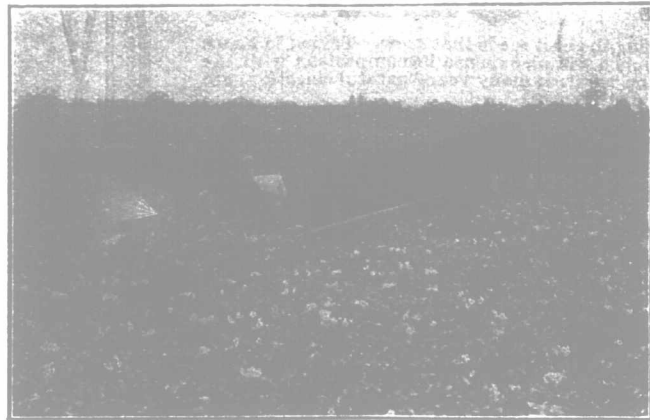
The one-piece skimmer in the MAGNET is easy to clean, three minutes only required after each operation.

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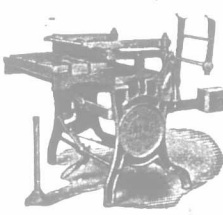


This shows the result of using a Horse-power Spramotor on potatoes in Forestville, Conn., and the testimonial of the user will speak for itself.

Aug. 6th, 1907.
Dear Sirs,—Your machine has given good satisfaction running at high pressure, and so simple any man who can run a harrow can run it.
JOS. A. FAGAN.

Agents wanted.
Free particulars apply:
SPRAMOTOR, LTD.
1060 King St., London.

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London Cement Brick Machine

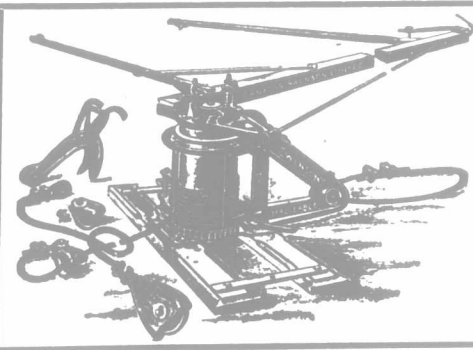
During spare hours in the winter months. It will pay you to investigate. We make Cement Brick Machines, FACE-DOWN Block Machines, Cement Tile Machines, Concrete Mixers in all sizes, Sewer Pipe Moulds, Fence Post Moulds, and a full line of Concrete Machinery. All goods sold direct at wholesale price. Purchase direct and save agents' commissions. Send for catalogue, stating your requirements. Address:

THE LONDON CONCRETE MACHINERY CO.

28-Redan St., London, Ont.
The largest exclusive Concrete Machinery Co. in Canada.



London Face-down Cement Block Mach.



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We are the largest manufacturers of Stump Pullers in Canada. It does not matter whether you have light or heavy work, we have machines adapted for your purpose. Every machine is sold on a guarantee. Write for catalogue F.

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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 must be enclosed.

Veterinary.

LEG SWELLS.

One hind leg of my two-year-old Clydesdale colt swells, and is always wet.

L. W. T.

Ans.—Beefy-legged Clydesdales are predisposed to such troubles as this, and, as yours has shown the trouble so early, it is probable you will always have trouble with him. Give him a purgative of 8 drams aloes and 2 drams ginger. Dress the leg daily with a solution of corrosive sublimate, 20 grains to a pint of water. This will act better if applied warm, and the hair must be parted and the lotion rubbed well into the skin.

V.

FATALITY IN DOG.

Dog began to tremble and vomit up green and yellow stuff, and would not eat. In about a week he died. A post-mortem revealed a yellow color of the lining of the stomach and bowels, and the heart was covered by a striffin or skin. What was the matter with him?

W. B.

Ans.—Your dog had what is called gastritis (inflammation of the stomach). The heart was normal. The inflammation extended and involved the mucous membrane of the stomach. The trouble was caused by some irritating food that he had eaten.

V.

Miscellaneous.

APOPLEXY IN PIGS.

Sow farrowed January 2nd. When pigs were between six and seven weeks old I weaned them. They would eat readily at that time. Broke the black teeth off before weaning. Feed them some pulped sugar beets mixed with bran and low-grade flour (not very much flour), with a handful of oil cake. This I would scald, and then pour on enough skim milk to make a slop. Every morning, to this I would add a small handful of sulphur, and at night a piece of sulphate of iron, about the size of a robin's egg, dissolved in water; and nearly every meal I gave them a handful of charcoal. About two weeks ago I discontinued scalding the feed, and added enough milk to make it a slop. They seem to be doing extra well; hair white, and skin clean. A few days ago I noticed one of the best staggering backwards; it fell over, and stretched out, breathing heavily and short. In a little while he would come around, but his sides would move like a horse that had the heaves. I saw him take several of such turns since, as well as some of the others. He is gaunt all the time, and when he comes to the trough, as well as some of the others, they just take a mouthful or so and then leave the trough, as though the feed was distasteful to them, but will eventually clean up their meal. When I noticed the trouble, I discontinued feeding sulphur and iron, and fed less bran and flour. This morning I found one dead (not the first one that had the trouble). It was bloated. I examined the stomach and bowels and could see nothing wrong. They never were purged nor costive.

A. W. H.

Ans.—There would seem to be nothing wrong with the feeding of these pigs, except that they have had too much of a good thing, and were too thrifty for pigs confined and having insufficient exercise. This is a form of apoplexy, due to a rush of blood to the head. We have noticed the same trouble, but always in winter when the pigs were confined, and never in summer, when they were free to run out on the ground for exercise. Treatment other than preventive measures is of no effect, and pigs that have shown the symptoms might better be slaughtered, as their flesh is perfectly wholesome. For those not affected, lessen the quantity of feed, continue the confinements, and see that the pigs get a moderate amount of exercise in a sunny place on mild days.



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is concentrated health and strength. Taken at any time it enables you to pick up health and strength more quickly than any other food.

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IT WILL PAY YOU TO SEND TODAY FOR OUR BARN BOOKLET

"SHOULD LAST FIFTY YEARS" says Mr. R. Nagle, of Mount Brydges, Ont. about our Corrugated Sheet Roofing. He adds: "I think it is as near perfection as anything I ever saw."

Our "Acorn Quality" Corrugated Sheet Roofing and Siding makes an absolutely lightning-proof barn construction, besides being quickly put on. Our Galvanized Sheets show no signs of wear, even on our earliest work years ago. Such Roofing prevents all moisture or dampness.

THE METAL SHINGLE & SIDING CO., Limited
Preston, Ont.
ROOFERS to the FARMERS OF CANADA

For Sale Imported Clyde Stallion, THE NOBLEMAN (12770). Bright bay; four white feet; white stripe in face. Foaled 1903. Sire Hiawatha (10067). This horse has four recorded dams, and is a sure foal-getter. Will be sold worth the money. Apply: H. G. BOAG, 'Barrie,' Ont. Long-distance phone.



When a hen is contented she sings. When she is ready to lay. When she lays regularly she pays a profit. And she is contented, sings and lays her daily egg almost as regularly as the day comes round when she receives a little of

DR. HESS Poultry PAN-A-GE-A

every morning. Poultry Pan-a-ge-a is the prescription of Dr. Hess (M.D., D.V.S.). It does not take the place of the regular ration, but contains the tonic elements which make the ration available. It aids digestion, makes rich red blood and contains nitrates to cleanse the system. Poultry Pan-a-ge-a is also a germicide and largely prevents disease. Endorsed by the poultry authorities of the country and

Sold on a written guarantee. A penny's worth a day is sufficient for thirty hens.
1-2 lbs. 35c.; 5 lbs. 85c.;
12 lbs. \$1.75; 25 lb. \$3.50.
Send two cents for Dr. Hess forty-eight page Poultry Book, free.
DR. HESS & CLARK, Ashland, Ohio,
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Instant Louse Killer Kills Lice.

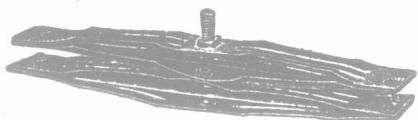
YOU WANT

a hatcher that does not require watching; a hatcher in which the heat is perfectly, automatically regulated.



THE MODEL contains the most perfect heat controller in the world—strong, yet active, sensitive, yet positive—perfect in action. The Patent Office has decided in my favor in the interference suit on this perfect-acting regulator.

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This Thermostat has three corrugations in each leaf, is exceedingly strong and frigid; is not easily damaged, and is so positive in action that the entire movement given off by the different co-efficient of expansion between the two metals of which it is made is transmitted to the controlling device without any loss of movement.

The Model Incubator gives a perfect heat control, which stimulates and holds the germ development uniformly constant and normal, as under a hen. This wonderful hatcher has almost a perfect balance in ventilation and humidity, and supplies all the vitalizing principles found under the incubating hen. The Model Incubators and Brooders are used on the biggest money-making commercial poultry plants in the world. The Model Double Indoor Brooder is just what you want for winter work. Broiler men pronounce it the most successful rearer yet produced. At the Model Farm, where we raised over 80,000 birds the past season, the Model Double Indoor Brooder did the best winter work. Buy your incubators and brooders of the man who knows how to hatch and raise poultry, who is doing it successfully on a commercial basis, and who can help you to be successful. Your success is my success. Write for my printed matter.

Indorsed and used by more Dominion Government Colleges and Stations than the whole of our competitors combined. We make this statement in no boasting spirit, but simply stating facts—a word to the wise is sufficient. The Ontario College, Guelph; The Dominion College, Ottawa; Agricultural College, Truro, N. S.; Macdonald Institute, Ste. Anne de Belleville, Que.; Government Experimental Stations, Bowmanville, Ont.; Bondville, Que.; Andover, N. B.; Chicoutimi, Que.; Union River Bridge, P. E. I.; Experimental Station, Edmonton, Alta.

CHAS. A. CYPHERS,

President Model Incubator Company, Limited.

C. J. DANIEL, Mgr.

River St., Toronto, Ont., Canada.

The MCCORMICK BINDER

THE HARVESTING MACHINE THAT IS O.K. ALL OVER THE WORLD. FAST WORK GOOD WORK AND NO TROUBLE.

YOU, of course, want to buy a harvesting machine that will save your crop without delay and without expense for repairs. That's one reason why you should own a McCormick binder.

The McCormick is the machine that has stood the test of time. Many thousands of prosperous farmers believe there is no other binder in its class.

Its main frame and main and grain wheels are strong and substantial, thus insuring a rigid foundation to carry all the operating parts. Therefore the gears are held in proper mesh, and there is no unnecessary wear.

The platform can be easily raised or lowered to cut a high or low stubble. The reel which is easily thrown into many positions enables the operator to handle long, short and down grain without loss.

It is equipped with a practical bundle carrier, a knoter so simple it cannot get out of order—there is no failure to tie and no choking of the binder attachment in heavy grain.

The binder balances nicely so that it relieves the horses' shoulders of all weight, and the machine is light draught.

McCormick binders are made in both right-hand and left-hand cut. A wide cut binder is built for farmers who raise grain on a large scale.

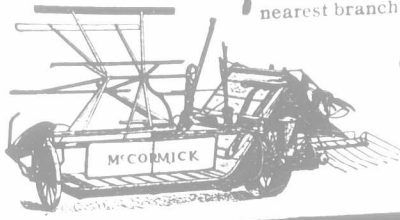
Besides grain and corn harvesting machines, the McCormick line includes binder twine, mowers, tedders, sweep rakes, side delivery rakes, hay loaders, stackers. Also a complete line of tillage implements and seeding machines, comprising disk drills, shoe drills, hoe drills, cultivators and seeders, smoothing, spring tooth and disk harrows, land rollers and scufflers. Also gasoline engines, cream separators, hay presses, wagons, sleighs and manure spreaders.

Call on the local McCormick agent for information or write nearest branch house for catalog.

CANADIAN BRANCHES:

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Stationary and Portable GASOLINE ENGINES

Saw Outfits, Mandrels and Machinery to Order.

Our 8 and 10 h. p. engines are the simplest and most economical on the market. Write, or call and see us before buying.

SCOTT MACHINE COMPANY, LIMITED, Engineers and Machinists.

290 and 292 York St.,

London, Ont.

QUESTIONS AND ANSWERS. Miscellaneous.

TARRING SEED CORN—RAPE.

1. What kind of tar can be used for tarring seed corn to protect it against crows?

2. What is the best way to go at it?

3. Can rape be sown very early in spring and give a good crop, ready to be plowed under before July 15th? I want to plant about one acre of clay loam land in cabbage, and I would like to plow under a good crop of some kind before I plant them.

4. Which is the best variety of rape to grow in this country? L. L.

Ans.—1. Coal tar.

2. One correspondent last year reported that he had completely protected his corn from injury in 1906 by heating a pint of coal tar, almost to boiling point, at which temperature, it was very fluid, then, dumping the corn in some large tubs, one end of a stick was dipped in the hot tar and used to stir the corn for a few minutes, giving it just enough tar to darken the color a little, but yet leave a strong odor. After being exposed to the sun for a few hours, the corn was completely dry, and could be run through the seeder as well as before receiving the preparation. Not a blade of corn was destroyed by the crows. Commenting on this, another subscriber described what he considered an improvement on this plan. Instead of heating the tar, he put the corn in a basket, or other porous vessel, and poured sufficient hot water on the corn to heat it, then put on tar and stirred. Instead of having to tar the corn ahead in order to allow it to dry, he stirred in a little land plaster, after it was tarred, which made it even freer to work than if given time to dry without the plaster. A few finely-sifted ashes may be used instead of the plaster. He adds a caution not to use pine tar, as the crows will fatten on it.

3. It would be rather early, we should think, to expect a good crop of rape. Sow peas, which will ripen earlier, be less liable to render the soil acid, and, in addition to serving all the good purposes of rape, will add a considerable amount of atmospheric nitrogen to the soil. The extra cost of the seed will be much more than repaid.

4. Dwarf Essex.

PREPARING LAWN—TRANS-PLANTING EVERGREENS.

1. I have an uneven piece of ground which I would like to make into a nice lawn. There are numerous ant hills on it in the dry weather. Would it be better to draw enough good earth to cover all the grass up, and level everything up, or plow it up and try to level that way, and seed down?

2. I would, also, like to plant a cedar hedge along both sides of lane in the spring. Would the swamp cedar do to put on the high land, and would there be much chance of their living? Would they require a fence on each side of them for protection? FARMER'S SON.

Ans.—1. If an old sod, would suggest plowing up and putting in, say, potatoes, and cleaning the land, then plow and level, working in plenty of manure. To have a nice lawn, one must have the ground clean and free from all coarse grasses. Seed with lawn-grass seed, at the rate of 1 lb. per square rod. If the soil is sandy or sandy loam, sow Red-top, with some white clover. If clay, or clay loam, sow Kentucky Blue grass and some white clover. See that the seed is fine and clean, and not half chaff, as is often sold by irresponsible dealers. If these directions are followed, you will have a nice lawn that will give pleasure to look at.

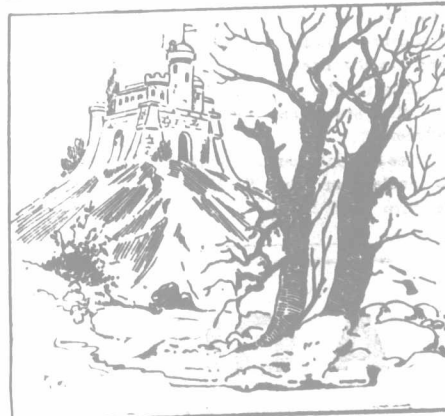
2. Cedars from the swamp are all right, but get them from the edge or high part. Don't take them too large: 2 1/2 to 3 feet high are best. Set them about 15 inches apart. If soil is not good, dig out a trench, say, a foot to 15 inches deep, and fill in good soil. No manure. Plant, and mulch well with straw manure (horse manure) for two years or more, if you like. When moving from swamp to your hedge, now, choose a damp, rainy day. Be very particular that the roots are not exposed to sun or wind, not even for five minutes. Failure in transplanting evergreens is often due to allowing the roots to be exposed to the sun. A fence is desirable to protect them from stock and wind.

