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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

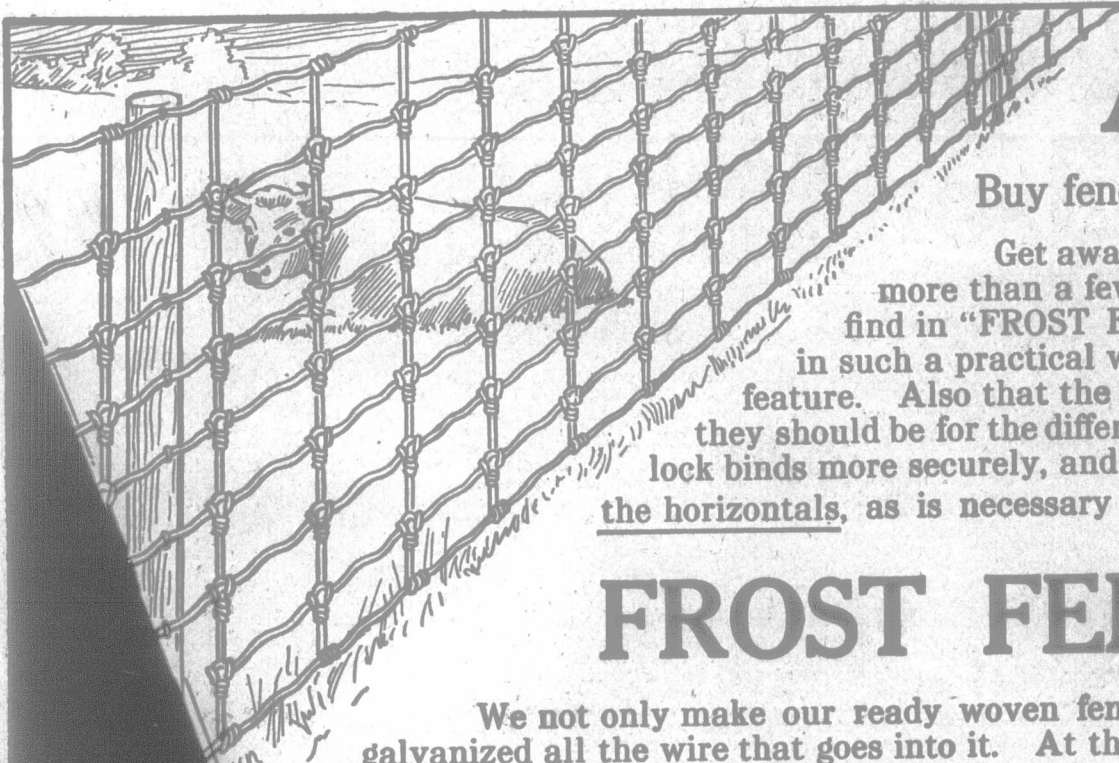
PERSEVERE
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* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE. *

VOL. LI.

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LONDON, ONTARIO, JANUARY 27, 1916.

No 1218



Always on the Job

Buy fence and protection at the same time.

Get away from the idea that wire fence is nothing more than a few wires fastened together; because you'll find in "FROST FENCE" that the wires are put together in such a practical way that "SERVICE" is the outstanding feature. Also that the spacings of laterals and stays are just as they should be for the different styles. You'll find that the "FROST" lock binds more securely, and yet, does not put a weakening kink in the horizontals, as is necessary in other ready woven fences.

FROST FENCE FIRST

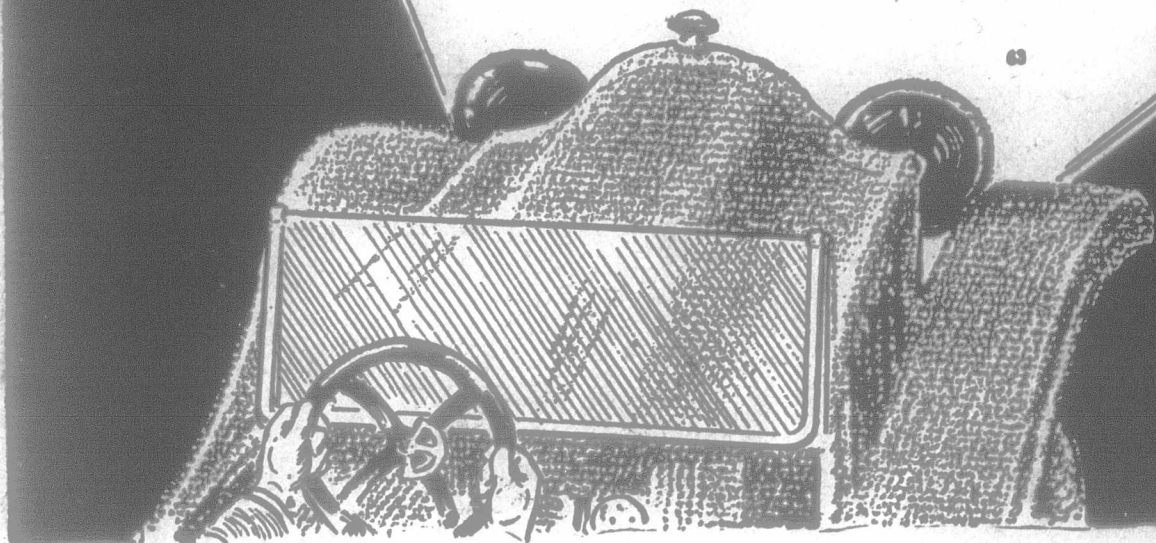
We not only make our ready woven fence; but for four years we've made and galvanized all the wire that goes into it. At that time we installed complete wire mills, believing that we were equipped for ten years at least; but the immense popularity of "FROST MADE" Wire has made it necessary to put up another Mill that will double the capacity. This new Mill is now ready for operation.

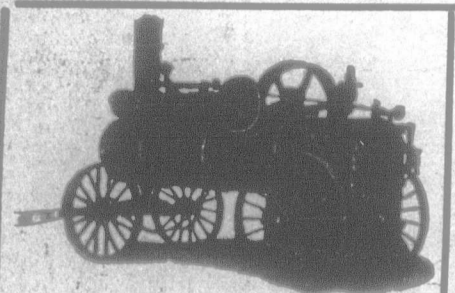
That is why we know FROST WIRE is good, and that it has the proper hardness, the full 9 gauge and just the amount of galvanizing that will best withstand the rust and still not be so heavy that it will crack off.

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A smooth running, dependable motor, that will yield you the maximum power at minimum cost, day in and day out, all the year round.

THE GILSON ENGINE DOMINATES THE FIELD

A Gilson Hylo Silo will pay for itself the first six months you use it. Thereafter it will continue to make money for you, year after year, at no additional expense. The Hylo Silo sets newer, higher standard in silo construction. The material used is Imported Long Leaf Southern Yellow Pine—the one wood endowed by nature with all the requisites of silo service. This wood costs twice as much as the woods used by other manufacturers. The doors are all interchangeable—perfect fitting in a reinforced door frame, with patented lock. The staves are tongued, grooved and bevelled on both sides and ends, making a perfect self-draining joint. The Hylo Silo is truly called **THE MONEY-MAKER and THE MORTGAGE LIETER.**

We guarantee every Gilson Ensilage Cutter to cut and elevate more ensilage with the same power than any other blower cutter. A 4 h.-p. engine will operate the small size successfully. The Gilson Cutter is made entirely of steel and iron with the exception of the feed table. The main frame is a solid piece of semi-steel—the bearings cannot get out of alignment, whether the machine has been used one year or ten years. The Gilson Ensilage Cutter is the result of immense resources and facilities focused in a steady effort toward improvement. That is why there is no comparison between the Gilson Cutter and other makes, and why the maximum output of the Gilson factory is sold out every year long before the corn-cutting season is over.

MR. G. MORGENROTH, of Tavistock, Ont., writes: Gentlemen,—I have found my 8 h.-p. Gilson Engine, Gilson Ensilage Cutter and Gilson Hylo Silo to be indispensable, and I believe that each represents the greatest value in its line. I have had my Gilson Engine three years, and it has given me such perfect satisfaction that last year I purchased an N-13 Gilson Ensilage Cutter, and a 12 x 36 Gilson Hylo Silo. We filled our silo in 10 hours, taping one shaft over the other, and the engine handled the cutter with ease. We found it impossible to plug the pipe, although we tried. I have no waste in my silo, and I have no trouble in getting the ensilage loose from the walls, and it does not freeze more than two inches, while in cement silos I have seen it frozen a depth of four feet. My ensilage is sweet, and of a nice color, while ensilage I have seen from cement silos is not as nice in color, and is sourer than mine.

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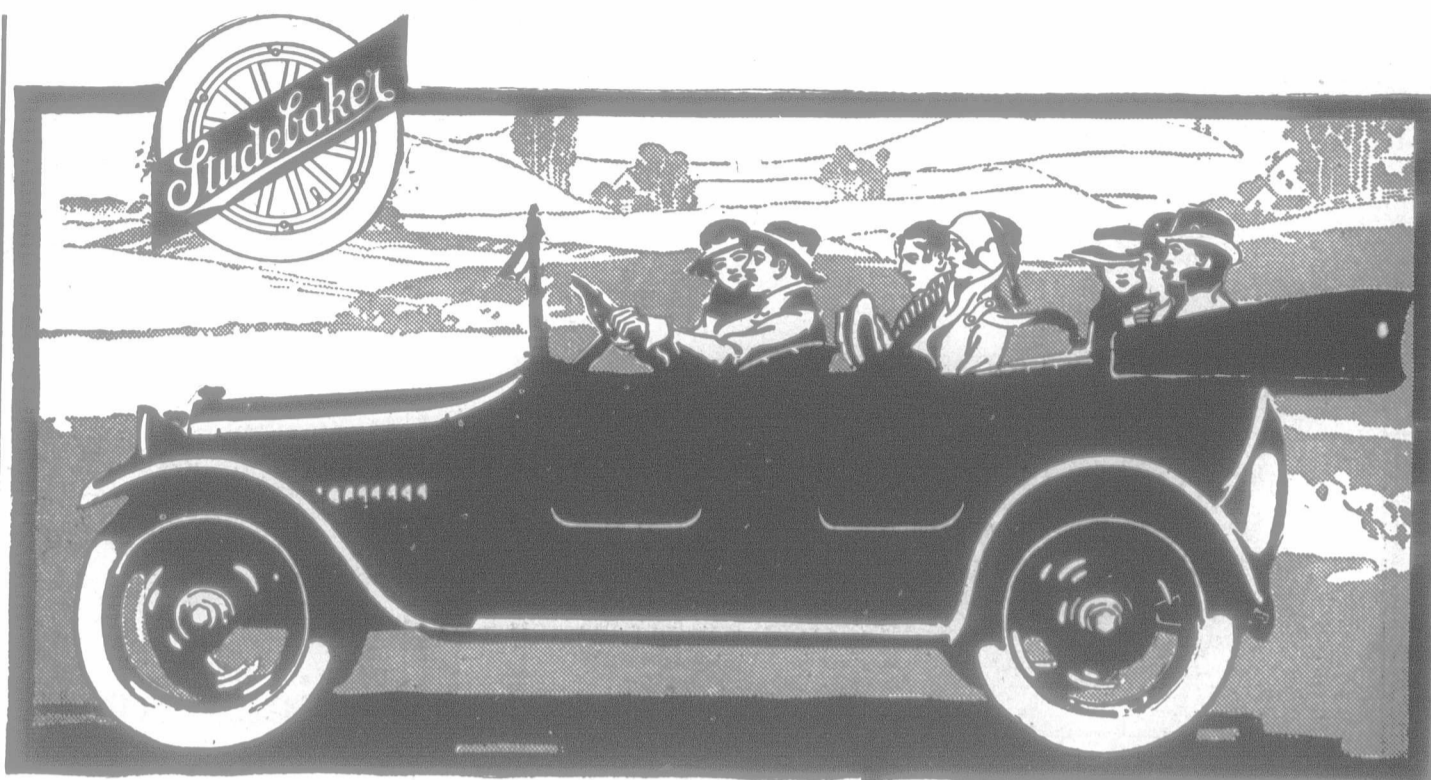
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Gas tank transferred from the cowl to rear of chassis

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DIVIDED front seats that are adjustable fore and aft to the passenger's comfort

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Overlapping windshield, completely storm-proof

Instruments even more conveniently arranged on dash, indirectly lighted.

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The name "Simonds Crescent Ground" on a cross-cut saw, means that the saw will cut 10% more timber, same time and labor being consumed, than any other brand of saw made to-day,—this we guarantee.

This is a broad statement but one which we stand behind. No saw has yet been returned owing to its having failed to fulfill the above guarantee.

The advantage of the Crescent Grinding, in Simonds Cross-Cut Saws, is that it prevents binding in the kerf and enables the operator to push as well as pull the saw—points experienced sawyers appreciate,

Always buy a saw with a sharp cutting edge—not a soft saw—because the former lasts longer and keeps its edge better.

Simonds Steel is the only steel which we are sure, will take a temper to hold a cutting edge longer than the ordinary saw.

The illustration shows a Simonds Cross-cut Saw, No. 325, with a hollow back instead of a straight back.

When you buy a saw, it will pay you to get a Manufacturer's Brand Saw, with the name "Simonds" on the blade, at about the same price as you will pay for a low-grade special saw.

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Solid 14 K. gold pen, large hard rubber holder, and money back if you are not satisfied.

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For Large or Small Growers, 1 or 2 rows

Opens furrow, drops seed any distance or depth required, puts on fertilizer (if wanted), covers up, marks next row. Accurate, automatic and dependable. Operated by one man. Furrow is opened directly under axle and seed is dropped in plain sight of operator. Made of steel and malleable iron, assuring long life and few repairs.

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Our lime stone is highest grade in Canada.

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When you send your order in to any Page branch, it's just as if you paid a personal visit to the big Page factory, except that you could then see with your own eyes how carefully we make fence. Enormous output, modern methods, direct selling—that is the secret of why we can offer you fence that's properly made at prices little, if any, higher than that "cheap," defective fence that's dear at any price. Surely some of the hundreds of miles of Page Fence that has been stretched across Canada can be seen in your neighborhood. Find it, examine it, see how uniform are the spaces between the uprights, note how free it is from any suggestion of loose wires, how strong and rigid the locks, how staunch and true and tight it remains after years of service. Orders should be mailed to the nearest Page branch: with cash, cheque, bank draft or money order. We make immediate shipment, and pay freight if you order \$10.00 worth.