JOHN S. PEACOCK, London, Park Supt.

FREE!

Valuable Premiums Given Away Free!

Herewith will be found the picture of a Castle on a hill and some old trees. At first glance, no one would notice anything else, but by close observation and perseverance two full figures and five faces can be found. The figures are those of a King and a Queen and the five faces those of the Princes and Princesses. Can you find them? It is not easy, but by patience and perseverance, you can probably find them all. If you find them all, you are entitled to your choice of any one of the premiums mentioned below, provided you comply with a simple condition about which we will write you as soon as we have received your solution to the puzzle.



It is not necessary to write us a letter. Simply mark X with a pencil on each one of the full figures and five faces, then write your name and address on the blank below very plainly, cut out the advertisement and return it to us. We will write you at once telling you about the condition that must be adhered to. The condition mentioned above does not involve the spending of one cent of your money. This is an excellent opportunity to obtain a handsome and useful present. Do not delay, write to-day. It is possible you may not see this advertisement again. Only one present is given in each locality. So if you wish to have one, be the first to apply and state which present you would like to receive.

LIST OF PREMIUMS.

- Ladies' or Gents' Gold Finished Watches
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- China Tea Sets.
- Rogers Silverware Dinner Sets.
- (Six silver plated knives and six forks)
- Rogers Silverware Dessert Sets.
- (Six Dessert Spoons, Six Tea Spoons, Sugar Shell, Butterknife, etc.)
- Gold Finished Parlor Clocks.
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Name _____
Address _____
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Do not fail to write your name and address very plainly.

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Blair's Pills

Great English Remedy for Gout & Rheumatism

Safe, Sure, Effective. All Druggists, 40c and \$1.00. LYMAN, BONS & CO. MONTREAL.



GOES LIKE SIXTY BELLS FOR \$65

GILSON GASOLINE ENGINE

For Pumps, Blowers, Separators, Churns, Washers, etc. **FREE TRIAL.** Ask for catalog—all sizes.

GILSON MFG. CO., 150 York St., Guelph, Ont.

THREE Trying Times in A WOMAN'S LIFE WHEN MILBURN'S HEART AND NERVE PILLS

are almost an absolute necessity towards her future health.

The first when she is just budding from girlhood into the full bloom of womanhood.

The second period that constitutes a special drain on the system is during pregnancy.

The third and the one most liable to leave heart and nerve troubles is during "change of life."

In all three periods Milburn's Heart and Nerve Pills will prove of wonderful value to tide over the time. Mrs. James King, Cornwall, Ont., writes: "I was troubled very much with heart trouble—the cause being to a great extent due to 'change of life.' I have been taking your Heart and Nerve Pills for some time, and mean to continue doing so, as I can truthfully say they are the best remedy I have ever used for building up the system. You are at liberty to use this statement for the benefit of other sufferers."

Price 50 cents per box or three boxes for \$1.25. All dealers or The T. Milburn Co., Limited, Toronto Ont.

A GIFT of \$1,000

would please your wife, wouldn't it? It would please you too, to be able to give it—but perhaps you can't.

But you can make an investment which will give your wife—in case of your death—a Reserve Dividend Policy, which is absolutely safe and as good as gold. It will guarantee her comfort at a time when she will most need it.

This is a new plan. It is one which every man in Canada should know about. Write to us and we will send you full information regarding it.

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For Spraying

Fruit Trees, Shrubs,
Bushes and Plants, there's
nothing to equal



Requires but one pumping to empty entire contents of tank. Automatic lever valve stops flow of liquid while going from one plant to another. Easy, light compact; tested to stand 5 times the pressure required to expel liquid. Two nozzles, with hose attachment for spraying small trees. Write for catalogue. THE EUREKA PLANTER CO. Limited, Woodstock, Ont.

P. E. Island Notes.

This has been one of the mildest winters ever experienced here. The weather is very changeable, frequent thaws, and wheels going nearly as much as sleighs.

Just now, March 11th, we are having a cold snap, with snow enough for sleighing.

It has been a poor winter for the farmers to get their work done. Very little mussel mud has been secured, as the ice on the rivers and bays has been too weak to work on.

During the last part of February and the first week in March, there has been 100,000 bushels of seed oats bought up here at a price of 50c. a bushel, and shipped out to the Northwest.

The Dominion Government are the shippers. It is giving a lot of work to the winter steamers to carry it over to the mainland, and, fortunately, the mild weather has enabled them to make regular trips. There is lots of good seed oats here yet; but shipping such a large lot will likely keep up the price to at least 50c. all through the season.

The Provincial Seed Show will be held in Summerside, on the 18th and 19th of March, and an Institute convention will be held in connection.

Prof. Cumming will be present, and speak on "Agricultural Education."

A good programme is prepared, and it is expected to be a very profitable meeting.

There is no scarcity of stock feed here. Hay is only worth \$13 a ton.

Though our hay crop was light, yet the big crop of straw helped it out, and hay now is worth \$2 less than it was last fall.

Beef cattle are scarce, and all the good ones are being secured by the butchers at about five cents per hundred for May delivery.

There is a good enquiry for heavy horses for the spring trade.

Pork has dropped some, and the best bacon hogs are selling for 7c. (dressed).

The automobile question is to the front here just now, and the Legislature is being asked to pass legislation to protect the farmers on the country roads.

A tax of \$200 has been proposed to keep the nuisance down.

There are only four or five machines on the Island yet, and it is thought if the Government would put on a heavy tax now, it would prevent any others from getting them.

We have one of the best country markets in Canada here in Charlottetown, where all the products of the farm and garden are sold on two days of each week.

The country women for miles round drive in with their fruit, eggs, butter, poultry and vegetables, leaving the men to work on the farm; but since the advent of the automobile there has been some serious accidents from horses taking fright, and the women are afraid to drive alone to market.

The farmers are indignant that a few automobiles, driven sometimes recklessly, should be allowed to interfere with their marketing, and are strongly demanding relief.

The old family horse does not take kindly to those bad-smelling machines, and refuses to make acquaintance with them.

Certainly the business of the farmers is of more importance than the pleasure of a few city people, and they do right to ask for protection on their country roads that they have to keep in repair.

W. S.

Bacon-type Yorkshire sows, bred to imported boar and due to farrow next month, are advertised for sale in this issue by G. B. Muma, Ayr, Ont.; also boar, three months old, and pigs 6 to 8 weeks old, all by imported sires and from imported and Canadian-bred dams.

The imported boar, S. H. Albert 2nd 21674, bred by Sir Gilbert Greenall, Warrington, England, heads the herd.

There is a clerk in the employ of a Philadelphia business man who, while a fair worker, is yet an individual of pronounced eccentricity.

One day a wire basket fell off the top of the clerk's desk and scratched his cheek. Not having any court plaster at hand, he slapped on three two-cent postage stamps and continued his work.

A few minutes later he had occasion to take some papers to his employer's private office. When he entered, the "old man," observing the postage stamps on his cheek, fixed him with an astonished stare.

"Look here, Jenkins!" he exclaimed, "You are carrying too much postage for second-class matter."



The Standard of QUALITY

in flour s

PURITY FLOUR

It makes

"MORE BREAD AND BETTER BREAD"

Why not buy it to-day? Ask your grocer about it.

WESTERN CANADA FLOUR MILLS CO., LIMITED

MILLS AT WINNIPEG, GODERICH AND BRANDON.



The EDISON PHONOGRAPH

THE one thing for which young folks leave home is amusement. If you give them the best form of amusement in their own homes, they will stay there. The best form of amusement is furnished by the Edison Phonograph. It sings the songs they like to hear, gives them the monologues and dialogues of clever comedians, plays the music they are fond of and renders waltzes that set their feet a-tripping.

Hear the new Phonograph with the big horn at the nearest Edison store, or write for catalogue.

WE DESIRE GOOD, LIVE DEALERS to sell Edison Phonographs in every town where we are not now well represented. Dealers should write at once to National Phonograph Co., 100 Lakeside Ave., Orange, N. J., U. S. A.



No. 10 Piano Box Buggy.
Price \$57.00.

Carriages and Harness at First Cost

Why not deal direct with the
Maker, and save two Profits P

By our system you can purchase a buggy, phaeton or other high-grade carriage or harness at one-third less than from your local dealer.

If not thoroughly satisfied you can return the goods and we will pay the freight both ways. Our complete illustrated catalogue, showing many styles of Vehicles and Harness, with description and price of each, mailed free. Write to-day.

International Carriage Co.,
BRIGHTON, ONTARIO.



Fruit and Ornamental Trees, Roses, Shrubs, Evergreens, Small Fruit Plants, etc.

Thousands of our Free, Priced catalogues are looking for your orders. Have we booked yours yet? We are more than busy. Better hurry up while we are in good assortment. We never were in better position to supply you with apple pear, plum and cherry trees. We ship direct from the nurseries. Fresh dug and O. K. Choice seed potatoes, etc.

Baby Rambler.
Ever blooming Crimson Dwarf. Think of roses every day from June until frost out of doors.

The Central Nurseries. A G HULL & SON, St. Catharines, Ontario.

MENTION THIS PAPER.

QUESTIONS AND ANSWERS.
Miscellaneous.

GOITRE.

A sucker colt has two small lumps, about the size of a hen's egg, or larger, one on each side of the throat or glands. I would like to have them removed, if possible, as it gives it a throaty look; but they do not seem to hurt it in any way. They were there when foaled, and a neighbor told me they would disappear soon, but they have not. How would iodine do to blister it? R. M. B.

Ans.—This is goitre. Clip the hair off the parts, and apply iodine ointment in moderation once daily for a week, which will probably reduce the enlargement, but, if not, will do no harm. If the treatment blisters too severely, stop using it, and apply lard or oil, and, later, repeat the iodine ointment. It is not likely that the trouble will increase.

ALFALFA SEEDING AND INOCULATION—GETTING RID OF SPARROWS.

1. I have about two acres of sod that I wish to seed with alfalfa. About one-half acre is in the orchard. Can I plow this ground this spring and seed with alfalfa, or would you prefer plowing this fall, and work down, and seed the following spring?
2. How much seed would I require?
3. How much nitro-culture should I use for the amount of seed I would require?
4. What would be the best way of poisoning sparrows?

SUBSCRIBER.

Ans.—1. Don't sow alfalfa in an orchard; it will eventually injure the trees. Don't sow alfalfa on spring-plowed, nor yet on fall-plowed sod. The place to sow is after a well-manured, thoroughly-cultivated hoed crop.

2. Alfalfa seed should be sown at the rate of 20 to 25 pounds per acre. We favor the thicker seeding.

3. A twenty-five-cent bottle, obtained from the Ontario Agricultural College, will treat a bushel of seed (60 pounds).

4. We are not prepared to recommend any method of poisoning sparrows. Shooting and destruction of the nests are the approved means of riddance.

COWS OUT OF CONDITION—GIRDLED TREES—TREES FROM GOVERNMENT NURSERY.

1. What would be a good condition powder for two cows that do not eat their feed well; one is fresh and the other due to freshen in two weeks?

2. The trunks of apple and spruce trees, from eight to ten inches in diameter, were peeled by sheep last fall to a distance of two feet from the ground. What can I do to keep them from dying?

3. Will trees from the Government nursery at Guelph be supplied this spring upon application? G. T. O.

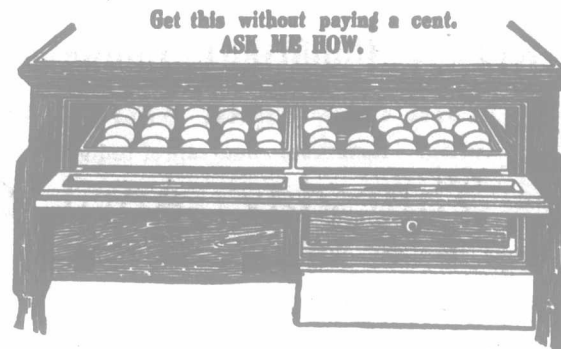
Ans.—1. It is probable there is something about their feed or environment that calls for correction. If so, the use of drugs will be of doubtful advantage. Feed a balanced ration, one containing a fair proportion of such feeds as alfalfa, clover, peas, bran and oil-cake meal, also some succulent food, such as roots; salt regularly; water, twice a day; exercise reasonably; twice a week give in the feed a small closed handful of sifted wood ashes per cow. The fresh-milch cow might be given a purgative of one pound Epsom salts, with two ounces ginger, in a quart of warm water as a drench. Follow with one dram each of sulphate of iron and gentian twice daily for a week in water as a drench, or mixed with a little bran and oil-cake meal. The dry cow had better not be purged till after calving. If more people knew the value of oil-cake meal as a laxative, a promoter of digestion and a nutritive, and would feed each animal about half a pound a day during the winter, there would be a great deal less call for tonics and "stock foods," and much thriftier stock.

2. If the trees are girdled completely for a space of two or three feet, we see no hope of saving them. It was a downright shame to allow it to be done. For methods of treating the less seriously-injured trees, watch the "Garden and Orchard" department of this paper.

3. Yes, we believe so. Apply to E. J. Zentz, O. A. C., Guelph, Ont.

Plenty of Time To Pay For It In A TEN YEAR GUARANTY

And I Will Find a Market For All You Want To Sell



Get this without paying a cent. ASK ME HOW.

MOST Incubator-men talk loud about steady Heat and little about Clean Air. I can afford to talk both, and more besides. Because:—

The Peerless is the incubator that hatches with clean air,—the incubator that has real ventilation.

Now the quality of air an incubator-chicken gets before it's hatched is far more important than the quantity of food it gets after it hatches.

And many a poultry-for-profit venture has gone to smash by the carbon-dioxide route—bad incubator air.

Carbon-dioxide is a deadly gas every egg gives off as it hatches.

Open the ordinary incubator's door and sniff,—that sulfurous, musty, choking smell is carbon-dioxide; and it is poison to animal life.

There is no smell in a Peerless—the poison is continually flushed out of the Peerless hatching chamber by the Peerless natural, unfailling ventilation.

Remember that for almost 500 hours the chick breathes what air seeps through the porous shell. If that air is poison loaded, as it is in badly-ventilated ordinary incubators; that chick is stunted, its vitality impaired, its vigor weakened.

It never can thrive as Peerless-hatched chicks, that breathe pure, clean air, do thrive.

Remember, too, that this is only one of fifteen plain reasons why the Peerless incubator not only hatches every chick that can be hatched, but gives those chicks the right start.

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I will even find you a cash buyer for all the poultry you raise—and all the eggs.

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Sending for the book doesn't commit you to buying the incubator. All I ask you to do is read the book. I won't importune you nor bother you.

Just send for the book and read it—that's all.

If you do that right now, I will tell you, also, how you can make the Peerless earn its whole cost long before you pay one cent for it.

Whether you have ever thought about raising poultry or not,—whether you know all about incubators or you don't, I will show

you why it will pay you,—pay you, personally,—to know what the Peerless is and what it could do for you if you wanted it to.

Simply your name and address fetches what will tell you that,—and no obligation on your part. The obligation will be mine to you, if you'll just write now.

In this Free Book I show you how to start in the poultry business without spending a cent for the important part of your outfit.

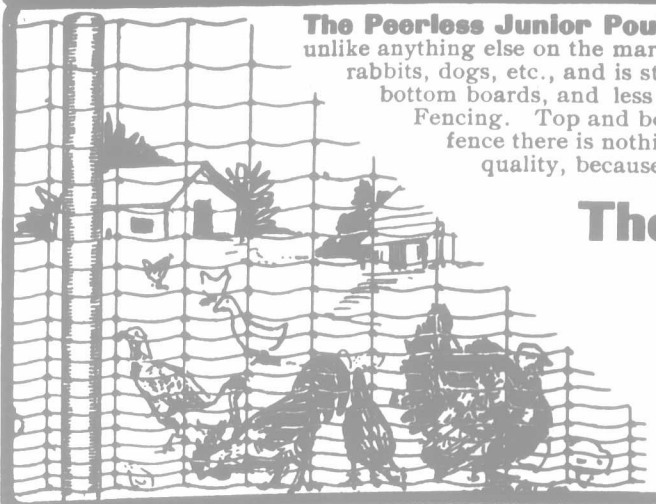
I will make you a partnership proposition that puts the risk mostly on me and leaves the profit wholly for you.

I will tell you how to get the incubators and brooders you need without paying for them till they have paid for themselves twice over.

I will show you why that beats all the free trial offers you ever heard, and why my way is the only sensible way for you to start raising poultry for profit. 12

It Hatches More Chicks
THE 1908
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INCUBATOR

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The Peerless Junior Poultry and Garden Fence is in a class by itself, being unlike anything else on the market. It is woven close enough to turn small chickens, rabbits, dogs, etc., and is strong enough to turn large animals. It requires no top or bottom boards, and less than half the posts required by the ordinary Poultry Fencing. Top and bottom wires are No. 9 hard steel. As a general-purpose fence there is nothing obtainable that will fill the bill so well, and its lasting quality, because of its extra strength, makes it

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DON'T WAIT TILL SPRING

Sure Death to San Jose Scale

Add 16 gallons water to 1 Scalecide and it's ready to use. Absolutely permanent percentage maintained, saves time enough to pay for the material. Guaranteed. It's cheap, effective, easy to use, non-corrosive, non-clogging, and contains more oil and less water than any other commercial spray. In 1-5-10 gallon cans, 25 and 50 gallon barrels. Free booklet. B. G. PRATT CO., Mfrs. New York, SPRAMOTOR CO., Sole Can. Agents, 1075 KING ST., London, Can.



Highly Important Bona-fide Auction Sale!

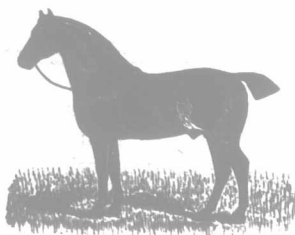
THE OAK PARK STOCK FARM CO., LTD.,

will hold their first annual sale of pedigree stock at Oak Park Farm, on

Thursday, April 2nd, 1908,

when they will submit to public competition the following lots of high-class Horses, Sheep, Pigs, etc.

15 Registered Hackney Stallions, Mares and Fillies.



The stallions will include the grand champion stud horse, Crayke Mikado No. 9176, foaled in 1904; sire Garton Duke of Connaught, by Connaught 2nd; dam 13583 Halsham Topsy, by Lord Derby 2nd. Crayke Mikado is a beautiful dark bay; stands 15 3, with faultless symmetry and superb action. He has had a record showyard career, having won 6 first prizes and 2 champions at Toronto, New York and Chicago. The mares will include the beautiful imported trio: Warwick Dora, Warwick Graeful, and Warwick Sunflower.

Warwick Dora is a handsome dark chestnut of rare quality and grand all-round high-stepping action. She has an unbeaten record in the showyard as a harness mare, and is sure to have a host of admirers. Warwick Graceful and Warwick Sunflower are a perfect match; step beautifully together, with perfect manners, and are well worth the attention of the best buyers.

Shropshires.

A flock of 10 registered ram lambs, 15 registered ewe lambs. The ram lambs and ewe lambs are imported and home-bred, and are well worth the attention of the best buyers.



Berkshires.

5 imported and home-bred sows in pig to the imported boar, Danefield Donovan. 6 well-bred young boars fit for service, sired by Danefield Donovan. 8 young sows. A very nice lot.



400 bushels choice barley for seed; 200 bushels oats of the best quality; 50 bushels potatoes; 20 bushels medium early potatoes.

TERMS OF SALE.—All purchases under \$20 to be paid for in ready money; for sums of \$20 and above, 6 months' credit will be allowed on approved security, or 5 per cent. discount for cash.

Welby Almas, Auctioneer.
Jas. J. Brown, Farm Manager.

OAK PARK STOCK FARM CO., Limited, Proprietors.

Luncheon at 12. Sale to start at 1 o'clock, prompt.

Oak Park Farm is situated equidistant between Brantford and Paris. Cars pass the farm every hour.

Conveyances will meet the trains at Brantford and Paris to take parties to the sale.

TO STALLION OWNERS

\$1,000

To be given by the

Ontario Jockey Club, Toronto,

in seven premiums to Thoroughbred Stallions standing for half-bred mares. Owners of Thoroughbred stallions should communicate with

W. P. Fraser, Secretary Ontario Jockey Club, Toronto.

Entries close May 1st, 1908.

CLYDESDALES AND FRENCH COACHERS, IMP.

Scottish and Canadian winners, stallions, mares and fillies. The Clydes represent the blood of such noted sires as Baron's Pride, Up-to-Time, Royal Favorite, Ethiopia and Acme. They combine size, quality and action. The French Coachers are a big, flashy, high stepping lot, and are winners in both France and Canada. Our prices are right, and our horses as good as the best. Long-distance telephone.

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DON'T STOP to ask your neighbors. Lift the load yourself with THE BURR SELF-LOCKING TACKLE BLOCK.

Can be used in any position and lock securely. The heavier the load, the tighter it locks. Never destroys the rope in locking. For hitching, stretching wire fences, lifting wagon-boxes, sick or injured animals, etc., it is indispensable to farmers. Saves labor of two or three men, 500 to 5000 pounds capacity. Ask dealers or write **LEWIS BROS., Ltd., Montreal, Can**

QUESTIONS AND ANSWERS. Miscellaneous.

KOHL-RABI AND SOY BEANS.

1. Give expert knowledge of kohlrabi as a pasture and as a root crop, and whether it may be successfully grown in heavy clay soil in Southern Ontario, with directions for culture. May it be fed milking cows?

2. May soy beans be grown in the same locality, and what is their value, either as ensilage or dried like hay, with directions for culture? L. C. W.

Ans.—1. Kohlrabi is sometimes grown as food for stock in some of the older countries. The root is somewhat like that of a cabbage, while the leaves resemble those of Swede turnips. The valuable part of the plant grows about three inches above the level of the ground in the form of a bulb. It makes a very nice food for domestic use, and is prepared for culinary purposes in much the same way as Swede turnips. The seed resembles closely that of Swede and fall turnips, and the crop is grown in much the same manner as turnips. In the experimental department of the Ontario Agricultural College, two varieties, Early White Vienna and Earliest Erfurt, yielded, respectively, in the average of six years' trial, at the rate of 20.7 and 18.2 tons per acre. Co-operatively tested over the Province, in comparison with two varieties of fall turnips, kohlrabi gave rather unsatisfactory yields, and proved unpopular with the experimenters.

2. From experiments conducted for a series of years at the Ontario Agricultural College, Prof. Zavitz has found that the Early Yellow variety of soy beans gives good satisfaction as a grain-producer, and the Medium Green as a fodder crop. He believes that as the latter variety becomes better known, it will be grown for the purpose of cutting green and mixing with corn when filling the silo. We know of one farmer who grew it in rows with his corn, and ensiled it, we believe, with fair results, though the harvesting was somewhat of a nuisance. Prof. Zavitz believes that the Early Yellow variety could be grown successfully for grain production on many farms in Ontario. The grain is exceedingly rich, containing a larger percentage of protein than any of the ordinary farm crops grown in Ontario. A small quantity of soy beans, ground and mixed with other meal, will increase its value considerably. At the O. A. C., the average yield of grain of the Early Yellow in a period of 11 years' test, was 16 bushels per acre. The Medium Green require much longer to mature, and are not so suitable for grain production. In a rich, fine, firm, moist seed bed, sow with a grain drill in drills, 30 inches apart, from two to four pecks of seed per acre, and cultivate as for corn or potatoes. For production of hay we question whether the soy bean will have much of a place in Canada. If attempted, the seed would probably be better sown more thickly. Ground hogs are very fond of soy beans, as are domestic swine. As part of a mixture of a soiling crop for cattle and hogs, soy beans will probably be found to serve their best function, so far as Canada is concerned.

GOSSIP.

The 1908 prize-list of the International Horse Show, to be held at Olympia, London, England, June 18th to 27th, comprises 119 classes, and the cash prizes offered figure up to about \$50,000. This is the second annual exhibition of horses under the auspices of this organization, and is expected to eclipse the first, held in June last, which was a magnificent success, horses from a number of countries, in large numbers competing. The United States and Canada being represented by strong contingents. The judges, in part, for this year's show are chosen from the United States and Canada, and the prospect is bright for a phenomenal display of equines.

TRADE TOPIC.

The Burr self-locking tackle block, for lifting loads, should prove a great convenience to farmers as a labor-saving appliance in these times of scarcity of help. See "Don't Stop" advertisement of Lewis Bros., Montreal and write them for particulars, if your dealer has not the device in stock.

HORSE OWNERS! USE



GOMBAULT'S CAUSTIC BALSAM.

A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from horses. Impossible to produce scar or blemish. Send for circulars. Special advice free.

THE LAWRENCE-WILLIAMS CO., Toronto, Can.

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WEST'S

Disinfecting Fluid

CURES AND PREVENTS

CONTAGIOUS ABORTION.

Write for our special circular by veterinary. Our Offer: 5 Gallons, \$6 50; Freight Prepaid.

The West Chemical Co.,

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Free Veterinary Book

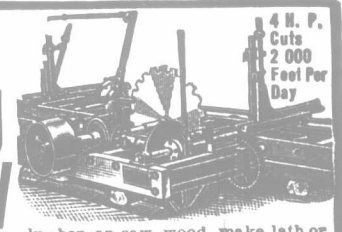
Be your own horse doctor. Book enables you to cure all the common ailments, curb, splint, spavin, lameness, etc. Prepared by the makers of

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The world's greatest horse remedy. \$100 reward for failure to cure above diseases where cure is possible. Write for the book. Postage 2c. TUTTLE'S ELIXIR CO., 66 Beverly St., Boston, Mass. Montreal: H. A. Tuttle, Mgr., 32 St. Gabriel St. Beware of all blisters; only temporary relief, if any.

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Lumber or saw wood, make lath or shingles, or work lumber in any form, you should know all about our improved

AMERICAN MILLS

All sizes Saw Mills, Planers, Edgers, Trimmers, Lath Mills, Shingle Mills etc. Complete line wood working machinery. Catalogue free.

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FOR RUPTURE! Brooks' Appliance. New discovery. Wonderful. No obnoxious springs or pads. Automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No knives. No lymphol. No ties. Durable, cheap. Pat. Sept. 10, '01. SENT ON TRIAL. CATALOGUE FREE.

C. E. BROOKS, 6870 Brooks' Bldg., MARSHALL, MICH.

Cement Silos!

I am the inventor and manufacturer of the only extension steel silo curbs in Canada. They will build any size—from a cistern to a silo—any dimensions required. Any information freely given by writing

A. E. Hodgert, EXETER, ONT.

Large English Yorkshires!

Bred straight from first-class imported stock. Sows bred to Imp. S. H. Albert 2nd 21679, due to farrow in April and early May. Also young sows ready to breed, and pig 6 to 8 weeks old. Prime ones for a year. Also a model boar pig 3 months old. All of the best bacon type and quality. Prices right. Suit times. Write, or call and see the stock. **G. B. Muma, Agr. Ont.**

Imported Clyde Stallions and Fillies For Sale, sired by Marcellus and Prince Alexander; one home-bred stallion rising two years, black, imported bred.

ALEX. MCGREGOR, Uxbridge, Ont.

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For Sale: 7 Imp. Clydesdale Stallions

Also One Percheron Stallion. I will sell the above at low-down prices, as they must be sold this spring. Please write me for prices.

O. SORBY, Guelph, Ont.

JOHN CHAMBERS & SONS

Holdenby, Northampton, England.



Shire horses shown or imported by us won at the Ontario Horse Breeders' Show, 1908:

- 1st, stallion foaled 1905.
- 2nd, stallion foaled previous to Jan. 1, 1905.
- 1st, 3rd and 4th, mare foaled subsequent to Jan. 1, 1905.
- 2nd and 4th, mare foaled previous to Jan. 1, 1905.

We have several extra good fillies coming three years old safe in foal, and some stallions with weight and quality. Guaranteed foal getters. All are priced right.

C.K. Geary, St. Thomas, Ont.

Largest Importation of Clydesdales, Hackneys and Percherons of the Year.

My latest importation has just arrived here. I have now on hand for sale: 30 Clydesdale stallions from 1 to 5 years of age; 25 Clydesdale fillies from 1 to 4 years of age; 19 Hackney stallions from 2 to 8 years of age; 19 Hackney fillies, all young; and 4 Percheron stallions 3 and 4 years of age. A total of 73 head, with size, quality and action, and bred in the purple. Largest selection in Canada. Will be sold right, and on terms to suit.

T. H. HASSARD, MILLBROOK, ONT.

CLYDESDALES

At Columbus, Ont., the home of the winners, this year's importation just arrived. The pick of Scotland's best. For size, style, conformation, quality and royal breeding, they eclipse any former importation we ever made. Look them up in our barn on Exhibition Grounds. Over 50 head to select from.

SMITH & RICHARDSON, COLUMBUS, ONTARIO

Shires, Shorthorns and Lincolns.

At present we are offering a very choice consignment of imported stallions, mares and fillies received from the great Shire stud of R. Moore & Sons, Beeston Fields, Nottingham, England. They are a grand lot, and will be sold at right prices.

In Shorthorns we have a number of choice young bulls, three of them show animals; also an excellent lot of females—all ages.

John Gardhouse & Sons, Highfield, Ont.

Toronto, 14 miles. Weston, 3 1/2 miles.

FOR SALE OR EXCHANGE: IMP. SHORTHORN HERD BULL, British Fied (50016)

Quiet, active and sure. Would take a Clyde, Shire or Percheron mare in exchange. Value for value.

JOHN M. BECKTON, Elm Park Stock Farm, Glencoe, Ont.

IMP. CLYDESDALE STALLIONS AND FILLIES.—Our new importation of stallions and fillies are the best we could select in Scotland, particularly well bred, with the size, smoothness and quality that Canadians admire. Show-rings stuff come and see them. Will sell on terms to suit. JOHN A. BOAG & SON, Queen'sville P. O., Ont., Newmarket Sta. G. T. R. Telegraph and telephone one-half mile from farm. Metropolitan Street Ry. from Toronto crosses the farm.

IMPORTED CLYDESDALES Up to over a ton in weight, with the very richest of breeding and the best of quality. I think no better shipment of stallions ever left Scotland. I have also nine fillies, without doubt the best lot in Canada. All will be sold cheap and on terms to suit. Long-distance phone. GEO. G. STEWART, HOWICK, QUE.

2 IMPORTED CLYDESDALE FILLIES

Sired by Prince Alexander and Macgregor's champion, recorded in Clydesdale Stud-book of Canada. Terms and prices reasonable.

Robt. McEwen, Byron, Ont. London Ry. Station.

Imp. Clydesdales (Stallions and Fillies), Hackneys, Welsh Ponies.

I have now on hand Clydesdale stallions and fillies—Scotland prizewinners and champions; Hackney fillies and Hackney pony; also Welsh ponies. There are no better animals, nor no better bred ones, than I can show. Will be sold cheap and on favorable terms. A. AITCHISON, GUELPH P. O. AND STATION.

SIMCOE LODGE CLYDESDALES

Our stable of imported and Canadian-bred Clydesdale stallions and fillies was never so strong in show stuff as now, although we have had some very strong lots. Call among these are prizewinners at Toronto, Chicago and New York. Prices reasonable. And see what we have before buying elsewhere. HODGKINSON & TISDALE, BEAVERTON, ONT., G. T. & C. N. R. Long-distance phone.

OAK PARK STOCK FARM HACKNEYS!

Four imported and home-bred stallions for sale. Ten imported and home-bred mares for sale. These are prizewinners at Toronto, Chicago and New York. Prices reasonable. Visitors always welcome to inspect stock. JAS. J. BROWN, Manager, BRANTFORD, CAN.