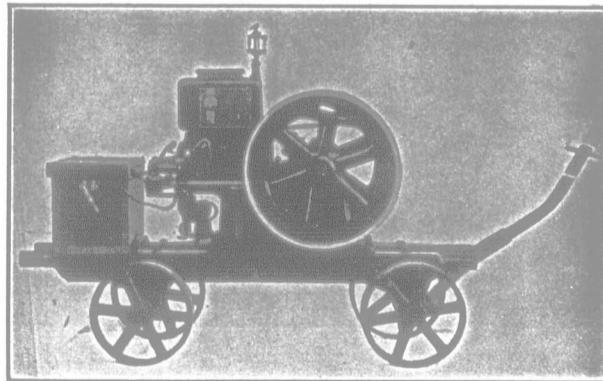
No. of bars	Height	Stays inches apart	Spacing of horizontals	Price in Old Ontario
6	40	22	6-1-7-8-9-9	28
7	40	22	5-5-7-7-8-8	30
7	48	22	5-6-7-9-10-10	31
8	42	16	6-6-6-6-6-6	37
8	47	22	4-5-5-7-8-9-9	35
8	47	16	4-5-5-7-8-9-9	38
9	48	22	6-6-6-6-6-6-6	40
9	48	16	6-6-6-6-6-6-6	43
9	52	22	4-4-5-5-7-8-9-9	40
9	52	16	4-4-5-5-7-8-9-9	43
10	48	16	3-3-3-4-5-7-7-8	45
10	48	12	3-3-3-4-5-7-7-8	49
10	52	16	3-3-3-4-5-7-8-9-9	45
11	55	16	3-3-3-4-5-7-8-9-9	49

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Direct from the Factory to the Farmer

Monarch Gasoline Engines

1 1/2 to 35 Horse Power

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1 1/2 H.P. Horizontal Hopper Cooled

This engine built specially for small jobs around the farm and in connection with our intermediate pulley takes care of the churning, washing, pumping, etc. Being mounted it is easily moved from place to place.

Read this letter received by Canadian Engines, Limited, from their Eastern Sales Agents

The Frost & Wood Co., Ltd., St. John, N.B. Clifton, Gloucester, Co. N.B., Dec. 13th, 1915. Dear Sir—In regard to the Monarch Engine purchased through you, I would like to say a few words as I may not have a chance again. I have used it two years now, and every day I run the machine I like it better. In fact I think it's the best thing I ever saw. I threshed six weeks this fall, and I just kept a record of its work for fun. In the six weeks I just made an average of 403 bushels a day, on an average of 2 gallons of gasoline a day, and the engine never missed an explosion in the six weeks. If this can be beat by any of the other makes of engines I am ready to eat my shirt.

I am entirely satisfied with the engine and would not take my money back to-day. You can publish this letter in any of your engine catalogues, and I am ready to prove what I said any old time. Yours, (Sgd.) Jas. G. Powers, Clifton, N. B.

Write for catalogue and prices to—**Canadian Engines Ltd., Dunnville, Ont.** FROST & WOOD Co., Limited, exclusive sales agents east of Peterboro, Quebec and the Maritime Provinces. Good live agents wanted in unrepresented territory.



The milk in the pail the cow kicks over is lost forever

AND the butter-fat that goes into the can through the skim-milk spout of a cheap, inferior or worn-out cream separator is just as surely lost as the milk in the pail the cow kicked over.

If you are trying to get along without a cream separator; or with an inferior or worn-out machine, you are losing butter-fat right along and butter-fat is money.

Get Your DE LAVAL Now—Right Away

every day you use it it will be paying for itself out of its own saving.

If you haven't the spare cash right now that need not hinder your immediate purchase.

We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at time of purchase and the balance in several installments, so that a De Laval really pays for itself while you are using it and getting the benefit from it.

Let the De Laval start saving cream for you right now while butter and cream prices are highest. See the nearest De Laval agent at once, or if you do not know him, write us direct for any desired information.

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LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole distributors in Canada of the famous De Laval Cream Separators, and Alpha Gas Engines. Manufacturers of Ideal Green Feed Silos. Catalogues of any of our lines mailed upon request.

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"More Bread and Better Bread"

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

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LONDON, ONTARIO, JANUARY 27, 1916.

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EDITORIAL.

All-Britishers are in favor of tightening the blockade on Germany.

Clover seed promises to be scarce this spring. It might pay to buy early.

Too much farm work is done without previous planning. This means more work.

In 1916 farmers will be able to practice "self help"; in fact they will have to practice it.

Nothing of value on the farm is achieved without work. Plan to lighten labor as much as possible.

If the grain you are saving for seed is not of a heavy-yielding variety, look around for seed of the best kind.

It looks as if Ontario dairymen would have to insist upon cream grading, or take second place in the market for high-class butter.

The life of the Canadian parliament should be extended. No thinking Canadian would clamor for an election under present conditions.

There are two reports in this issue which will interest our readers: Ottawa Winter Fair and the Ontario Fruit Growers' Convention.

Did you ever stop to think that increased production may not mean increased profit? It is always well to consider the cost of production.

One of the best farm managers we have known says: "I pay a good wage and I expect good work." He doesn't believe that it ever pays to cut wages down.

The stable cannot be the best stable without ample means of ventilation. E. S. Archibald, Dominion Animal Husbandman, tells how to ventilate it in this issue.

"Never buy anything till you need it," was a piece of advice that a practical farmer emphasized at the annual meeting of the Experimental Union. It is sound advice.

We are going to publish some plans for farm buildings. If you have a good barn or a convenient house send us a carefully-drawn plan, showing dimensions and layout, and accompany it with a written description. Good photographs of the finished structures will also be suitable.

Geo. H. Clark, Seed Commissioner for Canada, stated, at the Experimental Union Convention, recently held, that he did not believe that the capital invested in farming in Canada was yielding more than three per cent. annually, and yet some people seem to think farmers are getting rich too fast.

The man who dreamed that experimental work was about finished should have had his head read. Just think, there is a difference of opinion on sweet clover, thick vs. thin corn for silage, the best variety of oats, and a hundred and one other things. The field for experimental work will never be exhausted.

Uniformity Lacking.

There seems to be too much lack of uniformity in the different classes of farm products marketed; at least, the purchaser is often able to keep the price down because the goods are not uniform in quality. This is one feature in which our producers could aid in strengthening the demand, and certainly increase prices on many commodities sold. The buyer will pay a premium, every time, for the high-quality product. If fruit is being sold, it should be carefully graded, and that of a certain grade should be as nearly identical, from one end of the country to the other, as it is possible to get it, and, every time, it would pay to keep the quality for grade high. In selling eggs from the farm, grading pays. If the eggs are carefully selected according to size and color and sold in this manner, the total sum of money received for them in one year will be higher than if they were all thrown in indiscriminately without attention being paid to these matters. It has been amply proven that grading cream is the only sure way of making the best butter. Denmark has proven that uniformity in the bacon hog pays, for by it the Danes captured the British market, and their bacon sold at a premium on that market. If the farmer has a carload of potatoes to sell, or if a number of neighbors wish to club together and ship a carload or more tubers, the smaller price must always be taken if the carload is made up of several varieties and is not uniform in size, color and quality. Even the breeder of pure-bred stock makes a better name for his herd if the calves in that herd each year show uniformity in type, size and general conformation. It would pay every producer to study uniformity in all his products, from the grain which he grows to the finished articles which he sells.

Interest on Investment in Agriculture.

It was pointed out by a prominent speaker at the recent meeting of the Ontario Agricultural and Experimental Union, that, in his belief, the capital invested in farming in this Province was not yielding more than three per cent. annually. The cost of production, in his opinion, is too high. We would like every man who has the idea stowed away somewhere, that the farmer is making undue profits from his investments in land, stock and implements, to peruse these statements and compare them with statements of interest made on investments in some of the lines known as Big Business in this country. We do not wish to discourage any one from making farming his life-work, nor do we wish to emphasize the returns made by manufacturing companies, but it is our desire to make it plain that any insinuations cast against the farmers of this country, as being money grabbers and profiters at the expense of other people, are entirely without foundation in fact. Of course, we are ready to admit that some farmers make more than three per cent. on their investments, but how many make six per cent., which is at the present time a low interest compared with rates charged by loan companies and mortgage corporations? At the same meeting previously referred to, it was pointed out by another speaker that a certain farm manager, one of the ablest in the Province, had been able, during the past few years, to make six per cent. on the money invested in a large farming proposition. No one

cited a case where a higher interest than this had been made. Suppose we take the three per cent. estimate as low and the six per cent. estimate as high, and the average then at four-and-one-half per cent. How many of our farmers make this, even in a year of good crops and good prices? A fairly good hundred-acre farm represents, with its live stock and implements, an investment of at least ten thousand dollars. This would mean, at four-and-one-half per cent., that after deducting a reasonable wage for the farmer, and his sons and daughters who may be helping with the farm work, after clearing all expenses for the year, he must lay aside \$450 in cash from investment alone. This is not a high capitalization for a one-hundred-acre farm; many would run from twelve thousand to fifteen thousand dollars. Running expenses must be kept up, and all told, the farmer certainly does not reap any profits which he does not deserve. Allow the farmer and the help he has within his own family a reasonable wage, and then see how much is left for interest on investment.

Cutting Marketing Cost.

Some rather startling figures were brought before the fruit meeting in connection with the Experimental Union Convention recently held at Guelph. In the past, the general public has been inclined to rail a little at what they were pleased to term the undue profits of the middleman. We have always held that certain middlemen were necessary in the handling of produce, but these figures given by Prof. Crow, surely point to undue profits somewhere between the producer and the consumer, and to a means of lowering the price to the consumer while the producer gets the same or higher returns. Prof. Crow quoted a salesman as stating that his firm, which is in the business of handling fruit, made a two-hundred-per-cent. profit last year. While on this point, just compare this profit, with that stated to be the average profit from a farm in another column. Prof. Crow estimates that the charges collected on fruit from the car to the retailer's hand could be placed at from twenty to thirty-five per cent, and then cited the work of the Market Commissioner in New York, who has been able to handle the fruit from the car to the retailer at five per cent. and save money, the outlay being actually not more than three per cent. It was then pointed out that a big auction mart in New York city was able to handle citrus fruit from the car to the retailer at one-and-five-eighths per cent., and in the opinion of the Commissioner this could be done for one per cent. The Commissioner investigated the price of dried apricots, for instance, and was able to lower the price of this product from twenty and twenty-five cents per pound to ten cents per pound. The consumer now gets two pounds and a half of this fruit at twenty-five cents, the price formerly paid for one pound. The Commissioner also believes he will be able to reduce the price of milk to the consumer, one cent a quart, in New York city, and increase the price to the producer by the same amount. Some of these figures were given in our last week's paper, but we repeat them that producers and consumers alike, may see what a saving may be made by system in handling goods. Take the case of the apricots. The retailers are still making a fair profit. Surely there is much work of this nature to be done in this country, and we hope in the near future to hear of more such organization to cut down

The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

Published weekly by
THE WILLIAM WELD COMPANY (Limited).

JOHN WELD, Manager.

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

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the expense of putting farm products, be they fruit, milk, meat or what not, on the table of the consumer.

The Corn Question.

The results of our experiment, at Weldwood, with corn sown thickly in drills in comparison to corn planted in hills, and which were published in our issue of Dec. 16, have been the means of stirring up a great deal of discussion about the respective merits of these two methods of growing corn. Naturally, differences of opinion have arisen, and in some cases we feel that those who read the article and have since been discussing it, have not grasped clearly two or three essential facts in connection with the experiment. In the first place, we wish to again emphasize that the corn was sown for silo purposes only. We would not think of advising any one to sow the corn thickly in drills if he intended to feed it out as stover in the winter, or to grow ears for husking. The only two places that thick-sown corn can be considered are when grown for silage and when grown for feeding green. We are particularly interested in corn for silage, and, as pointed out in our report of the experiment, the thickly-sown corn gave us a larger yield in tons per acre, and the analysis made of it at Guelph shows this to be very nearly, if not quite, as good feed pound for pound as the corn planted in hills. But from talking with many of our readers we have come to the conclusion that some are laboring under the delusion that this thick-sown corn, which had very few cobs, was immature. We wish to state again that this corn was mature, and under no consideration, at least until further work has been done by the experimental stations, would we advise ensiling immature corn. Our thick-sown corn, to all appearances and by the results of the analysis, was as thoroughly matured as, if not more so than, the hill-planted corn. We would not like to see any reader make the mistake of sowing a late-maturing variety or of cutting his corn before it was matured, thinking that this was the proper

system to follow. In this issue the results of some experimental work carried on by Prof. G. E. Day are given, and so far as the work has gone it has proven that immature corn is not as valuable for silage as is the more mature crop, so that he would have our readers understand in the beginning that if they attempt to grow their corn thickly in rows, they must plant early-maturing varieties, and give those varieties at least the same number of days to mature as they would give them if planted in hills.

In connection with this we might again state that the corn from which the results of our experiment was taken was sown in drills three feet apart, and at the rate of fifty pounds per acre. This is a very thick seeding, and the corn, being thick in the rows, seemed to mature even earlier than that planted in hills.

Readers should remember also that it was a wet season, and the thick-sown corn possibly showed up to better advantage than it would in a dry season. However, practical farmers and some experimentalists have borne out our findings that the thick-sown corn in rows, so that it can be cultivated one way, will produce more pounds per acre for silage purposes than will the hill-planted corn.

Growers should remember, then, to plant early-maturing varieties. Be sure they mature in the thick-sown row as well as in hills. We favor planting so thickly that the corn does not cob, which means at least fifty pounds per acre in drills as outlined. Even then a few cobs will appear. We would caution also that the grower purchase good seed and test it thoroughly before planting.

Dairymen Should Demand Cream Grading.

The Dairymen of Ontario are at the parting of the way. There are two roads, two alternatives. One path may appear easy, the other difficult. The easy way leads we know not where; the road strewn with apparent obstacles has a fixed and definite goal which all dairymen would attain were it not for the thorns. Which character from Pilgrim's Progress will they simulate, that of Christian or Pliable?

Perhaps these words are not understood. Let us explain. In the great majority of cases Ontario dairymen are paid the same price for their cream at the factories whether it is good, bad or indifferent. These various qualities of cream are pooled or put into the same vat, and a quantity of cream which is over-ripe or of flavor will spoil the entire bulk, even if some of it should be excellent in every way. The result is that Ontario butter has an unenviable reputation on discriminating markets. We say this advisedly, and on the authority of those whom the Government has employed to safeguard the interests of the dairy industry in Canada. This is poor advertising for the Ontario product, it is true, but it is not written in a spirit of revenge. The sooner the patrons and owners of factories in Ontario realize their position and adopt remedial measures the quicker will they be able to meet Western, Eastern and New Zealand butter on any market, home or abroad. There is much good butter manufactured in this Province, but we are referring to the product as a whole. The good brands cannot make a reputation for all when they are in the minority. It is the quality of the car-load orders that will and does brand Ontario butter as good, medium or bad. Why is the Alberta make or that of Quebec any better than our own? Simply because a very large percentage of the cream in those provinces is paid for according to grade, the different qualities are kept apart, and manufactured separately into butter. Their specials, first, second and off-grades are made from corresponding qualities of cream. The dairyman receives more for good cream than he does for bad. There is equity in the system which encourages an effort to improve. Where is the justice, or the inducement to take greater care of cream in the out-of-date pooling system still in vogue in Ontario? In the language of politics, "It is time for a change." Factory owners and makers see obstacles in the way; will they give up without a struggle?