Imported Clydesdales

I have on hand for sale 7 choice Imp. Clydesdale mares 3 and 4 years old. All in foal. They have size, quality and grand action. An extra good lot. Also the 6-year old Imp. stallion, Fiscal Member (6149), a horse of great size, grand quality, and a sure getter. All these are richly bred. Write for particulars. R. M. HOLBY Manchester P. O. and Station. Long-distance phone.

QUESTIONS AND ANSWERS. Miscellaneous.

SOWING ALFALFA.

How do you sow alfalfa? With what crop, and what time of year? How many pounds per acre? R. A. C.

Ans.—Sow alone or with a bushel of barley per acre. The seed may be sown by hand or with a grass seeder. Sow early in May; 20 to 25 pounds of seed per acre.

MILITARY TRAINING—AUTHORS' RECOMPENSE.

1. Where to should one go to get military training?

2. About how much do authors receive for books, such as "Carmichael," "Sky Pilot," etc.? A. J. S.

Ans.—1. The Royal Military College of Canada, Kingston, Ont.

2. There is no standard rate. Some books are purchased outright for a small or a large consideration. A good many are published on a royalty basis, the author's royalty depending on the adjudged quality of the book, and his professional reputation and business acumen. It ranges, say, from 10 to 30 per cent.

INAPPETENCE.

Cow lost appetite about time she was due. In her udder there were no signs of milk whatever. I gave her 2 1/2 lbs. Epsom salts at night, with results next morning. About four o'clock the same day she gave birth to a calf fine and smart. I could only get a few drops out of her teats at first, but now I get about two quarts a day. I have been feeding cut straw (dampened), and one-half gallon of pea and barley meal (mixed) twice a day, with a liberal quantity of roots. M. D. J.

Ans.—If cow has not regained her appetite, this will largely account for her lack of milk. Give her one and a half pints raw linseed oil, and, after purging, follow up with a tablespoonful of the following three times daily: Equal parts sulphate of iron, gentian, ginger, nuxvomica, nitrate of potash and bicarbonate of soda as a drench in a pint of cold water, slowly. Feed bran and chopped oats (mixed), as it is lighter on the stomach, and more likely to increase the milk flow.

REGISTERING STANDARD-BREDS.

I have a mare with a mark of 2.18, and in foal to a registered Standard-bred horse.

1. How could I get her foal registered, and what would it cost?

2. Could the mare be registered by performance? A. R. M.

Ans.—The rules of the American Trotting Register require the following to entitle to registration: A mare whose sire is a registered Standard trotting horse, and whose dam and granddam were sired by registered Standard trotting horses, provided she herself has a trotting record of 2.30, or is the dam of one trotter with a record of 2.30.

A mare sired by a registered Standard trotting horse, provided she is the dam of two trotters with records of 2.30.

A mare sired by a registered Standard trotting horse, provided her first, second and third dams are each sired by a registered trotting horse. The address of the Secretary is 255 Dearborn St., Ellsworth Building, Chicago.

WHAT HAPPENED TO JONES.

One day a tall, gaunt woman, with rope-colored hair and an expression of great fierceness, strode into the office of a county clerk in West Virginia.

"You are the person that keeps the marriage books, ain't ye?" she demanded.

"What book do you wish to see, madam?" asked the polite clerk.

"Kin you find out if Jim Jones was married?"

Search of the records disclosed the name of James Jones, for whose marriage a license had been issued two years before. "Married Elizabeth Mott, didn't he?" asked the woman.

"The license was issued for a marriage with Miss Elizabeth Mott."

"Well, young man, I'm Elizabeth. I thought I oughter come in an' tell ye that Jim has escaped."

GOOD REPORTS.

Home-mixed Stock Food a Success.

A short time ago we published in this column a formula for preparing Stock Food at home from Barnes' English Compound and fresh nutritious grains. We have received so many words of praise for this formula that we are reprinting it for the benefit of those who may have chanced to miss it.

The advantage of making your own Stock Food at home, using only the pure medicines and fresh grains and avoiding harmful drugs and worthless fillers, is certainly of great importance to every farmer and stockman.

The formula is as follows: Mix three pounds Linseed Meal and six pounds Corn Meal with one pound Barnes' English Compound. It will make ten pounds of purest and strongest Stock Food that can be made. S. G. Amsden, Box 668, Windsor, Ont., will send one-pound package, postpaid, on receipt of 50c., money order or stamps.

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400 HEAD

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THE BEST Percherons, Belgians French Coachers

Horses delivered to any part of United States or Canada free of charge.

Three large importations since July 1st, including tops of twenty leading breeding establishments of France. Visit us.

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Dr. Page's English Spavin Cure.

For the cure of Spavins, Ringbones, Curbs, Splints, Windgalls, Capped Hocks, Strains or Bruises, Thick Neck from Distemper, Ringworm on Cattle and to remove all unnatural enlargements.

This preparation (unlike others) acts by absorption rather than blister. This is the only preparation in the world guaranteed to kill a Ringbone or any Spavin or money refunded, and will not kill the hair. Manufactured by Dr. Frederick A. Page & Son, 7 and 9 Yorkville Road, London, E. C. Mailed by express upon receipt of price, \$1.00. Canadian agents: J. A. JOHNSTON & CO. Druggists, 171 King St., E., Toronto, Ont.

RIVER VALLEY CLYDESDALES AND SHORTHORNS.

For Sale—Two stallions, one imp., the other imp. in dam; 2 imp. mares 3 and 4 yrs. of age—a grand pair, with size and quality; 1 filly foal imp. in dam. Shorthorns all ages, of both sexes; straight milking strain. A. V. Carefoot, Thornbury Sta., Re wing P. O.

FOR SALE: CLYDESDALE STALLION rising 3 years this spring. Grandson of Imp. Bold Boy. His sire full brother to a world-champion show horse at Chicago. A light chestnut White face. Well feathered. Good mane and tail. Stands 16 hands. Good block and splendid action. Plenty of good flat bone. Was bred to 13 mares last season 9 or 10 have proved in foal. The property of the late Henry K. Schmidt. Must be sold. For further particulars apply to GEO. MOORE or J. H. ENGLE, Y. S., Waterloo, Ont.

For IMPOR'ED PERCHERON STALLION five years old; first class in every way. Apply to Box 85, Thamesville, Ont.

Clydesdales, Shorthorns and Cotswolds—For individuals of above breeds, write me. My new Cotswold and Clydesdale importation will arrive early in the season.

J. O. ROSS, Jarvis P. O. and Sta.

YOUNG MEN WANTED—To learn the Veterinary Profession. Catalogue sent free. Address VETERINARY COLLEGE, Grand Rapids, Mich. L. L. Coakley, Prin.

Fistula and Poll Evil

Any person, however inexperienced, can readily cure either disease with Fleming's

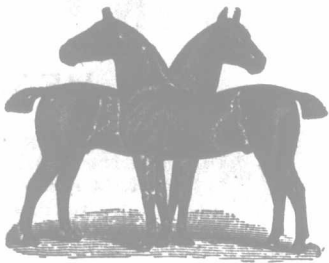
Fistula and Poll Evil Cure

—even bad old cases that skilled doctors have abandoned. Easy and simple; no cutting; just a little attention every fifth day—and your money refunded if it ever fails. Cures most cases within thirty days, leaving the horse sound and smooth. All particulars given in Fleming's Vest-Pocket Veterinary Adviser. Write us for a free copy. Ninety-six pages, covering more than a hundred veterinary subjects. Durable bound, indexed and illustrated.

FLEMING BROS., Chemists,
75 Church Street, Toronto, Ontario

THE LAFAYETTE STOCK FARM

J. CROUCH & SON, PROPS.
LaFayette, Ind.



Largest importers in America of Percheron, Belgian and German Coach stallions and mares. The three popular breeds. The States have about discarded all breeds of draft horses except the Percheron and Belgian. They are low down, blocky shaped, clean legs, cuppy feet and tough, and can go over rocky roads without shoes; are close made, long ribbed, and live on half the food that the leggy shorty ribbed, big Roman nose kind do. They mature at three years old. Long time to responsible buyers. Guarantee the best. Prices from \$700 up to \$9,200.

Cures Spavin

The world wide success of Kendall's Spavin Cure has been won because this remedy can—and does—

—cure Bog and Bone Spavin,

—Curb, Splint, Ringbone, Bony Growths,

—Swellings and Lameness.

MEAFORD, ONT., May 22 '06.

"I used Kendall's Spavin Cure

on a Bog Spavin, which cured it

completely." A. G. MASON.

Price \$1—6 for \$5. Accept no substitute.

The great book—"Treatise on the Horse"

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Dr. B. J. KENDALL CO., Enosburg Falls, Vermont, U.S.A.



ABSORBINE

Cures Strained Puffy Ankles, Lymphangitis, Bruises and Swellings, Lameness and Always Pain Quickly without Blistering, removing the hair, or laying the horse up. Pleasant to use. \$2.00 per bottle, delivered with full directions. Book 5-C, free.

ABSORBINE, JR., for mankind, \$1.00 Bottle. Cures Strains, Gout, Varicose Veins, Varicocele, Hydrocele, Prostatitis, kills pain.

W.F. YOUNG, P.D.F., 73 Monmouth St., Springfield, Mass.
Canadian Agents: LYMAN BROS. & CO., Montreal.

HORSE ACTION DEVELOPERS

Royal Letters Patent No. 5565



FOR PRODUCING AND IMPROVING ACTION IN HORSES

WRITE FOR PARTICULARS.

G. E. GIBSON, OAKHAM, ENGLAND.

MR A. I. HICKMAN,

Court Lodge, Egerton, Kent, England,

exports pedigree live stock of every description to all parts of the world. Exported during 1907 more Shetland ponies, more Romney Marsh sheep, and more champion Oxford Downs than any other breeder or exporter. Besides large numbers of other breeds of horses, ponies, cattle, sheep and pigs. Correspondence invited. Highest references given.

Shannonbank Clydesdales, Ayrshires, Yorkshires One stallion rising three years, by imported Hopewell. Two young bulls ten months, and some heifers from six months to two years. Yorkshires of both sexes. W. H. TRAN, Cedar Grove P.O., Locust Hill Sta., C.P.R.

GOSSIP.

W. H. Smith, Toronto, advertises collie pups. See advertisement, and write for further information.

A choice fruit and grain farm of 42 acres in the Niagara fruit-growing district is advertised by Mr. Edward Parnell, Port Dalhousie, Ont., one of the choicest sections in the Dominion for enjoyment of the comforts of life.

HODGKINSON & TISDALE'S CLYDESDALES.

While in the vicinity of Beaverton, Ont., a few days ago, our field man, having an hour or two to spare, improved the opportunity by a short visit to the great Clydesdale and Hackney breeding barns of Messrs. Hodgkinson & Tisdale, and, as usual, found the long rows of box stalls filled with the kind of Clydesdales and Hackneys that delight the eye, and that have made this firm noted as one of Canada's leading horse-breeding firms, a claim amply sustained by their almost unbroken series of championship winnings for the last eight years, particularly at Toronto, but including Ottawa, the Chicago International, and the Pan-American, they having won no less than eleven championships in that time, and those mostly on Canadian-bred mares and fillies. This is accounted for by the fact that nothing but a top-notch enters their stables, and that as chief stallion in service, money never stops them from purchasing the best available, as is evidenced that for the last three years the great champion of Canada and the United States, Royal Baron (imp.), one of the greatest sons of the great Baron's Pride, has been their stock stallion; and as proof that his selection was a wise one, we have only to see the grand quality of his get, and watch them being decked with the red in the show-rings. The chief Hackney stallion in service is the bay son of the noted sire, Danegelt, Linden Renown, an ideal type of the breed, and a Toronto winner. Owing to the brisk demand for high-class show stuff, they have only on hand for sale three fillies, all two-year-olds, and all Toronto winners: Baron's Queen [12985] (Canadian-bred), by Royal Baron; dam Peerless (imp.); won second at Toronto last fall, and first at the late Winter Show. Craigie Belle (imp.) [14073], by The Dean; was second at Toronto last fall, and fourth at the late Show. Bishop Queen (imp.) [14072], by Prince Sturdy; was second at the late Winter Show; a trio of fillies that, for sweetness of mould and flashiness of quality, have very few equals. They have also on hand for sale the bay three-year-old, Canadian-bred Clydesdale stallion, MacKenzie [4798], by Imp. Foremost; dam Imp. Royal Princess [2345]; he is a massive, thick, smooth colt, choke-full of Clydesdale character, and stands on an ideal bottom of strong, flat bone, well-sprung ankle, and grand big feet, a colt that should make an impressive sire and a great show horse. The firm have also on hand several high-class Hackney ponies; little beauties, and thoroughly broken.

A sad and seedy individual found his way into a Baltimore office building, gained admission to the offices of one of the city's best known legal firms, and, at last, somehow, penetrated to the sanctum of the senior partner.

"Well," asked the lawyer, "what do you want?"

The visitor was nothing if not frank.

"A dollar bill," he said; "although,"

he added, "if you don't happen to have the bill, silver will do."

The man's unusual manner caught the lawyer's curiosity.

"There you are," he said, handing out the money. "And now I should like to have you tell me how you came to fall so low in the world."

The visitor sighed.

"All my youth," he explained, "I had counted on inheriting something from my uncle, but when he died he left all he had to an orphan asylum."

"A philanthropist," commented the lawyer. "What did his estate consist of?"

"Ten children," said the visitor—and vanished.

The Tie That Binds

Examine our lock—"The Tie That Binds." Notice how it locks smooth on both sides of the line wire. Being an oval loop, it permits a long bend in the line wire. This does away with short kinks, which cause so many breaks in the fence.

This lock can't slip and adds strength and wear to the whole fence. The "Standard" may cost a little more than small, soft wire fences—but it's worth more to every farmer and stockman who wants the best. Write direct to the factory for catalogue and sample lock.

The Standard Wire Fence Co. of Woodstock Limited, Woodstock, Ont.
THE JAMES STEWART MFG. CO., WINNIPEG, MAN.
General Agents for The Great Northwest.

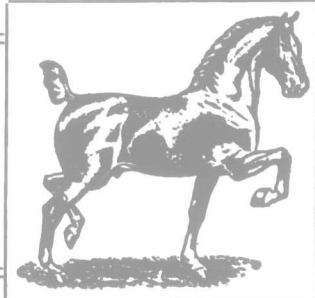
Standard Woven Wire Fence

THE UNION STOCK-YARDS COMPANY, Ltd.

HORSE EXCHANGE

KEELE ST., - - TORONTO JUNCTION

Auction Sales of Horses, Carriages and Harness every Monday and Wednesday. Private Sales every day



Come and see this new Horse Exchange, it will interest you, also the Quarter-mile Track for showing and exercising

The Directors of the above Company have not spared anything in the building of this new Horse Exchange. The stables, which are built of cement and brick, will stall between 200 and 300 head of horses and are considered by judges, who have seen them, to be the most sanitary they have yet seen.

We have sold on an average of 100 horses per week since the opening of this great horse market, and now that the success of the horse business is assured, we are in a position to handle Breeders' Stock Sales of all kinds, Cattle, Sheep, and Hogs.

Breeders will find that advertising from a central place like Toronto will be advantageous in many ways, as this is unquestionably the most complete market of its kind in America for both buyer and seller.

We have our own railway chutes, which are the finest, and can load any number of cars at once on both G.T.R. and C.P.R. No charge for loading or unloading stock of any kind.

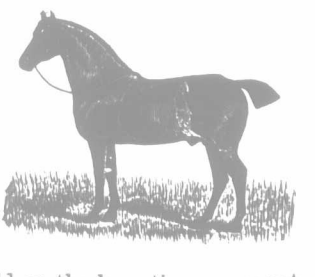
Correspondence solicited as to terms, etc.

HERBERT SMITH, Manager.
(Late Grand's Repository).

IMPORTED CLYDESDALES AND HACKNEYS



Stallions and mares, both breeds, representing the best blood of England and Scotland, combining size, quality and faultless action. Stallions are all guaranteed sure foal-getters, or replaced by one of equal value. All will be sold on the long-time payment plan. Stallions insured against risks of all kinds. If in need of something choice of the above breeds, write or wire for full particulars and catalogues.



DUGALD ROSS, Streetsville, Ontario.

Graham - Renfrew Co.'s

CLYDESDALES and HACKNEYS.

Our Clydes now on hand are all prizewinners. Their breeding is gilt-edged. Our Hackneys, both stallions and mares, are an exceedingly high-class lot. We also have a few high-steppers and carriage horses. Yonge street cars pass the door every hour. Phone North 4483.

GRAHAM-RENFREW CO., LTD., Bedford Park, Ont.

CLYDESDALE STALLIONS

Our new importation has just landed. An exceedingly good lot. Some extra big fellows. They may be seen at our stables, Fraser House, London. Call and see them, or write

MESSRS. DALGETY BROS., GLENCOE, ONT.

25 Imported Clydesdale Stallions and Fillies 25

Two Clyde stallions, 1 Hackney stallion, over 20 Clyde mares and fillies, from 1 to 5 years of age. Many high class show animals among this lot. Many winners in Scotland among them. They have size, quality, style, action and breeding. Come and see them. GEO. A. BRODIE, Bethesda P. O., Steubenville and Germley Stations.

IMPORTED CLYDESDALES! 9 stallions, 1 to 5 years of age; 10 fillies, 1 to 3 years of age, several of them in foal; 1 two-year-old Hackney stallion; 1 two-year-old Shire stallion; 8 Percheron stallions, 3 years old. All are selected animals, bred in the purple. Will be sold cheap and on terms to suit. T. D. ELLIOTT, BOLTON, ONT. Phone.

BLATCHFORD'S CALF MEAL

Our BOOKLET plainly tells the story of Blatchford's Calf Meal, with convincing testimonials from some of the 20,000 progressive farmers who have had excellent success with this perfect milk substitute. It costs about half as much as milk. It prevents scouring. It is the oldest and best. It is free from mill feed. It is cooked. The Booklet is FREE. Write for it.

J. A. Simmers, Toronto, Ont.
Taylor Bros., Ltd., Carleton Place, Ont.
J. H. Byers, Stratford, Ont.

ABERDEEN - ANGUS

For sale 50 head to pick from, males or females by imported sire. Drumbo station.

WALTER HALL, Washington, Ontario.

Hyde Park Herefords Choice young heifers, and cows with calves at foot and bred again, for sale.

Thomas Skippon, Hyde Park, Ont.

Am offering at the present time

3 Very Fine Imp. Young Bulls.

Good colors, and of the best breeding; also some extra good Canadian-bred bulls ready for service. Also cows and heifers imported and C nadian-bred. Prices reasonable

H. J. DAVIS, Importer and Breeder, Woodstock, Ont.

SHORTHORNS AND LEICESTERS.

For sale: One extra good young bull, 11 months old, from imp sire and dam; also a few good young Leicester ewes in lamb. At easy prices for quick sale

W. A. Douglas, Caledonia station, Tuscarora P. O.

Glen Gow Shorthorns

Our present offering is 9 bulls, from 6 to 14 months of age, sired by Imp. Ben Loman and Imp. Joy of Morning, and out of Imp. and Canadian-bred cows. Also a number of very choice heifers. No fancy prices asked. Long-distance phone.

WM. SMITH, Columbus P. O. Brooklyn & Myrtle Sts.

R. H. REID,

Glover Lea Stock Farm, PINE RIVER, ONT.,

BREEDER OF SHORTHORN CATTLE Golden Cross (imp.) at head of herd.

SPRING VALLEY SHORTHORNS

Two young imported bulls of the very best quality and breeding. Six Canadian-bred bulls mostly the get of Bapton Chancellor (imp.) Prices right

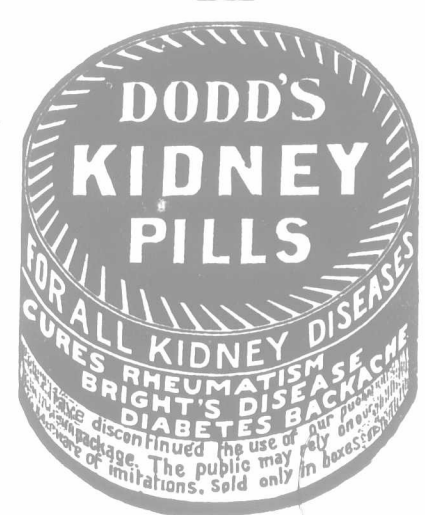
KYLE BROS., AYR, ONTARIO.

MAPLE GROVE SHORTHORNS

Scotch and dairy bred; up to date in type; prize-winners at the local shows. A number of 1 and 2 year old eifers, 1 year old bull, and one 5 mos. old—the last will make a show bull. Flora bred—will be sold e. s. y.

L. B. POWELL, Wallenstein P. O. and Str., G. P. R.

Mr. George Nicholls, M. P., told an amusing story concerning the Deceased Wife's Sister Act. He had been shown a letter which a man wrote to a member of Parliament, asking with much concern, "Now that you have the Deceased Wife's Sister Act passed, is it compulsory? I mean," added the anxious inquirer, "if my wife dies, am I forced to have her sister?"



TREATMENT FOR ABORTION.

One of the most insidious and troublesome maladies affecting the business of breeding cattle is that known as contagious abortion, and the discoverer of a simple and reliable preventive or remedy for the disease will confer a great boon upon stockmen. But care must be exercised lest any prescription advised may be misleading and harmful rather than helpful.

A correspondent writes us, claiming to have satisfactory experience in treating abortion in cows by means of the yeast treatment, so often repeated in these columns for barrenness. Our correspondent recommends the injection of the yeast solution into the womb of the cow. Whether he means what his letter leads one to think he does, or whether it is a case of misnaming the parts of the anatomy of the animals, we know not; but, having submitted his letter to an eminent veterinary authority, we publish herewith his comment on the prescription:

The writer of the enclosed article re "yeast treatment for abortion" is certainly mistaken. I am of the opinion he had not infectious or contagious abortion in his herd, else he would not have been able to combat it so easily and quickly. It is highly probable the cases he had were accidental.

He states that the preparation must be injected into the womb. Now, in order to inject anything into the womb of a pregnant animal, it is necessary to rupture the foetal membranes (commonly called the afterbirth), and any person with any knowledge of obstetrics knows that once these membranes are ruptured, even though no foreign matter be injected, delivery must take place. The rupture in the membranes allows the escape of the foetal fluids, and the foetus cannot continue to live. Hence, the theory advanced must be wrong. The germ that causes abortion (in the infectious form) is in the womb, and nothing can be injected to destroy it. The theory of the carbolic-acid treatment is that the drug, entering the system through the stomach, gains the circulation in the usual manner, and circulating through the vessels of the womb may destroy the germs. Many have little faith in this, but certainly local treatment cannot be effective. The usual supposition is that an affected pregnant cow cannot be treated successfully until after delivery. She may be affected, and at the same time carry her calf to full term. Antiseptic treatment, such as flushing the womb with an antiseptic, must be practiced when the cow is not pregnant, with the hopes of destroying the virus of the disease that is located in the womb, before breeding her again. The yeast treatment may act as well, or possibly better, than other antiseptics, and may be valuable for injecting the vagina of pregnant cows to prevent the entrance of the germ to the womb; but the idea expressed, viz., that it will be effectual in preventing abortion in a pregnant cow, whose womb is already attacked by the virus, is unquestionably wrong. The simple facts of the case are that the writer of the article knows little about the anatomy of the animal or the phenomena of gestation and foetal development. He thinks he injects the fluid into the womb, while he simply injects the vagina. In order to inject the womb, it is necessary for the operator to insert the hand through the vulva into the vagina, and press it forward until the fingers reach the neck of the womb, and then dilate the entrance to the organ with the finger; pass the syringe or nozzle of the injection pump through the vagina with the other hand, and direct it into the opening (called the os uteris) with the inserted hand. While it is possible to inject the womb with a spray pump with a nozzle 8 or 10 inches long, if properly directed, it is not at all probable the nozzle will enter the os unless directed as stated, and if it should do so in a pregnant animal, it would rupture the membranes, introduce foreign matters into the amniotic sac, and of a surety cause abortion.

While we do not like to endeavor to dispel a man's illusions when he thinks he has made a valuable discovery, we do not think it would be wise to allow a purely false idea of such an important matter as this to gain credence. WHIP.

You Might as Well be Deaf and Dumb



These days, as to be without a telephone service. A telephone in your house is just as much needed as a stove for cooking purposes. Think what it means to have a telephone in your home—think of being able to speak with your friends at any time during the day or night—of being able to summon a doctor in case of sickness—or, in an emergency, being able, in a few seconds, to communicate with your neighbors, besides the many other uses to which it can be put. A telephone service can be installed at a small cost anywhere—in a town, village or farming district and once the telephone is paid for, it belongs to you. Write to-day for some of our literature about the convenience of telephones, the ease with which they can be installed, the cost of building them, and other important information.

Northern Electric and Manufacturing Co. Ltd. MONTREAL AND WINNIPEG Use address nearest you.

Shorthorns! BELMAR PARC.

John Douglas, Manager, Peter White, Pembroke, Ont.

Calves for sale by our grand quartette of breeding and show bulls: Nonpareil Archer, imp. Proud GR, imp. Marigold Sailer. Nonpareil Eolsee. Females, imported and from imported stock in calf to these bulls. An unsurpassed lot of yearling heifers.

SCOTCH SHORTHORNS

My herd is represented by such noted Scotch families as Victoria, Orange Blossom, Duchesses of Gloster Strathallan, Stamford and Lovely. Mostly from imported sire and dams. Write me for prices on what you want. J. F. MITCHELL, Burlington Jct. Sta. Burlington P. O. and Telegraph.

SHORTHORNS AND LINCOLN SHEEP.

Two bulls, 11 and 19 months old—a Mini Ramsden and a Bessie, both by the good breeding bull, Proud Gift -50077- (imp.), also cows and heifers in calf by him. Inspection solicited. Always have some choice Lincoln sheep for sale at reasonable prices. J. T. GIBSON, DENFIELD, ONTARIO.

LIVINGSTON'S OIL CAKE MEAL. OLD PROCESS

Nothing is better for fattening steers quickly and putting them on the market in prime condition than Oil Cake Meal. Thousands of Canadian and English stockmen use Livingston's, and would have no other. It is equally good for milk cows. They give more and better milk when fed Livingston's Oil Cake Meal. Also used for horses, sheep and hogs. Write for information regarding prices, etc., etc., to DOMINION LINSEED OIL CO., LIMITED Montreal, Que. Baden, Ont.

SHORTHORN BULLS For Sale.

At the dispersion of the "Thistle Ha" herd in Jan., 1905, I purchased a few of the best breeding cows. From these cows I now have 6 extra good young bulls for sale. For pedigrees and other particulars apply to JOHN MILLER, Brougham P. O. Claremont Sta., C. P. R.

SHORTHORNS

For want of stable room will sell cheap 10 heifer calves, 12 yearling heifers, 4 two-year-old heifers in calf, and 3 red bulls about 14 months old. Right good ones. OLYDESDALES.—Two-year-old mare in foal, and a good pair 4 and 5 years old. Write, or come and see them. JAMES McARTHUR, GOBLES, ONTARIO.

HOME-BRED BULLS

We are offering a very superior lot of SHORTHORN of the best breeding and quality at attractive prices for the buyer. To see them is all that is necessary. Try to do so if you are in the market. It will pay you. JNO. CLANCY, Manager. H. CARGILL & SON, Cargill, Ont.

PROOF!

That Zam-Buk Grows New Healthy Skin.

The unique power belonging to Zam-Buk for growing new healthy skin when it has been destroyed by injury, disease or operation is illustrated by the recent experience of Mr. J. Schofield, of 467 Hamilton Road, London, Ont. He says: "A friend of mine (Mr. William Ball, of London) was severely and terribly burned through an explosion of kerosene oil. He was taken to the hospital, where he suffered intense pain. The wounds refused to heal, and the doctors decided to resort to skin grafting, and I consented to have some skin transplanted from my legs to his body. Although this was done on several occasions, the skin refused "to take" until Mr. Ball heard of Zam-Buk. From the time he applied Zam-Buk, new healthy skin began to grow. I then used Zam-Buk for the places on my leg from which the skin was removed, and I am glad to report that new skin has grown, and, therefore, consider Zam-Buk the best skin food I have known."

Zam-Buk builds up new tissue in a way that is not possible with ordinary preparations. For healing eczema, running sores, cuts, bruises, burns, boils eruptions, scalp sores, itch, chapped hands and diseases of the skin, it is without equal. All druggists and stores sell it, 50c. a box, or postpaid from the Zam-Buk Co., Toronto.

T. DOUGLAS & SONS
STRATHROY, ONT.



Breeders of Short-horns and Clydesdales. 15 bulls, 60 cows and heifers, 1 imp. stallion, imp. and home-bred fillies. Write us what you want or come and see our stock. Farm 1 mile north of town.

2 Very Fine Young Bulls
ONE RED AND ONE ROAN
10 and 16 months old

From imported sires and dams. Both will make winners.

W. J. SHEAN & SON, Box 856, OWEN SOUND.



Herd Bulls for Sale

We now offer our grand show and breeding bull, Ridge wood Marquis = 48995 =, good disposition and sure breeder, and Good Marquis = 69299 =, born Dec. 16th, 1906 a bull good enough to show anywhere. Our prices are reasonable. Write for particulars or, better, come and see. Jno. Lee & Sons, Highgate, Ont.

A. EDWARD MEYER,
Box 378, Guelph, Ont.,

Offers for sale two young Scotch-bred bulls of good colors, both from imported sires: one from imported dam and the other from a Clementina cow; one is 11 months old, the other 8 months. They will be sold well worth the money. Write, or come and see them. Long-distance phone.

Salem Shorthorns!

The champion "Jilt Victor" already bred. We can suit you in either sex. Write your wants.

J. A. WATT, SALEM, ONT.
Elora Station, G. T. R. and C. P. R.
Long distance phone.

TWO IMPORTED BULLS

Direct from Aberdeenshire, Scotland, of excellent quality, color and breeding, two from imp. sire and dam, and others sired by Joy of Morning (Imp) = 32070 =. Prices in Shorthorns and Yorkshires will not rest in the hands of purchasers.

GEO. D. FLECHER, Binkham P.O., Ont.
Erin St., C. P. R.

GREENGILL HERD OF HIGH-CLASS SHORTHORNS.

We offer for sale choice young bulls from 6 to 12 months old, sired by imp. Lord Roseberry, also cows and heifers, with calf at foot or bred, either imp. or Canadian-bred.

R. MITCHELL & SONS,
Walsen P. O., Ont., Burlington Jct. Sta.

Maitland Bank Shorthorns—Five bulls, 12 to 16 months; six bulls, 9 to 12 months, got by Broadhooks Prince (Imp) = 55002 =, and some of them from imp. cows; also cows and heifers, milking sort and right breeding. Lowest prices for quick sale. Come and see them, or write.

DAVID MILNE, Ethel, Ont.

SCOTCH SHORTHORNS!

We now offer four heifer calves 10 and 11 months old. All reds. Bred from imp. sire and dams. Will be sold right. O. RANKIN & SONS,
Wyebridge P. O., Wyevale Sta.

GOSSIP.

Official records of 122 Holstein-Friesian cows were accepted by the American Holstein Association, from February 15th to March 2nd, 1908.

This herd of 122 animals of all ages, 41 of which were two-year-olds, produced in seven consecutive days 47,765.6 lbs. of milk, containing 1,660,536 lbs. of butter-fat; showing an average of 3.48 per cent. fat. The average yield for each animal was 391.5 lbs. of milk, containing 13,611 lbs. of butter-fat; equivalent to 56 lbs., or 27 quarts of milk per day, and 15.88 lbs. of the best commercial butter per week.

GRAHAM-RENFREW'S CLYDESDALES.