In 1915 about 96 per cent. of the creamery butter in Alberta was made from graded cream, 59 per cent of this butter graded specials, and only 7 per cent. graded seconds. In Saskatchewan 98 per cent. of the creamery butter was made from graded cream. In Manitoba 61 per cent. was made from graded cream. As a result of this measure the Western Provinces, especially Alberta and Saskatchewan, have been able to compete with New Zealand butter on the Vancouver market, and an extensive dealer there recently said that if Alberta and Saskatchewan made as much improvement in their butter in 1916 as they did in 1915 they would gain control, and crowd New Zealand butter off that market. The Province of Quebec now has drastic legislation relative to this matter. A dairy Act recently passed there makes cream grading compulsory. Each grade must be churned separately, and the patrons must be paid according to quality. At the Western Ontario Dairymen's Convention, held two weeks ago in St. Mary's, Harry Mitchell, Supervisor of the Milk Records Work in the Maritime Provinces, said a man should arm himself with a gatling-gun if he set out in the East to talk the old-time method of pooling and paying one price for all grades of cream. This short review of conditions in other provinces is sufficient to explain their position. Ontario cannot afford to lag behind.

We must admit that conditions are not the same in Ontario as in the Western Provinces. Factories here are sometimes close together, and if one maker attempted to grade cream and pay one man more than another, it is feared that patrons might be lost and gained to such an extent as to make the business rather uncertain. The argument has also been advanced that producers might turn to the city trade if cream grading were adopted. In any case the disgruntled producer will be the careless producer, who delivers over-ripe or tainted cream to the factory, and expects the same amount for it as the neighbor who cares for his milk and cream properly, and delivers it in such condition that a high-class butter can be made from it. Surely the majority of dairymen in Ontario will not allow a few to besmirch the name of their product. There is justice and equity in a system of cream grading that offers a reward for merit. Such a system is in the interests of the patrons, for their efforts in carefully handling their cream will be rewarded in dollars and cents instead of in words of praise.

It has been announced that a Government appropriation will this year be spent in giving cream grading a trial in a few factories. Why lose time in trying it? It has been tried in Alberta, Saskatchewan, Manitoba, Quebec and the Maritime Provinces and has been adopted. It has been adopted so successfully that the reputation of Ontario butter has suffered in consequence. Cream grading has been advocated in Ontario for years. The season of 1916 should not be dallied away. Steps should be taken so that, when the war is over, the reputation of Ontario butter will stand any test that may result from a decreased demand, which will cast the product into direct competition with that from the other provinces. There is really no choice to be made. There is only one road for the dairymen of Ontario to follow, the way leading to a superior quality of butter through cream grading.

Why Not to the End of the War?

The Canadian Parliament is again in session, and the question arising in the minds of politicians and electors alike, is whether or not the life of the present parliament will be extended to meet contingencies brought on by the war. This is a time when all citizens of the Dominion should put matters of the state first, and forget party differences and party leanings until such time as the main issue in this country, and in all the Allied countries, namely the war, is settled to the satisfaction of humanity. Canada needs no war-time election. The rank and file of the voters think very little of such a possibility and would, were it thrust upon them, be indignant. The money necessary to carry on an election can be much more advantageously spent in helping to

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defeat the Hun. No election can be carried on without dividing the country, to some extent, against itself. The only people in this country who could possibly desire a polling day during war time, would be those who expect to gain some advantage through a trial of strength between the two great political parties. Canada should have no party, clique, or class in this crisis. The people have shown their confidence in the present administration, and nothing would be gained by an election. The best men on both sides of the house would not favor it, and the country does not want it. We have read that it is proposed to extend the life of Parliament to October the 7th next. Why not to the end of the war?

Nature's Diary.

A. B. Klugh, M.A.

Now that we have examined the environment fairly carefully we are in a position to deal with the different plant formations which we find in different environments. From what we have said of water we can see that of all the factors of the environment it is the most vital, and the most direct in its influence. Consequently, on the basis of the available water, we divide plants into societies or formations. In order to get a bird's-eye view of these formations and the conditions under which they exist we can arrange them as follows:

A. Soil very wet. 1. Water Plants. 2. Marsh Plants.

B. Soil physiologically dry, that is plenty of water is usually present, but on account of abundance of acids or salts only a small quantity of the water is available for the use of the plants. 3. Bog Plants. 4. Salt Plants.

C. Soil is physically dry, that is, water is scarce. 5. Rock Plants. 6. Sand Plants.

D. Soil is moderately dry. 7. Coniferous Forest Plants. 8. Dry Thicket Plants.

E. Soil is moderately moist, and conditions are suitable for the best development of most plants. 9. Mesophytes, plants which grow under medium conditions.

As we consider in turn these different formations we see revealed the most interesting phase of modern botany, the way in which the plants of these different environments are adapted for living under these various conditions. It throws new light on plant structures, it gives a meaning to these structures, it teaches us to regard the plant as a living thing which has met these conditions and has responded to them. To know a fact is one thing, to understand the meaning of it is quite another thing. Facts alone are dry things, but facts with their meanings and reasons are interesting to all thinking people. This is true not only in botany, it is true of all subjects, and it is a theme which all who are interested in education would do well to ponder long and carefully. A mere cramming up of facts is not education, though it has long passed as such. Education consists in understanding facts, in being able to correlate facts, in being able to argue from one thing to another. In short, it consists in training in the ability to think.

The first formation which we have to consider is that which consists of Water Plants, by which we mean plants which grow in the water, either entirely submerged, or with the leaves floating on the water. Various structures are exhibited by these plants which may be regarded as adaptations to an aquatic environment. Since nutriment can be absorbed by the whole permeable surface of these plants there is no need for roots and root-hairs, structures whose function in land plants is to gather nutriment. Consequently the root system is much reduced, and the roots serve only to anchor the plants in place.

The water-carrying vessels, which are well developed in land plants, are either very much reduced, or entirely absent in Water Plants, for the obvious reason that water is available at all points. Mechanical tissue, by which we mean wood and other firm supporting structures, is also much reduced or absent, because the buoyancy of water is so much greater than that of air. Any mechanical tissue present exists as a central axis, and its function is to resist stretching and not to resist bending from side to side. Air-containing spaces are very abundant and large in Water Plants, and serve partly to float the plants and partly to conduct air from one part of the plant to another. The epidermis (outside skin) is very thin, and is not covered with a cuticle or layer of cork as is the case in land plants, nor with a coating of wax, as in many land plants. The outer layers of the stem often contain chlorophyll, which must be regarded as an adaptation to the weakness of light, due to the rays having to penetrate a layer of water.

The leaves of submerged plants are usually either very narrow or else very much cut up, the latter form being particularly characteristic of

plants which grow in places where the current is strong, and apparently being an adaptation to such an environment, since broad leaves would be very liable to be torn by the rapid movement of the water. Floating leaves on the other hand are broad, and many of them are circular or nearly so in outline. Floating leaves also have stomata (pores) on the upper surface, while in submerged leaves no stomata are present.

In the case of the marine Algae (Seaweeds) we have a very interesting case of distribution as governed by the intensity of light. Near the surface where the light is strongest we find the green Algae, a little lower down we find the olive-brown Algae, and the deepest of all we find the red Algae.

So far we have been speaking of the larger plants found in water, but we must bear in mind that there are immense numbers of plants in water which are not visible to the naked eye. These are minute Algae which float freely in the water, or which swim actively about. It may sound strange to speak of plants swimming about, as the usual conception of plants is as stationary objects, but while this conception is true enough of the larger plants it is not by any means true of all plants, since many of these lower plants are just as freely motile as any animals. The only time that these minute plants are at all conspicuous is when they occur in bulk, and they then often color the water a bluish-green. Such aggregations of these plants may be seen on bodies of still water in August or early September.

THE HORSE.

Lameness In Horses VI.

SPLINT LAMENESS.

Splint lameness is quite common, and to the non-initiated, sometimes quite alarming, in young horses, and occasionally in horses of all ages. It is rarely noticed in the hind limbs. In order to understand and appreciate the trouble, it is necessary to have an intelligent idea of the bone anatomy of the horse from the knee to the fetlock. This part is, usually called the cannon.



Babingly Null Secundus.

A Shire stallion which sold for 2,500 guineas at the Rothschild Sale in Great Britain, 1915.

It consists of three bones, one large cannon bone extending the whole distance from the knee in the fore limb, and the hock in the hind limb, to their respective fetlock joints. This bone has a somewhat broad and flat posterior surface. To each edge of this surface is attached a small, somewhat triangular-shaped bone, of considerable size above, where it articulates with the bones of the knee joint, and gradually decreases in size as it extends downwards, becoming quite small, and terminating in a small nodule, somewhat pea-shaped, a little more than two-thirds down the large bone. These nodules can readily be felt, one on each side of the limb a few inches above the fetlock. In fine-limbed horses, without long hair on their legs, they can sometimes be seen, and are occasionally mistaken for splints, especially in some cases in which one or more are larger than usual. The attachment of the small bones, commonly called splint bones, to the large cannon bone is ligamentous. A splint consists of a bony union between the large and small bones. Inflammation between the bones is set up, usually simply by concussion during ordinary travelling, especially on hard roads. As a result of this inflammation an exudate is thrown out and the ligamentous attachment is destroyed. This exudate is, of

course, soft at first, but soon becomes converted into bone and unites the large and small bones by bony union. An enlargement of greater or less size can usually be seen, which, in most cases, gradually disappears by absorption until nothing can be noticed, and in many cases cannot be detected by manipulation. At the same time the ossific (bony) union between the bones is permanent. Hence a horse that once has a splint will always have it, although all visible symptoms have disappeared. We often hear people say that, "a horse over seven years old never has a splint." This arises from the fact that the visible enlargement has usually disappeared by the time the animal reaches that age, but, as stated, the union between the bones still exists. This absorption does not always take place, and it is not uncommon to observe well-marked splints in horses of any age. In some cases the splint is double—that is, an enlargement is noticeable on each side of the limb—and in such cases there is generally a bony deposit extending across the posterior surface of the large bone from one splint to the other. This often causes an irritation to the suspensory ligament, which passes down this surface, and causes permanent lameness. Except in cases of this kind, and in those in which the splints are so high that the knee joint is involved, splints seldom cause persistent or permanent lameness.

SYMPTOMS.—In many cases there is no lameness, in which cases the first intimation of the presence of splint is the appearance of the enlargement, which usually gradually disappears. At the same time splint lameness is often seen. The symptoms are usually characteristic. A horse lame from splint will usually stand and walk sound, but if asked to go faster than a walk will show well-marked lameness, the head dropping decidedly when the sound foot touches the ground. The lameness is often noticed before there is any visible enlargement. When a horse, especially a young one, shows this peculiarity of lameness, splint may be suspected. In splint lameness the lameness is more marked when the horse is trotting down hill, and the intensity of the lameness usually increases as exercise is continued. Manipulation will usually reveal the seat of the trouble. By pressing between the thumb and finger, the line of attachment between the

large and small bones from the knee downwards, the seat can be detected by the horse finching when the seat of the trouble is pressed, and if severe pressure be given he will often rear on his hind legs. The usual seat of splint is on the inner surface of the fore cannon, but it may be on the outer surface or both, and is usually from 1 to 3 inches below the knee, but may be higher or somewhat lower. The hind limb is not often affected, but when it is, the seat is usually the outer surface. When we know the peculiarity of the lameness and the manner of locating it, we seldom have much trouble in locating the seat.

TREATMENT.—Lameness is usually present only during the inflammatory stage. When the exudate becomes ossified (converted into bone) the inflammatory action ceases and lameness disappears, except the enlargement be of sufficient size or so situated that it causes irritation to the suspensory ligament, or involves the joint. Hence treatment should be directed to allay inflammation as promptly as possible. Splint lameness sometimes appears very suddenly. A horse may be driven a journey and go perfectly sound, and after a rest, when taken out to drive home, may go very lame when asked to go faster than a walk, of course, the patient must be given rest. The seat of splint should be showered with cold water frequently for a few days. This is often all that is needed, and the horse will go sound, and after a few months or longer no enlargement will be noticed. In other cases lameness is more persistent, and it is necessary to apply a blister in the ordinary way, the details for which have already been given in a former article. A second or third blister is sometimes necessary, and in some cases it is necessary to have the splint fired by a veterinarian. Where lameness does not exist it is seldom considered necessary to treat. Friction or blistering has a tendency to hasten absorption of the enlargement, but in most cases

nature effects this without extraneous assistance. As a simple matter of fact, there are few horses that have done considerable road work that are free from splints, although they may never have gone lame, and there is no visible enlargement.

WHIP.

England's Future Light Horse Breeding.

Editor "The Farmer's Advocate":

The British Government is going to bestir itself in the matter of looking after its future races of light horses—particularly those light horses which may be wanted for future wars, or, let us hope, for those days when we shall be more prepared for the next war, if this present war should not prove to be Armageddon, or at least, the last of all strife.

Lord Selborne, as Chief Minister of Agriculture, in the late summer appointed a Committee of expert horse breeders—all of them—to enquire into ways and means of securing for the country an adequate supply of horses suitable for military purposes. The Committee's findings summarized are:

That the Board of Agriculture should:—

1. Institute legislation to require compulsory annual registration by the Board of all stallions that are travelled for a service fee, or are publicly exhibited for stud purposes.
2. Increase the number of King's Premium stallions.
3. Arrange for the inspection of stallions recommended for Board's Premiums.
4. Continue brood mare scheme, and buy high-class mares for resale to selected breeders.
5. Buy stallions suitable for country service.
6. Provide funds for the award of prizes for brood mares and foals.
7. Arrange for a compulsory annual census of horses.
8. Reconstitute advisory council and county committees.
9. Appoint expert staff of officers to supervise the scheme.

The War Office should:—

1. Buy more horses in England and Wales.
2. Increase horse peace establishments.
3. Buy more horses direct from breeders.
4. Buy remounts when rising four.
5. Buy specially selected fillies, and leave them with breeders until they have reared foals.

Henry Chaplin, M. P., one of the Committee, who has long been a pioneer of state horse breeding, raising the subject in Parliament in 1875, adds reservations in a supplementary report. "If any real and substantial improvement is to be made in the horse supply of the country," he says, "it can only be made with the aid of Government funds on a liberal scale." He suggests that racing and farming should be represented on the central authority.