In business scarcely three years, and with an international reputation as importers of England's best Hackneys and Scotland's best Clydesdales, excelled by no other firm in the business in America, a reputation fairly and honestly won by their phenomenal success in the show-rings of Canada and the United States during the last two years, the Graham-Renfrew Co., Limited, Bedford Park, Ont. (North Toronto), certainly deserve commendation for bringing within the reach of the breeders of Canada so many high-class horses. Already, horses of their importation are distributed from the far Northwest to the balmy clime of old Virginia on the south, and are still winning honors for their owners in their far-away homes. The show-ring winnings of this firm during 1906 and 1907 almost reads like a fairy tale. Here are a few of them, but not all by any means: Flash Baron, a son of the great Baron's Pride, first at Toronto and first at Chicago in 1906; Baron Hamlet, another son of Baron's Pride, second at Toronto and Chicago in 1906; Evander, by Elator, by Baron's Pride, first and champion at the Royal, Aberdeen, and first at Chicago in 1906 (not shown at Toronto); Lanark Queen (filly), winner of 25 first prizes and championships in Scotland, and first and championship at Toronto and Chicago in 1906; Lady Betty, a yearling filly, first in her class at Toronto and second at Chicago in 1907; Sir Marcus, a bay son of Sir Simon, first and champion at Toronto and Chicago in 1907, and first at Winter Horse Show, Toronto, 1908; Buteman, a bay son of Pride of Blacon, first at Toronto, 1907; Celtic Laird, a brown son of Argus, first at Toronto Winter Stallion Show, 1906, and season stallion of the firm for the last two years; Baron Howes, a black son of Baron Hood, by Baron's Pride, first at Chicago in his class, 1907, and first and champion at Winter Show, Toronto, 1908; Drawdykes Baron, first in the two-year-old class at Toronto, and second in the same class at Chicago, 1907, being only beaten there by his peerless stable mate, Baron Howes. Coming to the Hackneys, we have the wonder of perfect conformation and action: Brigham Radiant, first and champion at Toronto, 1907, and second at the late Winter Show; Coveny Marmion, first at the late Winter Show, Toronto, in the 15-2-and-over class; Americus, second in harness at Toronto, and third at Chicago, 1907; Cliff Royalist, third in the three-year-old class at Toronto, 1907; Copmanthorpe Swell, third in the four-year-old class, Toronto, 1907; Saxon's Queen (filly) first at Toronto and Chicago, 1907, and first and championship at Toronto Winter Show, 1908; Plymouth Horace, Hackney stallion pony, winner of several firsts and championships at Toronto and New York.

All told, the firm have now on hand 10 Clydesdale stallions, from two to five years of age, among which are some of the winners above enumerated, the others, equally as good, have never been shown, all of that grand, flashy quality that please the eye and wins the ribbons. These horses can be bought for a price at once interesting and seductive to intending purchasers, and on terms to suit. There are also on hand for sale four Hackney stallions, prizewinners and sensational actors. A letter to Bedford Park P. O., or a telephone to Walker House, Toronto, will get you in touch with the firm.

Save Money

If there really IS something that costs very little and yet insures that your feed-bill will be money WELL spent—you can afford it, can't you?

If that "something" not only amounts to a HEALTH insurance on your beasts, but also adds to their VALUE, you can't afford to do without it—can you?

This is What Greig's Will Do

Greig's Improved Cattle Food will keep your horses fit, strong, and always ON their feed.

It will keep your cows plump, much increase their milk-flow, make richer milk, carry them safely through calving.

It will bring your hogs quicker to the killing-stage—and the meat will be QUALITY pork, every ounce. It will positively prevent and cure hog cholera.

It will ward disease off your sheep, make them sturdy and quick growing, make their wool soft and greasy.

Needn't Buy Greig's by the Ton

Unlike some so-called "foods," you needn't feed Greig's with a shovel to get any good results from it. Though it is NOT a mere medicine, but a vegetable preparation that DOES make ALL feed better. Greig's is withal a "teaspoonful" product instead of a "scoop shovel" one. A little of it does a lot of profit-making for any kind of stock—you needn't buy it by the ton—and it doesn't cost a lot.

7 lb. Trial Box, 50c.
12 lb. Wooden Pail, \$1.00

Greig's Improved Regulator is the same as the Food but four times stronger—very highly concentrated, so cheaper to feed. Many prefer it—less bulky. 3 lb. package, 50c.; 12 lb. pail, \$2.

We prepay the charges anywhere in Canada if your own dealer hasn't Greig's, if you send your dealer's name, and we GUARANTEE it does ALL we say.

GREIG'S IMPROVED Cattle Food

Queenston Heights Shorthorns

Young bulls from imported and home-bred Scotch cows, and got by such noted bulls as Dryby (imp.), Boicy Broadhooks (imp.) and Whitehall Ramsden. Priced for quick sale.

HUDSON USHER, Queenston, Ont.
Farm three miles north of Niagara Falls.

PLEASANT VALLEY SHORTHORNS

For sale: 3 young bulls by Old Lancaster Imp. from imp. dams, including Lancaster Victor, first prize sr. bull calf at Dom at Sherbrooke, second at C. N. E., Toronto. Correspondence solicited. Inspection invited.

Geo. Amos & Son, Moffat Stn. & P.O. C. P. R. Farm 11 miles east of City of Guelph.

10 IMPORTED BULLS 10

Recently arrived from Scotland in good condition. They are a superior lot. Selected for herd-headers. We also have a number of Canadian-bred bulls of excellent quality, and representing the choicest breeding. Females suitable for show or breeding purposes.

W. G. PETTIT & SONS, FREEMAN, ONTARIO.

Burlington Jct. Sta., G. T. R. Bell telephone at each farm.

1854 Maple Lodge Stock Farm 1907

An exceptionally choice lot of heifers and young bulls for sale now. Best milking strains.

A. W. Smith, Maple Lodge P.O., Ont.

Valley Home Shorthorns AND BERKSHIRES.

Our herd numbers sixty-five head. We are prepared to give bargains to suit all who wish to buy from one animal up to a carload of females, and 12 bulls from 9 to 18 months old. Also 55 Berkshires of prolific strains.

S. J. PEARSON, SON & CO., Meadowvale, Ont.
Stations: Meadowvale, C. P. R.; Brampton, G. T. R.

M
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P
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E

Winners at the leading shows have been sired by bulls bred here. We can sell you a good bull to head your herd of SHORTHORNS, or for use on your good grade cows. The bull catalogue explains the breeding. Write for it.

John Dryden & Son, Brooklin, Ont.

Stations: Brooklin, G. T. R.; Myrtle, C. P. R.
Long-distance telephone.

S
H
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D
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ASKS US TO PRINT IT.

To relieve the worst forms of Rheumatism, take a teaspoonful of the following mixture after each meal and at bedtime:

Fluid Extract of Dandelion, one-half ounce; Compound Kargon, one ounce; Compound Syrup Sarsaparilla, three ounces.

These harmless ingredients can be obtained from our home druggists, and are easily mixed by shaking them well in a bottle. Relief is generally felt from the first few doses.

This prescription, states a well-known authority in a Cleveland morning paper, forces the clogged-up, inactive kidneys to filter and strain from the blood the poisonous waste matter and uric acid which causes Rheumatism.

As Rheumatism is not only the most painful and torturous disease, but dangerous to life, this simple recipe will no doubt be greatly valued by many sufferers here at home, who should at once prepare the mixture to get this relief.

It is said that a person who would take this prescription regularly, a dose or two daily, or even a few times a week, would never have serious Kidney or Urinary disorders or Rheumatism.

Cut this out and preserve it. Good Rheumatism prescriptions, which really relieve, are scarce indeed, and when you need it, you want it badly. Our druggists here say they will either supply these ingredients or make the mixture ready to take, if any of our readers so prefer.

An ambitious woman once wrote to Abraham Lincoln, asking for a sentiment and his autograph. The President answered, promptly:

"Dear Madame,—When you write to a stranger, asking the favor of a letter, always inclose a postage stamp. There's the sentiment.

"Here's the autograph
"A LINCOLN."

Cattle and Sheep Labels. Size Price, doz. 50 tags. Cattle 75c. \$1.00. Light Cattle 60c. \$1.00. Sheep or Hog 40c. \$1.00.

Cattle size with owner's name and address, and numbers; sheep or hog size with name and numbers. Sample and circular mailed free. Get your neighbors to order with you and get lower price. F. G. JAMES, Bowmanville, Ont.

ROCK SALT for horses and cattle, in 5 lb and 10 lb lots. TORONTO SALT WORKS, TORONTO.

J. Watt & Son

For sale—2 high-class bull calves of the richest breeding; 30 young cows and heifers a number of which are well gone in calf to Imp. Pride of Scotland Moderate prices. Correspondence invited.

Salem P. O., Elora Sta. G.T.R. & C.P.R.

J. BRYDONE, Breeder of pure Scotch Short horns. Breeding females imported. Headed by the pure Cruickshank (Duchie-bred) bull, Sittytion Victor (Imp.) -60008- (1897). Young stock from Imp. dams for sale. Prices reasonable. Telegraph, Telephone, R. R. Sta. and P. O., Milverton.

Shorthorns, Cotswolds, Berkshires

For sale: 2 bulls 18 months, 1 bull 12 months, and 4 from 7 to 9 months; and females all ages. In Cotswolds a few good ewe lambs. Nothing to offer in Berkshires.

CHAS. E. BONNYCASTLE, P. O. and Station, Campbellford, Ont.

Willow Bank Stock Farm

Herd Established 1855. The great Dutch bred bull, Imported Joy of Morning -32070-, and Scottish Bannar -61023-, at head of herd. Young cows bred to the above sires; also bulls and younger heifers for sale. Very choice.

James Douglas, Caledonia, Ont.

Shorthorn Bulls—Ready for service. One will make a show bull. Also young things from Matchless, Crimson Flower, Miss Hamden, Rosemary, Diamond and Lady Fanny dams, the ges of Chancellor's Model. Prices to suit times. Come and see. ISRAEL GROFF, Elmira, Ont.

The Breeding of Colantha 4th's Johanna.

As this great cow now occupies such a prominent position under the "lime-light," it may be of interest to take a hasty glance at her pedigree, and discover, if possible, the source of her great producing power.

She is spoken of as a Johanna, although she possesses but about 3 per cent. of that blood. Neither in appearance nor in breeding is she a Johanna. She carries 25 per cent. of the blood of Colantha, which name she also carries in combination, but I have not yet heard it claimed that this was the source of her phenomenal production. We find no other like her in this line.

In her own are 6 1/2 per cent. of the blood of the great De Kol 2nd, but without her characteristics.

In contrast to these she carries 37 1/2 per cent. of the blood of Aaggie Cornelia 5th's Clothilde Imperial, which bull is the sire of both her dam and dam of her sire. Here we find not only the predominating blood, but also the family characteristics. Her broad, level back and square, level quarters are family characteristics, especially marked in the Clothilde and Netherland family. Through this channel we find many ancestors not only of similar appearance, but which possess the natural tendency to great production.

She traces four times to Netherland Prince, twice to Clothilde, and twice to Aaggie Cornelia 5th, a marvelous combination of great ancestors. The photograph of Colantha 4th so closely resembles the commonly seen picture of Clothilde, in form, color markings and all, that they might easily be taken for the same.

Johanna Rue 2nd, the dam of her sire, is more especially of the Netherland type, resembling very closely certain branches of the family, even to color markings.

I fully remember when Mr. Gillett came to Syracuse to select a bull to place at the head of the now famous Springdale herd—a tall, slender youth in whom was manifest at that time the characteristics which we all admire in the man—a clear comprehensive idea of what he wished to accomplish, and a direct, straightforward method of procedure. He stated in a frank, confidential manner just what he desired—his purpose in breeding, viz., great production, uniformity, especially referring to the desirable straight, graceful lines which he was so anxious to secure in his herd, and with these the strongest combination of blood of the best families and greatest individuals of the breed.

After a general review of the herd he went at his work systematically, looking over the various families and their records—the leading individuals therein, with their records, etc. He was then ready to return to the bull stable, and complete his selection. With great care he went over and under, front and rear of every good-looking youngster in the stable. Choice now centered on two very similar in appearance, and breeding, one not possessing the Aaggie cross. Another inspection of the individual ancestors to the dam's side of each, decided the selection in favor of Aaggie Cornelia 5th's Clothilde Imperial.

Mr. Gillett has frequently assured me that he had made no mistake—that for his success in breeding he was more indebted to this selection than to any other one transaction.—E. A. Powell, in Holstein Register.

TRADE TOPIC.

In nine cases out of ten the man who is well posted on veterinary matters can successfully treat an ailing horse, cow or other animal. In many instances veterinary doctors are not at hand, anyhow, so it is necessary for the stock-owner to rely entirely upon his own good judgment and knowledge. Every reader of this paper should know as much as possible about the common diseases of animals and the simple methods of treatment. A very handy practical little reference book on this subject can now be had free by writing to the Tuttle's Elixir Co., 147 Beverly St., Boston, Mass., mentioning this paper in your letter.

Image of a car crashing through a fence. Text: An automobile running wildly amuck will surely come to grief if it collides with the heaviest, strongest, stiffest wire fencing that can be erected— SAMSON - LOCK FENCING. A fence constructed in the Samson way is bound to be a superior article. Agents Wanted for this superior fencing. Easy to sell. Exclusive territory. Write to-day for our good proposition. LOCKED WIRE FENCE CO., Limited, LONDON, ONT.

High-class Shorthorns Royal Chief, a son of Mildred's Royal at head of herd. We are offering a few choice heifers of show-ring form. Pure Scot h. Terms reasonable. A. DUNCAN & SONS, Carleton, Ont.

Shorthorns & Leicesters I have a few cows and heifers for sale; also Leicester sheep different ages. Prices reasonable. JOHN LISHMAN, Hagersville Sta. & P. O.

Scotch Shorthorns

Our breeding females are very heavy milkers, also good individuals. For sale are a few young bulls and a few choice heifers, all from imported sires, and a number from imported dams. The imported Bruce Mayflower bull, Royal Bruce 55008, heads the herd. R. J. DOYLE, Box 464, OWEN SOUND, ONT.

Jerseys & Extra Choice Young Bulls For Sale, 3 and 5 months old, grandsons of the great Financial King, out of large, heavy-milking dams. Inquiries solicited. ARTHUR H. TUFTS, Box 111, Tweed, Ont.

Brampton Jerseys!

Select your stock bull or family cow from Canada's most famous and largest Jersey herd.

E. H. BULL & SON, BRAMPTON, CANADA.

STONEYCROFT STOCK FARM, St. Anne de Bellevue, Quebec.



(Adjoining the new Macdonald College.) Breeders and Importers of High-class Ayrshire Cattle, Clydesdale Horses, Yorkshire Swine and Collie Dogs. Anything for sale. We offer especially a few select young bulls to clear cheap. Orders booked for spring pigs. HAROLD M. MORGAN, Prop. E. BJORKELAND, Manager, Bell Phone connection.

Hillview Herd of Prizewinning AYRSHIRE CATTLE.

All animals bred and carefully selected to do, constitution, long teats and deep-milking qualities. Select animals of both sexes for sale at reasonable prices. For further information and prices write to A. KENNEDY & SON, Hillview Stock Farm, Vernon, Ont. Winchester Station, C. P. R.

O. M. Watt, St. Louis Station, Quebec, breeds of HIGH-CLASS AYRSHIRES Canadian and Scotch-bred. All of deep milking qualities.

SPRINGBURN STOCK FARM.—Ayrshire Cattle, Oxford Down Sheep, Berkshire Pigs. Young stock for sale. Buff Orington poultry, eggs \$1 per 13, \$4 per hundred; orders now being booked. H. J. WHITEKEN & SONS, Williamsburg P. O.