The Advisory Committee wisely consider the appointment of an expert and adequate staff of officers of the Board to be essential, inasmuch as the success of any national horse-breeding scheme must depend upon proper supervision. They suggest that the country should be divided into districts, and that in each district there should be stationed an officer of the Board whose sole duty should be to promote and supervise the light-horse breeding operations of the Board. The staff should consist of men who are fully qualified, by practical experience and knowledge, to carry out the following duties:

- (a) To advise breeders as to the selection, mating, rearing, and disposal of their stock.
- (b) To supervise the service arrangements of stallions purchased by the Board, and of premium stallions, and to inspect and keep records of their stock.
- (c) To keep in close touch with War Office buyers, and to arrange for collection of horses for inspection and purchase.
- (d) To act as secretaries to county committees, and to supervise generally the horse-breeding scheme of the Board.

Hitherto the Army has been a comparatively small customer in the horse market of Great Britain—the normal purchases in the United Kingdom in times of peace amount approximately to only some 3,000 horses a year, and of these 80 per cent. are bought in Ireland. The fact that the purchases are to-day made chiefly through dealers, and consist only of horses over the age of four does not tend to bring the War Office into touch with the breeder, nor will any breeder in Great Britain attempt, under existing conditions, to breed horses especially for remount purposes, as it would not pay him to do so. The existing system of purchase has been adopted because it is economical and convenient, and, provided the Army can secure, at the prices they are prepared to offer, horses in sufficient numbers and of the type, age, and quality required (and they can do so in peace time), there would seem no good reason to make any alteration in the methods employed. The middleman, i. e., the dealer, saves an enormous amount of trouble and expense, as he knows the requirements of the Army buyer, collects batches of suitable horses

for their inspection, and does not waste their time by trying to sell animals that are evidently unsuitable for military purposes. Again, horses between the age of four and seven are ready and fit to go into the ranks much sooner than horses purchased at three from breeders.

It is hinted that the peace establishment shall be materially increased so as to make a bigger market for breeders. They declare that more horses should be purchased direct from breeders. They, however, recognize that breeders must be educated as to the types of horses required for military purposes, as to the advantage of having their horses in suitable condition for inspection by Army buyers, and as to their fair and commercial value. Again, it is recommended that as many remounts as possible should be purchased when rising four, as the earlier the breeder can get rid of his young stock the better pleased he will be, and the more ready to study the requirements of the War Office. There is sound sense in the suggestion that in the event of there being some specially good three-year-old fillies, the War Office should purchase them and leave them with breeders until they have produced and reared foals, but we suggest that great care should be taken in determining the conditions of purchase and in selecting the breeders. Finally, the Committee hint that mares which appear to be specially suitable for breeding purposes should be drafted from the ranks at ten years of age and transferred to the Board for disposal under their brood mare schemes.

ALBION.

were selected when six weeks old, and a value of \$4.00 was placed on them at that age. They were fed until 22 weeks of age, and a record kept of the amount of feed used each week. Feed was valued as follows, prices being per ton of each commodity: Ground oats, \$28.00; ground barley, \$28.00; corn on cob, \$18.00; shelled corn, \$28.80; ground wheat, \$35.00; bran, \$23.00; low-grade flour or red dog, \$32.00; shorts or middlings, \$28.00; corn on cob, \$18.00; shelled corn, \$28.80; tankage, \$46.00; green feed, \$2.00; skim-milk, \$5.00; buttermilk, \$6.00; whey, \$3.00; pasture where used was charged at 75 cents per hog. In estimating the profit the value of the hogs, live weight, fed and watered, was taken at 9 cents per pound.

The following table gives some information regarding costs, etc., as reported by the five contestants who showed the greatest profits. They are the returns of the winners in the counties mentioned. The figures are the average for one hog only:

FIGURES FROM FIVE DIFFERENT COUNTIES.

County.	Av. cost of production.	Av. value.	Av. profit.
Grey	\$12.53	24.84	12.31
Oxford	13.63	24.84	11.21
Renfrew	9.14	19.65	10.51
Frontenac	8.06	18.69	9.83
Middlesex	9.33	18.72	9.39

It must be remembered that these averages are not compiled from the results submitted by all the contestants in each county; they are simply the summarized report of the winner in each case.

In the first instance the winner in Grey County has placed the average value of his hogs at \$24.84. At 9 cents per pound these hogs must have weighed on the average 276 lbs. Remembering that the pigs were only 22 weeks or less than 6 months of age, this young man must be credited with knowing how to provide pork. Again we will assume that at 6 weeks the young pigs weighed 50 pounds each, which is a good weight, indeed, at that age. This would leave 226 lbs. of growth and weight put on in 16 weeks of feeding. The total cost was \$12.53, and subtracting from this \$4.00, which was the value of the pig when 6 weeks old, we find the cost of feeding for 16 weeks and making 226 lbs. of pork to be \$8.53 or \$3.77 per cwt.

Analyzing the report in another way we find the average price of the different meals to be very approximately \$30 per ton, or 1½ cents per pound. Milk and whey have been given values which represent their efficiency as compared with the meals, so it is quite fair to use the word "meal" to represent all these feeds, and speak of such meal as worth 1½ cents per pound. For instance, a pound of meal would be equal in feeding value to 5 or 6 lbs. of milk, and each would be worth very nearly 1½ cents. Reducing all feeds used to terms of meal it is found that each 100 lbs. of gain was put on for \$3.77 or almost exactly 250 lbs. of meal, calculating such at 1½ cents per pound.

Experiments in the United States have shown that 400 lbs. of meal are required to produce 100 lbs. of gain on pigs weighing from 50 to 100 lbs., whereas pigs weighing from 150 to 200 lbs. required 482 lbs. of meal to make 100 lbs. of gain. Prof. G. E. Day, at the Ontario Agricultural College, arrived at the following results: pigs weighing 54 to 82 lbs. required 310 lbs. of meal for 100 lbs. of gain; from 82 to 115 lbs. they required 375 lbs. of meal for each 100 lbs. of gain; those weighing 115 to 140 lbs. required 438 lbs. meal for 100 lbs. gain, and those weighing from 140 to 170 lbs. required 455 lbs. of meal for 100 pounds of gain. At the College last year young pigs were grown to 170 lbs. of weight on 280 lbs. of meal for 100 lbs. of gain, but this was from the time they were weaned. The older and larger the pig the more pounds of grain are required for each pound of gain.

Enough has been printed here to show that the results submitted by some of the contestants are not in harmony with the teachings which have for so long been considered correct. We do not consider it heterodox for farmers to advance ideas or submit results which do not agree with established doctrine. However, since the results of the "Feeding Hogs for Profit Competition" have been published, setting forth the profits which accrued, and seeing that these figures do not agree with the reports on experimental work conducted by paid officials, it seems necessary to direct attention to the matter and suggest that something be done this coming season to harmonize these various reports, and perhaps arrive at new and final information regarding the cost of a pound of gain.

It is possible that the young men were untrained in the art of experimenting, and did not realize the importance of recording every little thing which went to make up the daily allowance. If such be the case the profits would be high, and the cost of production low in proportion to the extras fed but not recorded.

LIVE STOCK.

New Records in Pork Production.

Last week and the week previous a number of Ontario farmer boys took the course in Live-Stock and Seed Judging at the Ontario Agricultural College at the expense of the Ontario Department of Agriculture. The prize, than which none better could have been donated unless it were a longer course, was a reward for winning in a "Feeding Hogs for Profit Competition," conducted under the supervision of the District Representatives in the various counties. The idea is a good one, and such experiments conducted under actual farm conditions should tend to excite a greater interest in the determination of more profitable and sufficient rations, and in the gathering of more complete information regarding the cost of production. The point, however, to which we wish to direct the reader's attention, is the exceedingly low cost of producing pork un-



A Poland-China Boar.

A winner at the Western Fair, London, Ont., 1915.

der conditions on the farms where these trials were carried on. The outcome of the competition, at first sight, appears paradoxical, for the young men took a course of training at an institution where hogs cannot be produced as cheaply as the students themselves had done. This is no reflection on the Agricultural College at Guelph. Possibly further information from the young men who fed the pigs would solve the problem and explain the difference between their results and those of long-established and reliable experiment stations. It is possible that, with pasture, plenty of milk and a number of different kinds of meal, a good feeder can reduce the generally conceded cost of making 100 pounds of pork. However, the matter has been under experimentation for years and years, and every factor likely to have any influence whatsoever has received consideration. If there has been nothing forgotten when the contestants were reporting results to those in charge, and the tests were carried out similar in detail to those reported by our need of new work being conducted in order to acquaint farmers with the actual cost of making a pound of pork under farm conditions. A study on the matter.

In order to standardize the test over the Province, certain rules were laid down. The hogs

Lighting and Ventilating the Stock Barn.

By E. S. Archibald.

-PLATE I-

The importance of proper buildings for live stock is admitted by practically every stockman, yet buildings which are correct in every detail are exceedingly rare on Canadian farms. The two great essentials in a barn are, first, convenience, to increase the housing capacity of such a building, and in storing and distributing feed, thus saving labor; second, sanitation to improve the health of the animals and the quality of the products. This latter essential may be obtained only by having tight, water-proof floors, easily washed and disinfected; sufficient light in the barn in order to carry on the work, to add cheerfulness and profit, and good ventilation. The ideal barn might be described as being from 36 to 42 feet in width, having two rows of either ties or box stalls running lengthwise of the building, for the greatest conveniences and best lighting and sanitation. Wider barns are difficult to light to the centre, while narrower barns are not sufficiently commodious. Concrete makes the best flooring. The ceiling of such a barn should be from 8½ to 9 feet above the cattle stands. The walls should be well but cheaply built. Light should be provided at a minimum of 6 square feet, and a maximum of 10 square feet of glass per cow. It is the purpose of this article to deal exclusively with the subjects of the proper lighting and ventilation of the barn.

LIGHTING THE BARN.

To the thoughtful, intelligent farmer the needs for sufficient light in the stock barns are apparent; nevertheless the average barn in Canada contains less than ½ square foot of glass per cow, and even these windows are often so dirty that no direct sunlight may penetrate to the floors of passages and stands. Reasons why a barn should be well lighted are as follows:

1. In order to save labor by being able to work quickly.
2. To show and induce cleaning up the dirt and filth of the barn, which is harboring and spreading such dread diseases as abortion, tuberculosis, etc.
3. To make the barn bright, cheerful, and comfortable for the animals. This means greater production and greater profits.
4. To show the animals to better advantage, either for feeding or selling. The former point is important, for many a cow has been lost in a dark barn, where had she been seen more carefully at an earlier date, the cause of mortality might have been eliminated.
5. To show the animals in such a light that the needs of better feeding are apparent. This will disgrace the unprofitable cow and the farmer who is a poor feeder.
6. Glass is often cheaper than concrete or masonry work, and is not a great deal more expensive than lumber. There is no reason whatever for barns being dark, other than the fact that the average farmer will not think carefully on this subject.

INSTALLING THE WINDOWS.

When it is possible, the best window frame to install is one containing two equal-sized sashes, the one placed above the other, the upper one being hinged to the top of the lower and dropping inward with some cheap regulating device. Each sash should contain six lights, each approximately 10 by 12 inches. Whatever the form of window, the main considerations are that they hinge inward, and that sufficient windows be supplied to provide from 6 to 10 square feet of glass per cow. Such a system of windows makes an auxiliary ventilation system in the very warm weather. Storm windows are very often advisable, as they increase the warmth of the barn in extreme weather, and the inner windows will not frost up and darken the barn. Where at all possible windows should be distributed, to a certain extent at least, on all four sides of the stable.

WHY VENTILATE THE STABLE?

The more important reasons for the absolute need of a good ventilating system might be briefly listed as follows:

1. Reasonably warm stables are required for milk cows and some other classes of stock. The specialized dairy cow has been developed for the purpose of making large quantities of milk with the least possible feed and at the lowest cost. During the severe weather of winter a minimum temperature of 40 degrees, with a maximum temperature of 55 degrees is most satisfactory. Hence, the warm barns of to-day have been evolved from the single-board, cold stables of twenty years ago.
2. Warm, tight barns have no circulation of air unless some ventilating system is provided.
3. The animals soon use up the oxygen in the stable and replace this with the carbon dioxide gas exhaled from the body, which latter, in any considerable quantity, has a suffocating and poisonous effect upon the animals. Ventilation draws off the air laden with carbon dioxide gas and provides pure air containing the necessary oxygen. This latter element is absolutely essen-

tial in liberal quantities to produce healthy blood in the system, and the most economical digestion and utilization of feeds. The best authorities tell us that a cow weighing 1,000 pounds breathes 2,800 cubic feet of air in twenty-four hours, containing 11 pounds of oxygen; or a

horse weighing 1,000 pounds breathes 3,400 cubic feet of air, containing 13½ pounds of oxygen, in twenty-four hours. It is necessary to supply at least one-quarter more fresh air than is consumed by the animals.

4. Animals excrete even more moisture than carbon dioxide gas. It is estimated that a cow gives off from her breath alone over 10 pounds (1 gallon) of water in twenty-four hours, but this does not include the moisture given off through the skin or by the bladder and digestive organs. The damp stable is one which is not ventilated, hence, contains both moisture and carbon dioxide. Damp quarters for stock induce rheumatism, chills, pneumonia, digestive disorders, and many other complaints. Animals which are damp cannot withstand cold. Dampness is the breeding ground of our worst contagious diseases.

5. Animals maintained in a poorly-ventilated barn require from one-quarter to one-third more feed to maintain bodily weight and condition and to maintain production than those kept in proper surroundings. This money lost may be the difference between profit and loss on these animals.

THE PRINCIPLES OF VENTILATION.

The three principles upon which ventilation is based are as follows:

1. Circulation of air is absolutely essential: where there is no circulation, moisture, carbon dioxide, and other gases will accumulate.
 2. Warm air is lighter than cold air, hence rises to the ceiling. Again, warm air will contain more moisture than cold air, hence there will be greater dampness near the ceiling than at the floor. However, if this condenses on the walls or ceiling it will fall back to the floor or on the animals in drops.
 3. Carbon dioxide and some of the other stable gases are heavier than air, according to some authorities, such as Prof. W. H. King. However, recent investigators of the King and other ventilating systems find more carbon dioxide and other gases together with the moisture at the ceiling rather than at the floor, due largely to the gravitation of the warm air.
- Hence the practice of proper ventilation becomes a question of keeping a constant circulation of air and drawing off the moisture, carbon dioxide, and other gases with the warmer air containing the same.

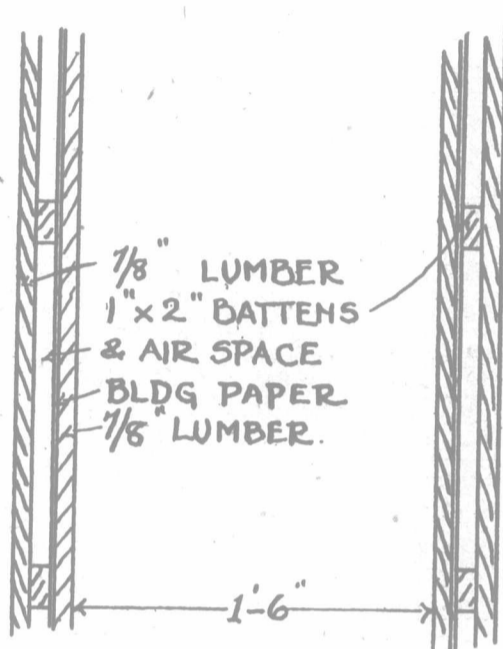
THE ESSENTIALS OF A GOOD VENTILATING SYSTEM.

1. Whatever the system may be, the first and greatest essential is that it be intelligently handled. There is no automatic ventilating system to suit all changes of temperature, humidity, etc., and the man in charge of the barn must regulate the ventilation to suit these conditions.
2. A reasonable amount of warmth is necessary in the barn to give a proper circulation of air. There must be several degrees difference between the inside and outside temperatures. The warmth of the stable depends upon the number and size of the animals housed therein and the feed consumed. Stable air which is too warm is apt to be foul. However, cold air is not always pure, in fact it may be most vile.

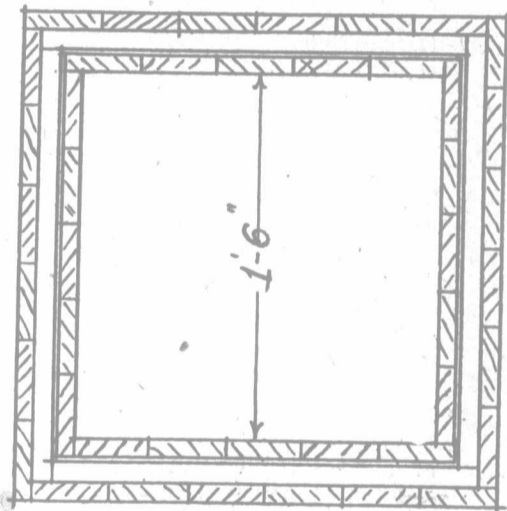
3. The walls must be reasonably tight, else cross drafts will often spoil the ventilation when it is most needed. A dead air space constructed in the wall is necessary to maintain a dry stable wall. The cold penetrating a solid board, stone, or cement wall condenses the moisture on the inside of this wall and retards ventilation. If the wall is of wood, board or sheathe on the inside of the studs, thus making an air space in the centre. If the wall is of stone or cement it will probably be necessary to line the inner side, leaving a 2-inch air space between.

4. Ceilings. The single-story barn with or without the monitor roof cannot be ventilated to good advantage in parts of Canada where there are extreme weather conditions. A loft above the stable, where hay and straw are stored, provides excellent insulation and prevents condensation of moisture. A tight ceiling gives the best ventilation and allows the cleanest barn. If no fodder is stored in the loft above, it will be necessary to insulate the ceiling similar to the walls by sheathing on the underside of the joists, thus making a dead air space.

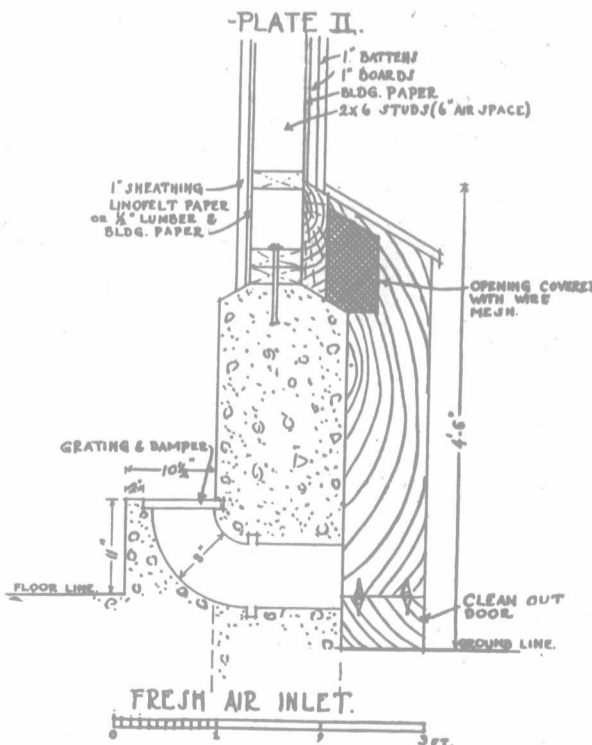
5. Capacity of barn. Too many animals crowded into a low, narrow barn cause so much heat that it will be difficult to ventilate without drafts. On the other hand, too few animals in a large space evolve so little heat that proper circulation of air is impossible. Arrange the barn to suit the cubic air space per cow for best ventilation. For example, in the dairy barn containing twenty-four cows, here illustrated, the three passageways total approximately 18 feet in width; the height of ceiling in this barn should not exceed 9 feet above the floor of cattle stands. In a barn of these dimensions each cow is allowed approximately 600 cubic feet of air. From 500



SECTION



PLAN.



FOUL AIR OUTLET.

FRESH AIR INLET.

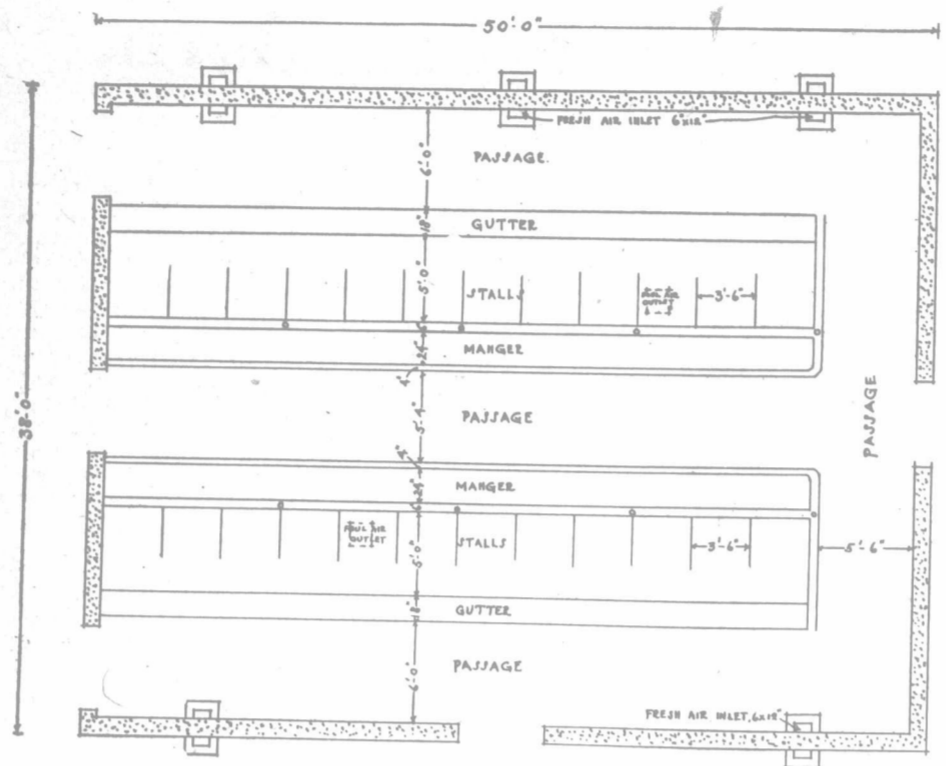


PLATE III
RUTHERFORD SYSTEM

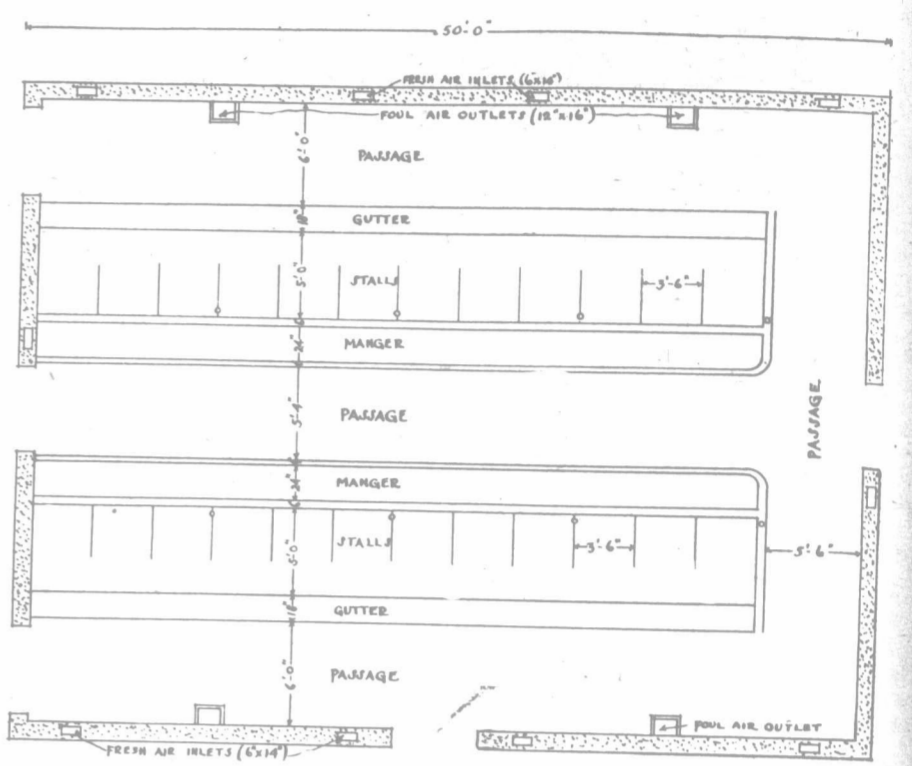


PLATE V
KING SYSTEM

to 700 cubic feet per cow will give excellent satisfaction.

When the animals are kept in box stalls the capacity of the barn is lowered. It will thus be necessary to decrease proportionately the height of ceiling and the width of passageways in order to keep approximately the same cubic air space per cow. In barns where calves or a few bulls only are maintained in boxes the ceiling should never exceed 8 feet in height above the floor of boxes.

6. Foul Air Outlets. These outlets have the same relation to a ventilation system as the flue has to the stove. The outlets must be tight; any holes or cracks in the same will act as a check draft. They must be made of warm material. Wood is best and cheapest. The proper construction of a good foul air outlet consists of two ply of 1-inch matched lumber, with 1-inch battens and one ply of paper between. This ventilator is tight, insulated, and warm. Without this insulation the cold air in the loft penetrates the solid wall of the outlet and condenses the moisture in the ventilator, which is always the cause of dripping in the stable. Metal outlets commonly used in many districts almost always have this fault unless jacketed with wood. In any foul-air outlet a damper near the bottom should

be provided to control the temperature, but should never be completely closed. See Plate I.

7. Fresh air intakes. As the bottom draft is to the stove, so the fresh-air intake is to the ventilating system. If there is no fresh air coming into the stable, the foul air will not go out through the foul-air outlet, no matter how well constructed the latter may be. The fresh-air intake may be brought up from under or at the floor level to any height along the wall, depending upon the system of ventilation. A control damper in each of the fresh-air intakes allows the proper regulation of incoming air, varying with the temperature and the direction and velocity of the wind outside of the barn. These dampers must never be completely closed throughout the barn, although they may be closed on one side in the case of heavy wind storms. See Plate II.

RUTHERFORD SYSTEM OF VENTILATION.

Many systems of ventilation have been tried, and the perfect system has not yet been discovered. However, the two systems which are most commonly known and which have given the best results are the Rutherford and King systems of ventilation. These two systems have been carefully installed and compared in barns for horses

and cattle and in piggeries. The Rutherford system has universally proved superior in the colder climates.

The superiority of the Rutherford system is due to various features, the chief being:

1. Ease in installation in old or new buildings.
2. Adaptability to all classes of stables.
3. Suitability to a variety of weather and climatic conditions.
4. Facility of operating and controlling.
5. Effectiveness in control of temperature in all parts of the stable.
6. Cheapest to install, requiring less labor or materials.

The principle of this system is the natural system, namely, the introduction of the fresh air at or near the floor, which as it warms gathers moisture and gases and rises to the ceiling, there to enter the lower end of the foul-air outlet. The diagrams accompanying are for the most part self-explanatory, but a few notes may be helpful.

FOUL-AIR OUTLETS.—In constructing this system, avoid too many small outlets or too few and too large outlets. The small outlet has a poor draft and is easily choked, while the outlet too large for the volume of warm air allows

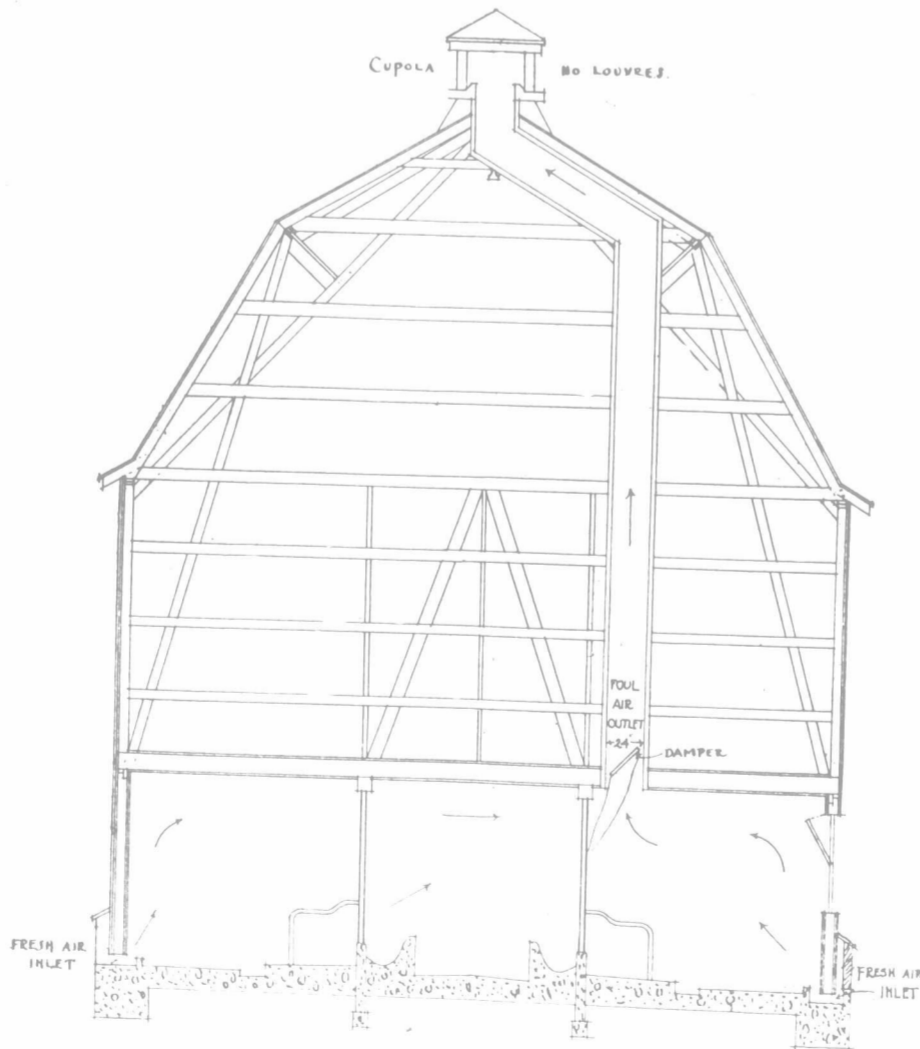


PLATE IV
RUTHERFORD SYSTEM
(SHOWING END FRAMING)