Trout Run AYRSHIRES and POULTRY

Imported bull calf, 2 August bull calves from imported stock, 1 May bull calf. Females all ages; heavy milkers and from heavy milking stock, with good teats. Also Shropshire ram lambs, Buff Oringtons, B. P. Books, B. Leg-horns, Mammoth Pekin ducks at \$1.25 each. Toulouse geese, \$6 per pair. Prices very reasonable, considering quality. For particulars write: William Thom, Lynessoch, Ontario. Trout Run Stock Farm.

AYRSHIRES FROM A PRIZE-WINNING HERD

Have some nice bull and heifer calves for sale at reasonable prices. For particulars, etc., write to Wm. Stewart & Son, Campbellford Sta. Ontario P.O., Ont.

AYRSHIRES Young bulls from producing dams and same sire, from 7 months up to 3 years. Rare good ones and will speak for themselves. W. DYMENT, Hickey Hill Stock Farm, Clappison, Ont. Dundas Station and Telegraph.

Ayrshires & Yorkshires

We expect to again import a few choice head. Our J. Eason, now in Scotland, is securing young bulls and females, bred from the best milking stock in Scotland. We would be pleased to fill your order at lowest living prices. Choice animals, either sex or any age, either home-bred or imp., always on hand. We bred and own the grand champion female of Toronto, 1906 and 1907, grand champion at Sherbrooke (Dom.), 1907, also the first prize 3-year-old cows at Toronto, Sherbrooke (Dom.), London, Ottawa and Norwood fairs in 1907. A few young sows due last of April. Long-distance phone, Campbellford. ALBX. HUME & CO., MMBIE, ONT.

Homestead Holsteins Yearling bulls and bull calves for sale, out of cows with records from 16 to 21 lbs., and sired by Rattie Bros.' famous bulls, Corneliuss Posch and Count Mercena Posch. Write for prices. G. & F. Griffin, Box 43, Burgessville, Ont.

HILTON STOCK FARM—Holsteins, Cotswolds and Tamworths—Present offering: Some young cows; a nice lot of young pigs; few boars six months old, and sows in pig. R. O. MORROW & SON, Hilton P.O. Brighton Tel. and Sta.

WHEN WRITING ADVERTISERS PLEASE MENTION THIS PAPER

Holsteins and Yorkshires Choice calves, either sex; also yearling bull. Orders booked for young pigs. Satisfaction guaranteed. W. A. Bryant, Cairngorm, Ont.

Boo Spavin

Cure the lameness and remove the bunch without scarring the horse—have the part looking just as it did before the blemish came.

Fleming's Spavin Cure (Liquid) is a special remedy for soft and semi-solid blemishes—Bog Spavin, Thoroughpin, Splint, Curb, Couped Hoof, etc. It is neither a liniment nor a simple blister, but a remedy unlike any other—doesn't irritate and can't be mistaken. Easy to use, only a little required, and your money back if it ever fails.

Fleming's Vest-Pocket Veterinary Adviser describes and illustrates all kinds of blemishes, and gives you the information you ought to have before ordering or buying any kind of a remedy. Mailed free if you write.

FLEMING BROS., Chemists,
75 Church Street, Toronto, Ontario

Holsteins and Yorkshires.



R. HONEY,
Brickley, Ontario,

offers a very choice lot of young bulls also boars and sows fit to mate.

SPRING BROOK HOLSTEINS AND TAMWORTHS.—Holsteins of richest breeding and highest production. Tamworths of best British blood and ideal bacon type. Herd headed by prizewinning Imp. Knowle King David Stock of all ages and both sexes for sale. Young sows bred to imp. boar. Write, or come and see: **A. C. HALLMAN, Breslau, Waterloo Co., Ont.**

RECORD OF MERIT HOLSTEINS



Herd 110 strong. Over 40 head now in the Record of Merit. Two of the richest-bred bulls in Canada at head of the herd. For sale: 16 bulls, from 1 month to 1 year of age, all out of Record of Merit cows and sired by the stock bulls.

F. D. HDE, Oxford Centre P.O. Woodstock Station.

LYNDALE HOLSTEINS!

Bull calves for sale out of cows with records of from 18 to 20 lbs., also 3 heifers coming 2, and a number of young cows in Record of Merit, bred to a grandson of Pietertje Hengerveld's Count De Kol.

BROWN BROS., LYN, ONTARIO

HOLSTEINS FOR SALE!

The undersigned are uniting their herds, and to make room must sell a number of cows and heifers, also several young bulls. 75 head to choose from. Come and see them, or write for prices and description.

E. & F. MALLORY, FRANKFORD P. O. Frankford and Belleville Sta.

MAPLE GLEN HOLSTEINS

Herd of 35 head with A. B. O. breeding, backed up by better tests of over 16 lbs. as a two-year-old to over 26 lbs. as a cow. A good herd to select from. Two spring bull calves on hand. A B. O. test of one is over 26 lbs. for dam and g. dam. Come and inspect the herd. Any animal will be offered for sale.

G. A. GILROY, GLEN BUELL, ONT.

HOLSTEINS

Two choice-bred bulls ten months old. Also calves for April and May delivery sired by imported Ykema Sir Posh 2nd (Johanna Bue Sarcastic), Ohio Improved Chester Whites. Largest strain bred in Canada. All ag.s. Express prepaid. Safe delivery guaranteed. **E. D. GEORGE, Putnam, Ont.**

FAIRVIEW HOLSTEINS!

For sale: Just now we have about a dozen cows and heifers, some of them in the R. of M., and all with official backing on both sides, in calf to the Toronto 3-times champion. Also a number of bull calves with official backing.

THOS. HARTLEY, DOWNSVIEW P. O. Weston and Downsview stations.

Maple Hill Holstein-Friesians

Bull calves from No. 1 dams, sired by bulls with great official backing. Write for prices.

G. W. Clemons, St. George, Ont.

"THE MAPLES" HOLSTEIN HERD

Young bulls fit for service. Bull calves. Also a few choice heifer calves.

Walburn Rivers, FOLDEN'S, ONT.

QUEEN CITY HOLSTEINS.

15 young cows due to calve during next 3 mos.; bred to bulls having high official backing. Orders booked for bull calves at moderate prices. A few bulls ready for service. Farm 7 miles north of Toronto, near the Metropolitan By. Write: **R. F. Hicks, Newton Brook, Ont.**

Evergreen Farm Holsteins—FOR SALE:

Bull calves 3 months old, from A. B. cows. Dam and sire's dam average from 20.55 lbs. as 3-year olds, to 22.0 lbs. as mature cows in 7 days; also young females bred to Sir Mercos Favorit.

F. C. PETTIT, Burgessville, Ont.

QUESTIONS AND ANSWERS. Miscellaneous.

TREES AS FENCE POSTS.

I want to build a new woven-wire fence on both sides of lane, from the house to the road, a distance of forty rods. I have maple trees, from 4 inches to 5 inches in diameter, and from one to two rods apart, along each side where fence is to go. Could the wire be nailed to trees instead of posts without injuring trees? **NEW SUBSCRIBER.**

Ans.—Spike 2 x 4 scantling to the trees, and staple the wire to these.

WEIGHT OF A GALLON OF MILK.

What is the standard weight of one gallon of whole milk?

YOUNG DAIRYMAN.

Ans.—10.28 to 10.36 pounds, the average being about 10.32 pounds. There is no standard weight for milk so far as we are aware. Other conditions being equal, the higher the percentage of fat, the lighter the milk per gallon, as fat is lighter than water, while the solids not fat are heavier.

DETERMINING SEX IN PIGEONS.

Could you tell me the way to distinguish male pigeons from females? I have been trying to find out the difference between them for some time.

B. C. E. W. M.

Ans.—It is sometimes rather difficult to determine the sexes in pigeons, and a novice can do little more than guess. Experts claim to be able to distinguish the male from the female in about 90 per cent. of the cases, but oftentimes they, too, are strangely deceived. It is not well to guarantee the sexes in selling unless you have mated the birds. The chief differences between the sexes are: The male bird has usually a larger and thicker neck. He struts more than the hen. The hen is smaller and usually of neater appearance about the head and neck, though sometimes she may be larger and more masculine than the male, all her actions stamping her as a cock bird. The bones about the vent in the hen are a trifle wider than in the male. When held outstretched, with his head in one hand and his feet in the other the male will sometimes drop his head downwards, while the hen shifts hers to one side.

FEEDING FROZEN WHEAT.

1. Is frozen wheat and bran, mixed equal parts, a good feed for a brood sow before and after having pigs?
2. Would there be any evil effects from feeding frozen wheat and bran, mixed equal parts, to a brood mare before and after foaling?
3. Is there any more strength in feeding bran wet than there is in feeding it dry to dairy cows?
4. Cows are scouring, please give cure.

M. V. L.

Ans.—1. Pretty fair, although bran is not so well digested by swine as by other stock. It is better, however, to use some bran than to feed wheat alone. It would be well, if possible, to introduce a little further variety by mixing in a little ground barley and an ear or two of corn. After farrowing, a small quantity of oil-cake meal would be good.

2. Not necessarily, although it is not good practice, as our veterinary editor would say, to use wheat so largely for equine stock. Half oats and the balance frozen wheat and bran should answer nicely.

3. No, although it is possible the bran might be digested a little better if soaked, but, ordinarily, we would not advise it.

4. First give a purgative of a pint and a half of raw linseed oil, follow with a tonic, as follows: Take powdered potassium nitrate, 2 ounces; powdered gentian, 1 ounce; powdered nux vomica, 1 ounce. Mix, and divide into twelve powders, and give one morning and night until done. Feed dry bran and oat chop, and warm the drinking water, limiting the quantity.

HOLSTEINS

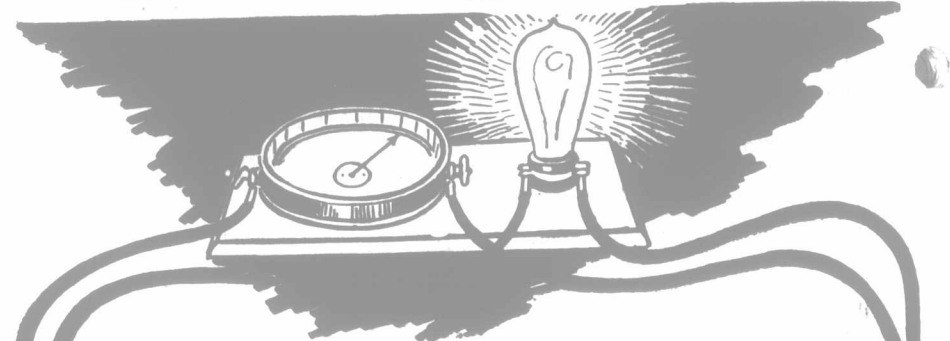
We must sell at least 25 cows and heifers at once in order to make room for the increase of our



large herd. This is a chance of a lifetime to buy good cattle at bargain prices. The best way: arrange to come and look the herd over. If you cannot, we will do our best for you by correspondence. Also a few young bulls. 100 head to select from Imported **Perkins Hengerveld**, son of Hengerveld De Kol world's best sire, head of herd. All leading breeds represented. **H. E. GEORGE, Crampton, Ont. Putnam station, near Ingersoll.**

Only Bull Calves

FOR SALE. **HOLSTEIN and AYRSHIRE.** Of the best performing strains. **GEO. RICE, Annandale Stock Farm Tillsonburg, Ont.**



A Battery—Not A Belt No Charging—No Acids or Vinegar

DR. LORENZ'S Body Battery is as far superior to the "Vinegar Belts" as sunlight is to tallow candles. It is an entirely new invention—different from any other device ever perfected for the cure of disease by electricity.

Dr. Lorenz's Body Battery is a dry cell battery of high power, arranged so conveniently that it may be worn all night if desired. It produces electricity for hours at a time without the use of acids or vinegar for charging. The current is smooth, even, regular, soothing, restful—without shock, sting or unpleasantness.

The strongest of "electric belts" cannot generate electricity enough to move the needle of a volt meter or flicker an electric light.



Dr. Lorenz's Electric Body Battery

is shown above connected to a Volt Meter (an instrument for measuring the strength of electric currents) and to an Incandescent Lamp. As will be noted, Dr. Lorenz's Body Battery shows very high in voltage and lights the lamp brilliantly. This display is arranged in our offices so that all callers may see the power of these perfect instruments.

The special feature of Dr. Lorenz's Body Battery, which will be appreciated by those now being treated by electricity, is that no charging is required. Each cell is a battery in itself and generates electricity. The current can be reversed without removing the battery from the body and changed in power by means of a regulator.

Sold on easy monthly payments if desired. Electricity is the road to health. Electricity cures where drugs fail. It takes the best apparatus to get the best results. Write for booklets which fully describe and illustrate Dr. Lorenz's Body Battery—a marvellous discovery and an entirely new way to fight disease.

**"Victor" Electric Body
Appliance Mfg. Co.**

127 Victoria Street
TORONTO, - - Canada.

SUBSCRIBE FOR "THE FARMER'S ADVOCATE AND HOME MAGAZINE."

More Terrible Than War!

More terrible than war, famine or pestilence is that awful destroyer, that hydra-headed monster, Consumption, that annually sweeps away more of earth's inhabitants than any other single disease known to the human race.

"It is only a cold, a trifling cough," say the careless, as the irritation upon the delicate mucous membrane causes them to hack away with an irritable tickling of the throat. When the irritation settles on the mucous surface of the throat, a cough is the result. To prevent Bronchitis or Consumption of the Lungs, do not neglect a cough however slight as the irritation spreading throughout the delicate lining of the sensitive air passages soon leads to fatal results. If on the first appearance of a cough or cold you would take a few doses of

Dr. Wood's Norway Pine Syrup

you would save yourself a great deal of unnecessary suffering. Dr. Wood's Norway Pine Syrup contains all the life-giving properties of the pine trees of Norway, and for Asthma, Croup, Whooping Cough and all Throat and Lung affections it is a specific. Be sure when you ask for Dr. Wood's Norway Pine Syrup to get it. Don't be humbugged into taking something else. Price 25 cts.

Miss Lena Johnston, Toledo, Ont., writes: "I have used Dr. Wood's Norway Pine Syrup for throat troubles after taking numerous other remedies, and I must say that nothing can take the place of it. I would not be without a bottle of it in the house."

RAW

SHIP TO WE PAY ALL EXPRESS CHARGES

E. T. CARTER & CO.
83-85 Front St., E., TORONTO CANADA.

Extra LYNX, SPRING RATS AND FOX.
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The Oldest and Most Reliable

Hide, Wool, Skin and Fur House in Canada

FURS

Sheep Breeders' Associations.

American Shropshire Registry Association, the largest live-stock organization in the world. Richard Gibson, President, Delaware, Canada. Address correspondence to MORTIMER LEVERING, Secretary, Lafayette, Indiana.

FAIRVIEW SHROPSHIRE OFFERINGS

Low rams, show ewes and breeding stock. Of the best of breeding and best in quality. For 25 years the flock is known as the Producer of the highest type of sheep. If you need a choice ram, or a few good ewes, write for circular and tempting prices to J. & D. J. CAMPBELL, Fairview Farm, Woodville, Ont.

SHROPSHIRE SHEARLING EWES

for sale, bred to high-class imported Buttar ram.

GEO. HINDMARSH, AILSA CRAIG, ONTARIO.

Shorthorns and Berkshires.
Two-year-old bull and several fine bull calves. Boars ready for use. January pigs ready to ship.
John Racey, Lennoxville, Que.

QUESTIONS AND ANSWERS. Miscellaneous.

REGISTERING AYRSHIRES.

Some time since I wrote you, asking who I should apply to for the registration of Ayrshire stock.

Ans.—Write "Accountant," National Live-stock Records, Department of Agriculture, Ottawa, asking for the number of blank forms of application required for registering Ayrshires. The rules and regulations are printed on these forms.

A SCARED HORSE.

Who is liable in following case: A, driving home at night, meets B on bicycle. Night is dark, and B is wearing a white handkerchief around his neck, at which horse gets scared, puts buggy in ditch, and runs away. Buggy is broken, and A gets hurt. Horse has always been quiet. CONSTANT SUBSCRIBER.

Ontario.
Ans.—Judging from the foregoing statement of facts alone, we would say that A will have to bear his loss himself.