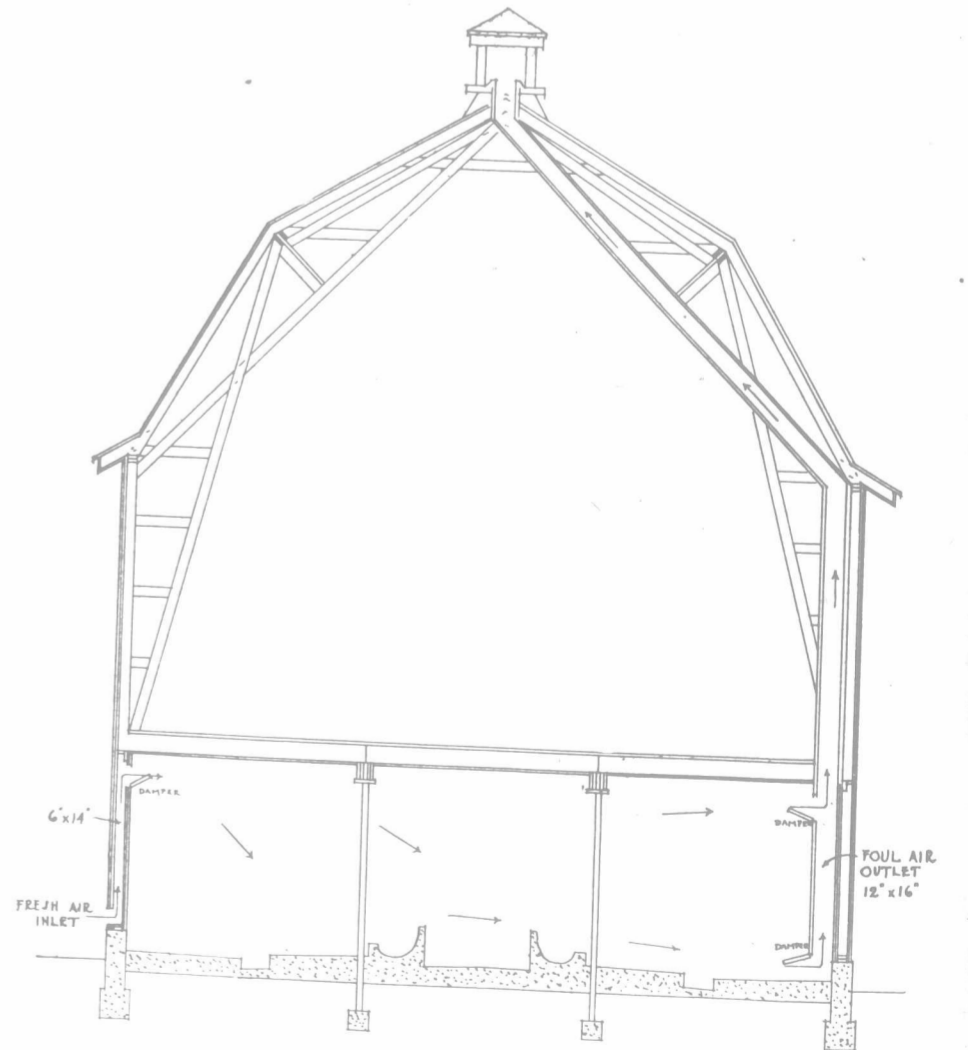
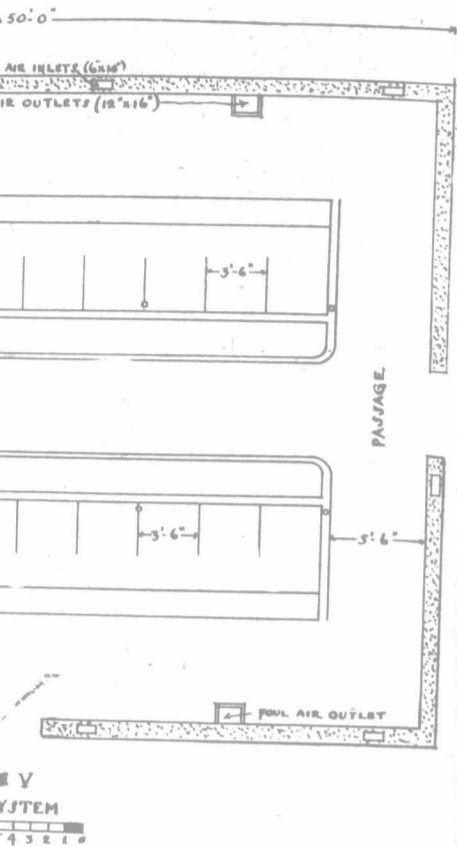


PLATE VI
KING SYSTEM



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of operating and controlling. Efficiency in control of temperature in the stable.

to install, requiring less labor or cost.

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gases and rises to the ceiling, there lower end of the foul-air outlet.

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OUTLETS.—In constructing this too many small outlets or too few outlets. The small outlet has a

is easily choked, while the outlet for the volume of warm air allows



down-drafts, condensation, and poor ventilation. The outlet, 24 inches by 24 inches, inside measurement, is an excellent size for medium-sized barns. In the accompanying illustration the foul-air outlet measures 24 by 12 inches, in its measurements. The sum of the square measure of the end of these two ventilators is 4 square feet, or 24 square inches per cow. In a smaller barn this may be reduced to 20 square inches, and in a larger barn increased to 28 square inches for the best results. There is no objection to making fewer and larger shafts and using these as feed or straw chutes, providing the doors in the same are tight, the damper placed above these doors, and the chute not so large as to allow down-drafts.

FRESH-AIR INTAKES.—One of the best fresh-air intakes is as illustrated. The curb on the opening in barn deflects the air upward. The hood over the outside opening is raised from 2 to 3 feet above this opening, and the holes in the hood are on the sides near the top. These latter openings may be covered with fly netting in the summer.

It may often be advisable to carry the fresh air in a tube under the floors of stable for a considerable distance. In such cases the number of square inches per cow must be sufficiently increased to overcome friction.

A slide or damper in the fresh-air intake should be provided. The size of the intakes may be varied to suit the needs of the building. However, best results will usually be acquired where there are sufficient intakes to be evenly distributed about the four sides of the building. For example, in the accompanying diagram each intake is 6 inches by 12 inches, making a total for the five intakes of 360 square inches, or 15 square inches per cow. This is the correct amount of intake for this system and this type of barn. See Plates III and IV.

KING SYSTEM OF VENTILATION.

This system of ventilation has many admirers, and in certain parts of Canada it has often proved successful. The chief comparisons with the Rutherford system are:

1. More difficult to establish in old buildings.
2. More and longer flues required, which are more costly to install.
3. Not as adaptable to all classes of stables.
4. The foul-air chutes being next wall, their roof must be very carefully insulated, or condensation will take place.
5. This system differs radically from the Rutherford system, as the foul air is drawn off at the floor.

The advocates of this system claim that carbonic acid gas is the chief impurity in the stable, and since the gas is heavier than pure air it is likely to be found in largest quantities near the floor. Reference has already been made to recent findings regarding this matter. The best authorities on this system at the present time are inserting an outlet near the ceiling for constant use, and so regulating this damper that it can never be completely closed. This allows the taking off of the moisture and carbon dioxide from the upper air of the barn, and in this respect is but a modification of the Rutherford system. Undoubtedly this system may have the advantage of being able to maintain a somewhat higher temperature in the barn. From experiments in Canada, however, this is not sufficient to counterbalance the lack of purity in the air, except possibly in a few box-stall barns. The accompanying diagrams of the King system are, for the most part, self-explanatory.

FOUL-AIR OUTLETS.—These start at the floor level, follow the line of walls to the plate, and from thence to the peak or cupola or through the roof and up to the height of the peak. Advocates of this system usually advise special but rather expensive ventilator tops for the roof, which are not necessary in the Rutherford system. These foul-air outlets must be on both sides of the barn. Great difficulty will be found in installing and operating this system in any of the wider barns. There should be allowed 32 square inches per cow of foul-air outlet. The dampers must be installed at both floor and ceiling levels to control the temperature and humidity.

FRESH-AIR INTAKES.—These intakes are usually placed between the studs in the wall. The opening into this intake from out-of-doors is usually placed near the floor level. The fresh air is carried up between the studs to near the ceiling, where an opening is provided into the barn, with a control damper over the same. The fresh, cold air falls, and in so doing must pass through the warm air. This causes a mixing of the air and the breaking of a natural course of air circulation, which, in the writer's opinion, is the second great reason why this system does not give as good satisfaction as the Rutherford system. In districts where extreme temperatures are not met this system may prove satisfactory, as before stated. However, provision should be made for the same when erecting the building. See Plates V and VI.

Remember the Dates.

The following is a list of the live-stock meetings to be held at the Carls-Rite Hotel, Toronto, the first week in February:

- Monday, Jan. 31, 2.00 p.m.—Dominion Cattle Breeders' Association, Directors' Meeting. 2.00 p.m.—Canadian Hackney Horse Society, Directors' Meeting. 3.00 p.m.—Dominion Cattle Breeders' Association, Annual Meeting. 7.00 p.m.—Canadian Hackney Horse Society, Annual Meeting. 7.00 p.m.—Canadian Jersey Cattle Club, Directors' Meeting. 7.00 p.m.—Canadian Thoroughbred Horse Society, Directors' Meeting. 8.00 p.m.—Dominion Shorthorn Breeders' Association, Directors' Meeting. 8.30 p.m.—Canadian Thoroughbred Horse Society, Annual Meeting.
- Tuesday, Feb. 1, 11.00 a.m.—Dominion Shorthorn Breeders' Association, Annual Meeting. 11.00 a.m.—Canadian Jersey Cattle Club, Annual Meeting. 2.00 p.m.—Canadian Standard-Bred Horse Society, Directors' Meeting. 3.00 p.m.—Canadian Standard-Bred Horse Society, Annual Meeting.

- Wednesday, Feb. 2, 10.00 a.m.—Canadian Ayrshire Breeders' Association, Directors' Meeting. 2.00 p.m.—Canadian Hereford Breeders' Association, Directors' Meeting. 3.00 p.m.—Canadian Hereford Breeders' Association, Annual Meeting. 3.00 p.m.—Canadian Kennel Club, Annual Meeting. 7.30 p.m.—Canadian Pony Society, Directors' Meeting. 8.00 p.m.—Canadian Kennel Club, Directors' Meeting. 8.00 p.m.—Canadian Pony Society, Annual Meeting. 8.00 p.m.—Clydesdale Horse Association of Canada, Directors' Meeting.

- Thursday, Feb. 3, 9.00 a.m.—Ontario Sheep Breeders' Association, Directors' Meeting. 10.00 a.m.—Canadian Ayrshire Breeders' Association, Annual Meeting. 10.00 a.m.—Ontario Sheep Breeders' Association, Annual Meeting. 1.30 p.m.—Dominion Sheep Breeders' Association, Directors' Meeting. 1.30 p.m.—Clydesdale Horse Association of Canada, Annual Meeting. 7.30 p.m.—Canadian Shire Horse Association, Directors' Meeting. 8.00 p.m.—Canadian Shire Horse Association, Annual Meeting. 8.00 p.m.—Dominion Sheep Breeders' Association, Annual Meeting.

- Friday, Feb. 4, 9.00 a.m.—Ontario Berkshire Club. 9.30 a.m.—Ontario Horse Breeders' Directors' Meeting. 10.00 a.m.—Ontario Yorkshire Club. 10.30 a.m.—Ontario Horse Breeders' Annual Meeting. 1.00 p.m.—Dominion Swine Breeders' Association, Directors' Meeting. 2.00 p.m.—Dominion Swine Breeders' Association, Annual Meeting.

The Holstein-Friesian Breeders' Meeting will be held on Monday, Feb. 3, at 9.30 o'clock in the Canadian Foresters' Hall, 22 College St., Toronto.

How Another Cattleman Feeds.

Editor "The Farmer's Advocate":

I have read with great interest your articles on "Steer Feeding." As we generally feed about forty steers each winter, I thought I would write and describe the way I wintered them. Every farmer has a different method. There are two rows of stables which will accommodate 25 or 30 steers on each side. There is a large door at the end of each of the stables, through which we can drive with the sleigh or wagon and load on the manure. It is taken to the field as soon as it is hauled out. These stables are cleaned out twice a week. We believe in concrete. The floors, feeding and watering troughs are all made of cement. The concrete feeding trough runs from almost one end of the stable to the other. It is about three feet wide and two feet deep. The wooden staves are set into the cement. The two rows of steers fed out of the one trough. This kind of a trough does away with a gang-way and a feed trough. At the other end of the stable is the large, cement watering trough. The water is pumped by a small, one-and-a-half horsepower gasoline engine. The cattle are free to go and drink as they wish. These cattle are also let outside twice a day, if the weather is not too stormy.

We don't try to fatten our stockers through the winter, but try to keep them in good, growing condition. We feed them green rye, cut with the binder about two weeks before it is ripe, hay, straw and some chop, if we have it to spare. We would like to feed our stockers silage and roots, but corn and roots make so much work, and also hired help is so scarce that we have to makeshift without them.

These cattle are kept in the stables till about the 10th of May. They are then turned out on the grass, and left there till about the first of October, when they are sold. These cattle make first-class butchers' cattle. I find that yearling Shorthorns, Herefords or Aberdeen-Angus pay the best to winter over. We usually buy our stockers on the Toronto market around the first of December. The stockers always seem to be cheaper at this time of the year than earlier in the fall, but one cannot always strike the right time to buy his cattle. He has to watch the market and decide for himself. Last year I bought my stockers fairly late in the fall, and

two weeks later they dropped 10 cents a hundredweight. Waterloo Co., Ont. MOSES I. GRIMM.

Mature vs. Immature Corn for Silage.