VALUES OF MIXED GRAIN LAST OCTOBER.

What were the following grains worth in the month of October, third week: Peas and oats (mixed), speltz and oats (mixed), oats and barley (mixed), and wheat (fall wheat), all market grains?

Ans.—Of course, there is no such thing as quotations on these mixtures; no one ever heard of such a thing. Everything would depend upon the percentage of each. Our Montreal market correspondent writes that only one car of speltz was seen in Montreal in 1907. It sold at about \$22.50 per ton. About the third week of October, oats were selling, in store there, at 57c. for No. 3, and 58c. for No. 2; peas, 98c. for No. 2, and barley, 58c. for feed barley, and 75c. to 85c. (and perhaps a little more) for malting barley.

STRAWBERRIES FOR CANNING.

What do you consider the best strawberry for preserving or canning? I do not care for a large or early berry, but one that is firm and a good keeper.

E. F.
Ans.—We have tested over four hundred varieties of strawberries at the College, and have made careful note on the canning qualities of a number of the best kinds. We find that the medium-size, firm, dark, rich-colored berries are the best for canning. One which we count among the best is Warfield, but, unfortunately, this variety does not succeed well upon light sandy soils, although on heavy soils, or in moist seasons, it is one of our most productive varieties. It is imperfect-flowered, and requires some other variety grown with it to insure fertilization of the blossoms and production of a full crop. An excellent one for this purpose is the Splendid, another good dark variety. Senator Dunlop and Ruby are also good canning berries. H. L. HUTT.

O. A. C.

LIFE TENANT AND TIMBER.

A man dies, leaving a widow and family. The widow has a life lease of the farm, and at her death it is to be sold and equally divided among the children. One son works the farm.

1. Has he any right to cut and sell wood or timber from this farm?
2. The widow is one of the executors. If she allows him to sell wood, can the heirs make the executors pay for wood which has been cut and sold off the place?
3. If the heirs can make the executors pay for this wood which has been sold off the farm by the son, can the executors hold him responsible for the amount?

Ontario.
Ans.—1. No; unless the widow's life tenancy is "without impeachment of waste" and the son is simply working the farm for her.
2. We assume that the "executors" are also trustees, and would answer, yes.
3. Probably not. We would add that, assuming the widow has not the legal right to cut and sell wood and timber, and the children object to her doing so, they ought not to wait for a possible recovery of damages in the future, but should take steps (legal proceedings, if necessary) to prevent such waste at the outset.



"HINGE-STAYS" MAKE DILLON TWICE AS STRONG

Short, stiff, hard, steel wire stays make a "hinge-like" joint at every lateral wire on the Dillon fence. These "Hinge-stays" give our fence a greater degree of elasticity—enable it to withstand greater strain. They set like, and really are, hinges—make our fence swing or spring back into shape after receiving a heavy blow, or the unusual pressure caused by a furious bull or other animal endeavoring to push his way through to freedom. Catalogue tells more about this "twice as strong" fence.

The Owen Sound Wire Fence Co., Limited,
Owen Sound, Ont.

DILLON HINGE-STAY FENCE

MOUNT PLEASANT HEPD OF TAMWORTHS AND HOLSTEINS.—For sale: Pigs of either sexes from 6 weeks to 3 years; also 13 bull and heifer calves from 1 week to 1 year old. 'Phone in residence. **Berttram Hoskin, The Gully P. O.**

Duroc-Jerseys Boars fit for service. Sows ready to breed. Several sows in pig, also younger ones. Imported Canadian Boy 19097 heads our herd. **MAC CAMPBELL & SONS, Harwich, Ont.**

EAST BANK HERDS
Large English Yorkshire and Berkshire Swine, Shorthorn Cattle, Barred Rock Poultry.
Am offering bargains in choice suckers at very moderate prices, bred from choice prize-winning stock. Can book orders for immediate delivery in any of the above, also for succeeding months. Barred Rock eggs 75c. for 15, and \$3 per hundred. Try me for a bargain in choice stock. Satisfaction guaranteed. 'Phone connection.
IRA L. HOWLETT, Keldan.



MONKLAND YORKSHIRES

are the easily fed, quick maturing kind. The sort the farmers want.
All ages for sale. 100 sows bred now.

JAMES WILSON & SONS, FERGUS, ONTARIO.

Newcastle Tamworths and Shorthorns
For Sale: 100 pigs, both sexes, all ages. Sows from 10 months to 2 years, bred to Imp. Chelerton Golden Secret, all descendants of Colwill's Choice and Newcastle Warrior, both Toronto champions. Also two choice Shorthorn dams, ready for service, from choice milking sows, and sired by a son of Imp. Joy of Morning.
A. A. COLWILL, NEWCASTLE, ONT.

Glenburn Herd of Yorkshires
Winner of gold medal three years in succession. 6 young boars from 6 to 8 months; also 75 young sows, from 6 to 12 weeks old.
David Barr, Jr., Box 3, Renfrew, Ont.

Elmhurst Berkshires

Our large brood sows are all imported Stall Pitte Middy, Imp (18856), winner of first at Oxford, 1907, heads the herd. All stock shipped by us as represented or money refunded. Express prepaid. Large stock to choose from. Write us.

H. M. VANDERLIP,
Importer and Breeder, CAINSVILLE P. O., BRANT CO.

Yorkshires and Tamworths—Either breed, any age, both sexes; sows bred and ready to breed. Yorkshires bred from imp sires and dam. Tamworths from Toronto winners. Pairs not skin. As good as the breeds produce.
CHAS CURRIE, Morrish P. O. Schaw Sta. C.P.R.

Meadowbrook Yorkshires.
Young stock of both sexes. A number of sows old enough to breed, all sired by Imp. Dalmeny Topman. Everything guaranteed as represented.
J. H. SNELL, Hagersville P. O. & Station.

LARGE ENGLISH YORKSHIRES.—We have a limited number of choice young pigs for sale, bred from our choicest sows and got by the imported boars, Dalmeny Joe 13577 and Broomhouse Beau 14514. Pigs from the latter won all the first prizes at the Ottawa Fat Stock Show last March for the best dressed carcasses and sweepstakes over all breeds or grades. We guarantee satisfaction in all mail orders.
JOSEPH FEATHERSTON & SON, STREETSVILLE, ONT.

SUNNYMOUNT BERKSHIRES!
Boars fit for service sows safely in pig, young sows 4 months old, young sows and boars 3 months old, imported in dam.
JOHN McLEOD
Importer and breeder, Milton P. O. and Sta., C.P.R. & G.T.R.

Willowdale Berkshires are unsurpassed for quality and breeding. Young stock, all ages, for sale reasonable. Satisfaction guaranteed. Long distance telephone in residence.
I. J. WILSON, Importer and Breeder, Milton P. O. and Station, G.T.R. and C.P.R.
When Writing Mention this Paper.

FAIRVIEW BERKSHIRES
Bred from imported and Canadian-bred sires and dams, and bred on p.iewing lines. My brood sows are large, choice animals. Young stock of both sexes. Some sows bred to imp. boars. **HENRY WASON, SCARBORO P. O.** Street cars pass the door.

Maple Grove Yorkshires.
Animals of choicest breeding and individual excellence compose our herd. We have them both imported and Canadian-bred. Our present offering includes young sows due to farrow in April and May. Boars fit for service. A fine lot of boars and sows from 3 to 5 months old and, in fact, pigs of both sexes—any age. Everything guaranteed as represented. Price reasonable.
H. S. McDIARMID, FINGAL P. O., SHEDDEN STATION

LARGE ENGLISH YORKSHIRES
Pigs of the most approved type of both sexes, all ages, for sale at all times. We have more imported animals in our herd than all other breeders in Canada combined. We won more first prizes at the large shows this year than all other breeders combined. We won every first but one and all silver medals and Boston prizes at Toronto and London, and at St. Louis we furnished all the first-prize hogs in the breeding classes except two; also supplied both champion and grand champions. Prices reasonable.
D. G. FLATT & SON, Millgrove, Ont.

Large English Berkshires
for sale from imported stock. Sows with pig and pigs for sale. All ages. At reasonable prices. Guarantee satisfaction. Boars and sows delivered at Woodstock station, C.P.R. or G.T.R.
JOSHUA LAWRENCE, OXFORD CENTER, ONT.

PINE GROVE BERKSHIRES!
Bred from imp. and Canadian-bred sires and dams, which are of choicest breeding. Stock, all ages, for sale. Some Imp in dam. Guaranteed as represented.
W. W. BROWNIDGE,
Milton, C.P.R. Ashgrove P. O. Georgetown, G.T.R.

Yorkshires—Boars ready for service; sows ready to breed, and bred; young pigs just weaned and ready to wean. Cotswold and Shropshire rams, yearlings and lambs, registered. **GEO. M. SMITH, Hagersville, Ont.**

LEADER fence Lock

Newer and Stronger

Think of the strongest lock of which you know on a woven fence and multiply its strength two fold. You then have an idea of the strength of the Leader lock—the new lock with the double grip (single grip locks have hitherto been considered good enough for woven fences).

The "Leader" is a brand new No. 9 hard steel wire fence—more durable and a better investment than ever before offered.

TAKE ORDERS FOR US
Write for money-making proposition, covering our complete line of farm and ornamental fences and gates.

Frame & Hay Fence Co., Ltd.
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STILL BETTER IN 1908

UNITED STATES Cream Separators.



The United States has always, since its introduction, separated more cream from the milk, and has done it more thoroughly and quickly than any other separator. The figures of the public national and international tests demonstrate this.

THE 1908 MODELS HAVE IMPROVEMENTS

which make the handling of milk still easier, quicker and more profitable. They do their work more efficiently, more economically than any other, and are built to wear. In spite of the fact that the demand is greater than ever before, and that dairymen everywhere are exchanging other makes for the reliable and efficient United States, the standard separator, we are prepared to make prompt deliveries anywhere.

Write to-day for "Catalogue No. 110" and any desired particulars
VERMONT FARM MACHINE CO., Bellows Falls, Vt.

Distributing warehouses at: Chicago, Ill., La Crosse, Wis., Minneapolis, Minn., Kansas City, Mo., Omaha, Neb., Toledo, O., Salt Lake City, Utah, Denver, Colo., San Francisco, Cal., Spokane, Wash., Portland, Ore., Buffalo, N. Y., Auburn, Me., Montreal and Sherbrooke, Quebec, Winnipeg, Man., Hamilton, Ont., Calgary, Alta.

U S U

QUESTIONS AND ANSWERS.
Miscellaneous.

CLOVER-HAY TEA FOR CALVES

I send a recipe for feeding calves to prevent scours: Take a good handful of clover hay and boil a quarter of an hour to make a strong tea, to which add, in proportion, three parts milk to one of tea, and feed while warm. We have used this for thirty years, and have never known it to fail, and we use a separator, but never had any trouble; this we feed until the calves are three months old.

READER.

CAPACITY OF RUNWAY.

I have been reading "The Farmer's Advocate" for the last thirty years; constantly for the last eight or more, and like it very much. Since it is published every week, I do not know where I could get so good a farm paper.

Could as much water possibly flow through a runway sixty feet wide on top and forty-five in bottom and twelve feet deep, as would if it was sixty feet wide all the way down, or how much difference would there be?

HARD TO CONVINCe.

Ans.—If the fall in the runway is the same in both cases, it is impossible for as much water to run through the smaller runway as through the larger. The area of the latter is 720 square feet, and that of the former 630. The latter number is just 12.5 per cent. less than the larger, but this does not quite represent the difference in the amounts of water that will flow through the two canals. There is a little less friction, volume for volume, in the smaller canal than in the large one; hence, the mean velocity of the water in the smaller is a shade greater than in the larger. Hence, the difference in flow will not be 12.5 per cent., but 12.35 per cent., when allowance for the difference in friction has been made according to established formulae.

WM. H. DAY.

PROPAGATING GOOSEBERRIES AND CURRANTS.

When should cuttings from the currant (red and black varieties) be taken to make plants for another year; also gooseberry cuttings? What time in the spring should they be cut, and from the old or young wood? I would like to know the particulars, and would be very much obliged to you if you will tell me, and how to treat the cuttings during the season.

Ans.—Currants, both red and black, may be propagated readily from cuttings. These are best taken in the fall, and should be stored in sand or soil in the cellar, where the lower end will callous over before spring, or they may be planted directly into nursery rows, if the ground is well drained. Cuttings taken in the spring are less likely to take root, although, if taken early you may get a fair percentage of them to root this spring, if conditions are kept favorable for them.

The gooseberry does not root from cuttings nearly so readily as the currant, although some varieties, such as Red Jacket, strike fairly readily from cuttings. Gooseberries are best propagated by means of mound layering. In this way the bushes are banked with earth a foot or so high, forming a mound into the bush. This is done in the latter part of July or the first of August, as soon as the fruit is off and the new canes have pretty well made their growth. By the following spring most of the shoots will have taken root, and the bush can be cut apart, and the plants transplanted into nursery rows. With the English varieties of gooseberries, it is best to leave them in the mound for a couple of years, as they root much more slowly than the American varieties.

In making cuttings of any kind, the strong, young shoots should be used, and should be cut six or eight inches in length, close to a bud at the base of the cutting. These should be planted in nursery row, six or eight inches apart, and the soil packed firmly about the base of the cuttings. They should be kept well cultivated to conserve soil moisture and enable them to make a good growth. Cuttings of this kind should make thrifty plants fit for transplanting in one or two years, depending upon the nature of the soil and the attention given them.

O. A. C. Guelph. H. L. HUNT.

NO PAY TILL CURED



EVERYDAY MIRACLES OF ELECTRICITY

Take electricity if you want to get well. It's a lot easier to take than drugs, and it cures where drugs don't.

To cure anything you must help Nature. Nature will cure you when she has the power. This power is electricity. You see, electricity runs every part of your body.

Most of all the ailments of man can be traced to the failure of breaking down of the nerves, stomach, liver, kidneys, heart and digestive apparatus. The reason any organ fails to do its work properly is because it lacks motive power—electricity. Restore that force where it is needed and pain and sickness will disappear. I do this with my Electric Belt.

It saturates the nerves with a soothing stream of electricity, and they carry the force to every part of your body, giving strength and nourishment where it is needed. It removes the cause of disease.

My Electric Belt does this while you sleep. It saturates the nerves with its glowing power, and these conduct the force to every organ and tissue of your body, restoring health and giving strength to every part that is weak.

MR. WM. A. McCASKILL, Burk's Falls, Ont., says:—"Your Belt has done me a wonderful lot of good. I have not used it now for three weeks and I have had no more of my troubles."

MRS. CHAS. HOBBS, Box 425, St. Catharines, Ont., says he is entirely cured of Sciatica, and gives all credit to my Belt.

Drugs have had their day. They belong to the mystery and superstition of the past. No drug ever cured disease; it simply changes symptoms.—Bernarr Macfadden, in "Physical Culture."

MRS. HUGH KERR, Paris Station, Ont., says:—"Your Belt cured me when doctors failed. What more can I say?"

Nature is the greatest doctor on earth. When she can't cure it is because she needs aid. Now, most people have an idea that this aid is drugs, and when they get sick or suffer from pain of any kind they proceed to dope their stomachs with the stuff that is sold for medicine. That doesn't help any, in fact, it does a great deal of harm. The dope that you put into your stomach is poison, and poison weakens the organs and nerves of your body. What Nature needs is electricity.

MR. C. W. WALTERS, St. Catharines, Ont., says it cured him from "Lumbago." He values it very highly and is willing to recommend it to any one.

MR. JAS. WINDSOR, Athens, Ont., says there is nothing to equal Electricity for Rheumatism.

If you are skeptical, all I ask is reasonable security for the price of the Belt, and you can

PAY WHEN CURED

FREE TO YOU—Get my 80-page book describing my Electric Belt, with illustrations of fully-developed men and women, showing how it is applied. This book tells in plain language many things you want to know, and gives a lot of good, wholesome advice for men.

If you can't call, I'll send this book, prepaid, free, if you will enclose this coupon.

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