As promised last week in our report of the Experimental Union, we are publishing here Prof. G. B. Day's findings on mature and immature corn for silage. The results follow:

There is considerable difference of opinion among farmers as to whether it is advisable to sacrifice something in quantity in order to secure maturity in corn grown for silage purposes.

During the summer of 1915 preparation was made to conduct a test with early-maturing and late-maturing corn. Longfellow was selected for the early-maturing variety, and Mammoth Southern Sweet for the late maturing. We also planted two intermediate varieties, namely—White Cap Yellow Dent and Wisconsin No. 7. The four varieties were planted on May 31, in the same field, and all had the same cultivation. The season was somewhat backward until August, so that none of the varieties reached as full a stage of maturity as would probably have been reached in a normal season. The corn was all in the silos by September 26.

At the time of cutting, the grain of the Longfellow was glazed in the firm-dough stage. That of the two medium varieties was in the milk stage, and in the case of the Mammoth Southern Sweet, the ears were just forming. The Mammoth Southern Sweet was put in a separate silo, so that comparisons could be made of this variety with the others. Up to the present, only one comparison has been practicable, namely, that of the Mammoth Southern Sweet silage with the silage from the Longfellow variety. A little later we will be able to secure comparisons of Mammoth Southern Sweet with the two medium varieties.

Whether it was owing to the season or to some other cause, germination was only fairly satisfactory, but there did not seem to be much difference among the varieties in this respect. The yields per acre of green material were as follows: Mammoth Southern Sweet, 11 tons 414 lbs.; Wisconsin No. 7, 10 tons 1,840 lbs.; White Cap Yellow Dent, 10 tons 1,685 lbs.; Longfellow, 9 tons 470 lbs. The corn lay in the sheaf for two days before it was put into the silos, and no doubt lost considerably in weight during this period.

It will be seen, therefore, that the Mammoth Southern Sweet yielded nearly two tons per acre more than the Longfellow. This, of course, was the weight of the green corn, and we cannot tell how much silage was produced per acre by the different varieties until all the silage has been fed. The silage from the Southern Sweet has a decidedly more acid smell and taste than that from the Longfellow.

As stated before, we have as yet been able to conduct tests with only two varieties—namely, Longfellow and Mammoth Southern Sweet. With these varieties two tests have been made with dairy cows.

In test number one, three cows were fed for two weeks on Mammoth Southern Sweet silage, followed by two weeks on Longfellow silage. Three other cows were fed two weeks on Longfellow silage followed by two weeks on Southern Sweet. All other kinds of feed were kept as nearly the same, throughout the four weeks, as it was possible. In making the comparison, we are using only the second week of each period, the first week being omitted to allow the cows time to become accustomed to the change in the feed.

The results in milk production are as follows: 6 cows, on Longfellow silage, produced 1,585.2 lbs. milk in one week; 6 cows, on Southern Sweet silage, produced 1,510.8 lbs. milk in one week.

This gives a difference of 74.9 lbs. milk in favor of the Longfellow silage. During each week the six cows consumed 1,512 lbs. of silage, and, since the other feed was the same throughout the test, the only conclusion open to us is that the difference in milk production was due to the difference in quality of the silage, which may or may not be correct, because in any feeding test the individuality of the animals always enters into the problem.

If we assume that 1,512 pounds of Longfellow silage produced 74.9 lbs. milk more than the same quantity of Southern Sweet silage, and if we value milk at \$1.60 per hundred (which is the price we are receiving for it) then a little mathematical operation shows that one ton of Longfellow silage, in this test, was worth to us \$1.58 more than one ton of Southern Sweet. This looks extremely high, and in the light of the following test it is probably a good deal higher than we are warranted in expecting in all cases.

Test number two was conducted in a different manner. Eight cows were fed the Southern Sweet silage for two weeks, then they were fed Longfellow silage for two weeks, followed by another two weeks period of Southern Sweet. In reckoning results, the average milk production

during the two periods on Southern Sweet was compared with the middle period on Longfellow silage. As in the previous test, only the second week of each period was considered, for reasons previously given, and throughout the six weeks all other feeds consumed by the cows were exactly the same from day to day.

In test two—8 cows produced 1,931.3 lbs. milk in one week on Longfellow silage, 8 cows produced 1,887.9 lbs. milk in one week on Southern Sweet silage.

In this test, therefore, we have a difference of 43.4 lbs. milk in favor of the Longfellow silage. The 8 cows consumed 1,778 lbs. silage during each week, and, therefore, on the assumption used in the previous test, 1,778 lbs. of Longfellow silage was worth 43.4 lbs. milk more than the same quantity of Southern Sweet silage. Valuing the milk as in the previous test, we find that Longfellow silage, in test number two, would be worth 78 cents per ton more than Southern Sweet silage. This difference, in favor of Longfellow, is barely half the difference shown in the previous test, and there is no way of explaining the variation in results, except that the individuality of the cows has had an influence in bringing about this discrepancy.

It is interesting to note, however, that in each test there was a pronounced difference in favor of the silage from the more matured corn, although it would be unsafe to make any positive statement as to just how great this difference was, with the meagre evidence before us. It will be necessary to do considerably more work along this line before we feel safe in drawing anything but the most general conclusions.

A rather interesting comparison can be made on the basis of the yield per acre.

The Longfellow yielded nine tons four hundred and seventy pounds per acre, of green material. According to test number two, and assuming that the weight of silage is the same as the weight of green material, the 9 tons 470 lbs. of Longfellow silage grown upon one acre would be worth \$7.20 more than the same weight of Southern Sweet silage. Thus, the \$7.20 additional value of the Longfellow silage on the one acre, must be set off against the extra two tons of Southern Sweet silage produced per acre, so that in test number two, no particular advantage is shown in favor of either variety when it comes to value of product per acre.

Using the same process in test number one, we would have \$14.59 to set off against the extra two tons of Southern Sweet silage, so that we may safely say the test number one shows a marked advantage in favor of the early-maturing but lighter-yielding variety.

The figures just given are not entirely satisfactory, because they should be based upon the yield of silage per acre and not upon the green material, but, as previously stated, we cannot ascertain the actual yield of the silage until all the silage has been fed.

Though incomplete, the figures given are interesting and suggestive, and indicate the necessity for further work along this line.

FARM.

Letters From Correspondents.

By Peter McArthur.

Everybody has had the gripe, and not wishing to seem different or peculiar I have had it too. As you have all had it, you will know just how a fellow feels after swallowing all kinds of brews and having forced sweats, for several dreary and shivery days. You know what it means to be as sensitive to drafts and cold air as was the negro who was picked up and turned over to the morgue as being frozen to death. The authorities decided to cremate him. They put him in the incinerating furnace and heated it up to about one thousand degrees. Shortly afterwards someone opened the door of the furnace to see how matters were progressing, and an indignant voice bawled through the white heat, "Hey you! Shut dat doah!" Like that colored brother I feel as if I were never going to be warm again, and anyone who allows a breath of cold air to reach me is treated as a mortal enemy.

But that is only the physical side of it. The mental side is even worse. Recovery from the gripe means a period of mental hopelessness. One's outlook on life is without a ray of sunshine, and even the stray thoughts that flutter into our minds are like those that haunted Poe when he wrote of shaves: "Flapping from out their condor wings invisible woe."

But no matter how one feels the weekly grind of work must be attended to, and thinking that I might get some good ideas from correspondents who favor me with letters, I began to go through my answered mail. You can imagine how surprised I found the first letter. A correspondent told me that they were about to have a delirious neighborhood on the following

resolution: "Resolved that Enthusiasm does more to promote success than Knowledge." At that moment both my enthusiasm and knowledge were at about the lowest ebb I have known them to be for many a year. Even if circumstances had not compelled me to make a cast-iron rule never to try to help out debaters, the subject was just about the very last on which I could offer helpful suggestions. For three days I had been sweating knowledge out of my system and had not yet had time to let nature restore my enthusiasm, and this correspondent's letter came asking for help. At least it made me laugh, and then I felt better. As most of the things that are accomplished in the world are due to a proper combination of enthusiasm and knowledge I do not see how they can be profitably divorced, even for purposes of debate. Enthusiasm without knowledge causes most of the fool failures that trouble the world, and knowledge without enthusiasm is the most futile thing imaginable. What we need is to get that team hitched together permanently and broken to harness; then we shall be able to do things that are worth while. They should never be separated, even for a literary society debate.

Another correspondent who neglected an invariable rule of journalism, that of signing his name, sent me a paragraph which I shall quote. Even though it does not do to encourage anonymous correspondents.

"I read your article in this week's 'Farmer's Advocate' on enlisting in rural districts. I have been discussing this with some of my neighbors, and we think that even if a good many men were taken from the rural districts it would still be possible to carry on most of the farm work. Crops should be sown so that the harvesting would not all come on at once. Also, although the practice of exchanging work is not usually very satisfactory, I believe that a good deal more of this could be done this year. It would be well if all works of improvement were postponed, both in town and country, till after the war. This would both save money and release men for the front. It is indeed a question whether production or large armies are more important just now. In the small towns there are many laborers available for farm work. I think that even in the rural districts we can still raise more men."

In reviewing this subject two weeks ago I dealt only with a section with which I am personally familiar, and no doubt conditions are different in other parts of the country. Since reading this letter I applied the population test to a village adjoining the block of farms dealt with previously. While I cannot be so exact in my figures, I am practically convinced that besides not having surplus laborers to help the farmers it would be necessary to draw quite heavily on the married men to give the necessary number of recruits. The question is one of national efficiency in a case where the nation as a whole is at war. While those in authority have made no ruling on the subject up to the present writing, I found while in Toronto and other cities last week, that many city men hold that the farmers should give as full a quota, according to population, as the cities and towns. They will not allow that the farmers should be treated in the same manner as the munition workers, even though the Scottish letter printed in "The Farmer's Advocate" some weeks ago, reported that in the Old Country farm laborers are set apart as the last to be called, and farmer's sons are obliged to go before tribunals, which will decide whether they are indispensable. Of course, there were city men who were inclined to view the matter broadly, and who felt that any limiting of production during the war might lead to disaster. This is another case where we need patriotic Enthusiasm and economic Knowledge working hand in hand.

The suggestion of my correspondent that "change work" would help out the situation, should find many to favor it in Canada, for the land was cleared and brought into cultivation by men of neighborly spirit who helped one another with their work. Still, as my correspondent notes, difficulties would sometimes arise. I remember a pioneer who complained that he had to give up "change work" because his neighbors expected him to give them long days in the summer, and then pay him back in short days in the winter.

The Best of Them All.

We take five farm papers. There is none to touch "The Farmer's Advocate" yet. We have taken it about 40 years, and found it a big help to us.

JAS. McPHERSON & SONS,
Grey Co., Ont.

A subscriber, W. Grlerson, writes that he has found that by putting one-half to one teaspoonful of common salt in the coal oil in the lantern, the chimney does not smoke up nearly so badly. He has tried the same with lamps and finds it works very well.

Clover Seed, Beans, Peas and Good Corn Scarce.

In the report of the Ontario Agricultural and Experimental Union, which appeared in our last week's issue, readers would get some idea of the prospects for seed grain, grass seeds and garden vegetables and root seeds, as outlined at that meeting by Geo. H. Clark, Seed Commissioner for the Dominion. There is going to be a shortage of clovers and some other seeds, and the following paper read at the "Union" meeting should be studied by our readers:

The climatic conditions in the Province of Ontario during last season were such as to create unusual conditions as affecting the supply of home-grown seed. Although the quality is somewhat inferior to normal, there will be no shortage in the supply of home-grown seed of spring wheat, oats and barley. There will be a shortage in seed beans and peas, also in rape and vetch seeds, and the supply of home-grown red clover and alfalfa seed is extremely short and the quality decidedly inferior. The unfavorable weather that caused so much damage to fall wheat in Southwestern Ontario did less damage to the spring wheat crop in Northern and Eastern Ontario, and the supply of home-grown spring wheat for seed is scarcely less than normal, and the quality on the whole is satisfactory.

Considerable alarm has been expressed regarding the supply of home-grown seed oats. They are badly discolored and unattractive in appearance, but are nevertheless of good utility value for seeding. Considerable of the oat crop, however, was harvested in a very moist condition, and farmers should be warned against the dangers of heating and musting as soon as the warm, spring weather has commenced. Oats in bin should be thoroughly cleaned and re-stored under conditions favorable to their drying. Most farmers naturally like to sow barley, as well as other grain, that is excellent in appearance. This year practically all of the barley is badly discolored. Care should be taken with the barley as with the oats to see that the seed sown has not been damaged as the result of excessive moisture, and the cleaning and grading of all cereal grains should be more thorough than usual.

Any shortage in the supply of Marquis or Red Fife seed wheat, white oats or six-rowed barley in the Province of Ontario may this year be made up from the abundant supply of good seed that is available in the Prairie Provinces. On the first of December last seed inspectors were placed at each of the government interior terminal elevators at Saskatoon, Moose Jaw and Calgary, and carlots of good, sound, reasonably pure and clean grain of the kinds mentioned are being kept separate and made available in commerce under special grades for seed grain.

Good seed of beans and peas is unusually scarce this year, and will be high in price. If this Experimental Union were in a position to import a few car loads of the best varieties of peas and beans for distribution at cost to farmers in the pea and bean districts in Ontario, that would be exceedingly helpful this year.

There was practically no alfalfa seed in the Province of Ontario last year, and the supplies available for importation are exceedingly short and of questionable quality. Experience has shown that it is almost a waste to sow alfalfa seed in Southwestern Ontario that has been imported from a southern climate. Ontario farmers this year would be well advised to defer sowing alfalfa unless they can have definite assurance that the supplies of seed purchased by them have come from the northwestern states, which now seems to be the only reliable source of supply for Canadian use.

In normal years the Province of Ontario is able to export at least one-half of the red clover seed produced. This year the Ontario-grown red clover seed appears to be less than one-half of the requirements for home use, and the home-grown seed that is available is much more than usually polluted with weed seeds, and the general quality is mostly inferior to No. 2 grade. Fortunately, red clover seed of excellent quality is being imported in considerable quantity from Idaho, Montana and other northwestern states. The prices are and will continue to be unusually high. Supplies of Ontario-grown alsike seed are only slightly below normal and the quality is fair to good, the crop having been mostly harvested before being seriously damaged by wet weather. On account of the scarcity in red clover and alfalfa seed supplies, alsike seed, however, is more in demand for home use and for export, and prices are higher than would otherwise warrant. At least two-thirds of the timothy seed supplies continues to come from the middle western states where the supplies are reported to be below normal. Timothy seed from this district usually comes to market in a more or less hulled condition. The utility value of this hulled seed is scarcely less than of seed of the best general appearance; but there is a popular prejudice against hulled seed on the part of both dealers and farmers, and in consequence hulled seed is put into No. 2 and No. 3 standard grades.

Beans, Peas and Good Corn Scarce.

Report of the Ontario Agricultural and Horticultural Union, which appeared in our last issue, would get some idea of the present conditions in respect to seed grain, grass seeds and garden seeds, as outlined at that meeting. H. Clark, Seed Commissioner for Ontario, is going to be a shortage of some other seeds, and the following at the "Union" meeting should be read:

Conditions in the Province of Ontario last season were such as to create a shortage of seed grain, grass seeds and garden seeds. Although the quality is somewhat normal, there will be no shortage of home-grown seed of spring wheat and peas, also in rape and the supply of home-grown red clover seed is extremely short and the quality inferior. The unfavorable conditions caused so much damage to fall wheat in western Ontario did less damage to the crop in Northern and Eastern Ontario. The supply of home-grown spring wheat is scarcely less than normal, and the whole is satisfactory.

Alarm has been expressed regarding the quality of home-grown seed oats. They are of a normal and unattractive appearance, nevertheless of good utility value. Considerable of the oat crop, however, is in a very moist condition, and should be warned against the danger of mustering as soon as the weather has commenced. Oats in the West are thoroughly cleaned and restored to a favorable condition for their drying. Most of the oat crop, as well as the quality, is excellent in appearance. This is all of the barley is badly damaged and should be taken with the barley to see that the seed sown has not been the result of excessive moistening and grading of all cereal crops more thorough than usual.

In the supply of Marquis or Red White oats or six-rowed barley Ontario may this year be made an abundant supply of good seed that the Prairie Provinces. On the last seed inspectors were placed government interior terminal elevators, Moose Jaw and Calgary, and sound, reasonably pure and the kinds mentioned are being made available in commerce for seed grain.

Beans and peas is unusually high and will be high in price. If the Union were in a position to import the best varieties of peas and beans at cost to farmers in Ontario, that would be a very helpful thing.

There is no alfalfa seed in the Province last year, and the supplies of alfalfa are exceedingly short and of poor quality. Experience has almost a waste to sow alfalfa in Ontario that has been in the same climate. Ontario farmers are well advised to defer sowing alfalfa until they can have definite assurance of seed purchased by them have been from the western states, which now is the only reliable source of supply.

The Province of Ontario is short of one-half of the red clover seed this year the Ontario-grown red clover seed is less than one-half of the amount available for home use, and the home-grown seed is much more than the amount available in commerce for seed grain.

For seed of excellent quality in considerable quantity from other northwestern states. It will continue to be unusually scarce in Ontario-grown seed are normal and the quality is good. The crop having been mostly seriously damaged by wet weather, the scarcity in red clover seed, alsike seed, however, for home use and for export is higher than would otherwise be the case. Two-thirds of the timothy seed comes from the middle of the supplies are reported to be of good quality. Timothy seed from this district is in a more or less normal condition, but there is a popular prejudice on the part of both dealers and consumers in consequence of the fact that the standard hulled seed and No. 3 standard grades.

The best value in timothy seed is to be obtained in No. 2 grade of seed that will give a high purity test in respect to weed seeds. While it is true that our supplies of timothy seed imported into Canada come from land that has a selling value ranging from \$75 to \$150 per acre, while we have in Canada large areas of land admirably suited to the production of timothy seed and of a value ranging from \$10 to \$25 per acre, is a problem that is difficult to understand. Canadian supplies of Dwarf Essex rape and vetch seeds have in past years come principally from Europe. Both the quantity and quality of these seeds for the ensuing year will continue to be very uncertain. Farmers should be prepared to use alternative crops.

Supplies of seed corn for growers of silage this year present difficulties that are considerably out of the ordinary, yet our information is not sufficient to make a definite statement. Rather more than one-half of our supplies of seed corn come from the western states, where the conditions for maturing and harvesting the crop were not good. District officers of the Seed Branch are now engaged in investigating the condition of the seed corn supply in Southwestern Ontario. In the month of November most of the corn that had been saved for seed gave a good vitality test, but it contained much too high a percentage of moisture, and the injury to it is apt to come with the alternating freezing and thawing between the middle of February and the middle of April. Unfortunately our seed corn growers in Southwestern Ontario have not followed the practices of the best growers in western states in erecting proper seed corn drying houses. When the weather conditions during the harvesting of seed corn are favorable, then corn that has been housed in corn cribs through the winter and spring months is satisfactory and can be sold cheaply; but in a year like the present, seed corn that was put into the corn cribs in a moist condition is apt to suffer heavy deterioration before orders are received from the ensilage growers. The conditions that exist at the present time have had careful consideration, but I desire to take this opportunity to impress upon the growers of silage corn throughout the Province of Ontario that they will be well advised to place their orders for seed corn and have it shipped to them before the end of the present month. Any of the growers of corn for silage are certainly in a position to take care of a few bushels of seed corn and preserve its vitality better than by leaving it in the corn cribs of the grower during the period of year when the greatest damage to its vitality is likely to result.

Field root seed supplies are short only in particular sorts. There is a satisfactory supply of mangel seed for 1916 planting. Swede turnips will be scarce in several of the favored varieties, and seed of field carrots is also slightly below normal. Among the garden vegetables seeds the principal shortages are in American-grown stocks, particularly in garden peas and onions, in both of which there is a pronounced shortage. Among the European grown stocks, spinach, which comes largely from Holland, and garden carrots, which we have been accustomed to get from Northern France, are considerably below the average, and there may not be enough to meet the demand.

The Ontario-grown supplies of field root and garden seeds from the crop of 1915 are of little importance commercially, but of very great importance in experience to those farmers and gardeners who undertook the experiment of growing some for themselves and their neighbors. The production of these seeds in Europe has been much reduced, and promises to be still further reduced this year. The surplus stocks carried over from previous years have become almost depleted in most lines, and I consider now that it is of very great importance that those farmers and gardeners in Ontario who have gained a little experience in the production of field root and garden seeds during 1915 shall put that experience into wider practice in order to insure a seed supply for 1917.

A Plan for Loading Ice.

Editor "The Farmer's Advocate":

I was much interested in the article on "Cutting, Hauling and Storing Ice" in your issue of Jan. 6. I might say we tried cutting with a big-toothed, cross-cut saw, but were never able to cut very fast, or to get the cakes square. The saw would run in spite of us, but with a heavier saw, such as those used by our gang sawmills, which have very big teeth, we find we can make much better progress, cutting as many as one hundred and fifty cakes, 18 by 18 inches, in a day. Our method of loading is very simple. A ladder of two by three hardwood, ten feet long, with four rungs and two iron hooks bolted to one end, is used. Two men are all that is necessary to do the loading. Take an axe and chip the ice at the edge of the hole so you will not have a sharp corner to draw your ladder over. One should stand on either side of the ladder and push the end under a cake until the hooks catch, then catch the rung with the ice-hook and the other hand on the ladder, when the ladder may

quite easily be drawn out. Lay one end on the sled and catch the ice with ice-hook and slide it on sled. With a little practice two men can soon load very fast.

N. B. W. B. G.

Why Not "Standardize" Agricultural Teaching?

Editor "The Farmer's Advocate":

When Prof. Grisdale speaks to farmers he always has something interesting and practical to say, and he sometimes says things in a blunt way that rather disagree with the teachings of some of our other professors and teachers, who we perhaps equally respected for their investigations and work in agriculture.

We like to hear them all, and to applaud them for their genuine interest in the great business of farming, the first and most important business in the country. But sometimes, 'tis true, these earnest professors do puzzle us a bit when we don't agree with their views, and put the views of one against the views of another, when laying our plans for the season's crops. We like to hear them all and we would like to follow them all, but in practice that is impossible, because they don't seem to be all going the same way.

For instance, in his speech to the Eastern Ontario Dairymen's Convention, reported on page 49 of your Jan. 13 issue, Prof. Grisdale tells us: "No crop does better in Eastern Ontario than oats, and Banner is the best of them all."

Without wishing to be rude to Mr. Grisdale, and almost as if he didn't hear him, Prof. Zavitz tells us twenty times a year, in accents clear and strong, that the oat for Ontario farmers to grow, beyond all comparison, is O. A. C. 72, and that we're losing money every year we don't grow it. Furthermore, he again mildly contradicts Mr. Grisdale by telling us that there is a better crop for Ontario than oats, and that is a mixture of oats and barley, sown one bushel of each to the acre.

The farmer "pays his money" for the contradictory advice, and I suppose he must "take his choice." I have a pessimistic friend who unceasingly preaches that all life is made up of contradictions, so there is no reason for the farmer who reads the mixed advice to be downhearted. We can prove these things to our own liking by trying both. There is usually some good reason for refusing to be downhearted. But does it not seem to be almost time for our professors and experimenters to get together, in the interest of the general good, thoroughly thresh out these differences, and "standardize" their recommendations, just as manufacturers have found it beneficial to standardize certain parts of machinery? Would it not add weight to the recommendations of our experiment stations and farms to be all saying the same thing on the same subject? Would it not look to the "average farmer," who is not a close student or analyst of seemingly mixed advice, that when all the professors say the same thing there must certainly be "something in it"? Would it not tend to eliminate the farmer's still-prevailing attitude of skepticism and scorn towards "them there arm-chair farmers who come down and try to teach us a lot of rubbish that we know already," as I heard a farmer say last winter when the "Patriotism and Production" meeting was held at Coburg? And the same farmer, who was "no slouch of a farmer" either, had this to say of agricultural experts in general: "What's the use of listening to them? They all tell a different story, just the same as three or four common farmers would do if you asked their opinion on anything you like to mention."

Would it not help agriculture, would it not raise the standard of farming in this country a great deal if this all-too-characteristic attitude of the farmer could be broken down and he could be made to realize that what the professors, agricultural representatives, etc., all tell us is not merely academic half-knowledge, but that there is really "something to it"?

If the plain, every-day farmer of the back concessions could be won over to thoroughly "believe in" the teachings of our agricultural colleges and farms, shouldn't we have fewer scrub bulls, better crops, cleaner farms, and a brighter, more prosperous, more co-operating community? And would it not be worth while for our experimental farms, colleges and professors to sink their differences and prejudices, where any exist, as they apparently do in some cases, and "standardize" the knowledge that has been gained by all the years of experimentation?

Surely if our professors were to get together with that end in view they could do much to eliminate what now looks like confusion and uncertainty. In his speech at Renfrew Prof. Grisdale came out flat-footed in favor of planting silo corn in drills instead of hills, with which most who have tried the two methods will probably agree. And yet a chorus of other professors would, in all likelihood, go up with opposite advice! Is it not time that our mentors should give us a unanimous verdict on this long-debated question of hills versus drills? Could

they not give us something authentic, something to swear by, that all other swearing might cease?

It seems to the onlooker that if some standardization of agricultural findings could be worked out with regard to some of the unsettled questions of every-day import, our agricultural farms and colleges and the professors who adorn them would be immensely populated, hence more potent for effective results, and that all Canada in consequence would take a decided step forward.

Northumberland Co., Ont. W. L. MARTIN.

THE DAIRY.

Raising the Dairy Cow.

A profitable cow cannot be raised in a year. It dates back to the ancestors, and if they were unprofitable the chances are that their progeny will be unprofitable, and vice versa. Having bred right, the dairyman must start his feeding when the calf is in the embryo stage, by properly caring for the mother, and then be prepared to care for and feed the young calf from the time it is dropped, the proper rations required to produce a strong, lusty animal. It is well known that a neglected heifer calf never makes the most profitable dairy cow. The value of the calf at birth depends largely on its breeding, but the feed and care it receives while young is an important factor in deciding its future usefulness.

Whether or not the calf is allowed to run with the cow the first two or three days is a matter of custom, but it should receive whole milk for the first two weeks at least, and then gradually be made accustomed to skim-milk. The change may be made at the rate of one pound per day, and increased until the calf is getting about fifteen pounds of skim-milk per day. Many feeders fail to have their calves do well when fed on skim-milk, and immediately decide that skim-milk is of little value as a feed for calves. Other feeders will point with pride to a thrifty, sleek-looking calf, and be particular to mention that it was raised on skim-milk. Why the difference? The one has neglected to pay attention to keeping the pen clean and dry; the milk warmed to blood temperature; the pails clean; or the same amount of milk fed at regular intervals. These things are important, and attending to them or not attending to them is the difference between success and failure.

Skim-milk contains all the nutriment found in whole milk for the building of bone and muscle, it merely lacks the fat content, which goes to supply heat and energy in the body. This can be supplied by the cereal grains or linseed meal, at a lower cost than by feeding the fat of milk. Neither whole nor skim-milk is sufficient in itself for the growing calf. The calf should be taught to eat concentrates, as ground or whole oats, linseed meal or bran, also alfalfa or clover hay. By putting a little meal in the bottom of the pail after the milk is finished and keeping fresh meal and hay before the calf, it will soon learn to eat. After it has become accustomed to eating, only as much as it will clean up, should be fed. A calf six weeks old will usually eat from one-half to one pound of concentrates per day. An important point is to keep the feed box, pen and pails perfectly clean. With proper attention along with suitable grains and roughage, a thrifty calf should gain from one-and-one-half to two pounds per day. The aim should not be to fatten the calf, but to keep it in a vigorous, growing condition, especially when being raised for dairy purposes.

If the calf is dropped in the fall it will be able to go on pasture in the spring and look after itself. If it is a spring calf, it will be best to keep it in the stable or paddock all summer in order that it may receive attention. As a yearling, the best winter quarters will be to run a number of them loose in a large box stall or sheltered shed. It need not be too warm, as nature will supply them with a coat of hair sufficient to keep them warm. Silage, roots and good clover hay, with a little salt and plenty of water, will bring them through the winter in prime condition. The heifers should be bred to drop their first calf at about thirty months of age, and then milked as near the full year as possible, it being claimed that a heifer that is only milked seven or eight months the first lactation period will have a tendency to go dry in succeeding years after milking about that length of time.

It is a good plan to frequently handle the heifer before she freshens the first time. Less trouble will then be experienced in getting her accustomed to being milked. As the dairy animal is more or less of a nervous disposition, kindness at all times is essential if the highest returns are to be secured. The cow will also give a larger flow of milk throughout the year if fed and milked at regular intervals.

HORTICULTURE.

Information regarding the quality of apples which find most ready sale on the South African market, has several times been printed through the auspices of the Department of Trade and

Commerce for Canada. Medium-sized apples, it is stated, are preferred; those that will pack about 138 to the box being considered very acceptable. Growers should file such information or remember it in order to make a better impression upon foreign markets when the time comes to ship farther abroad.

It has been estimated that Ontario has more than 55,000 acres planted to garden crops annually.

Vegetable experts claim that acclimatized seed will produce better results, nine times out of ten, than similar seed introduced from distant countries.

A Splendid Fruit Growers' Convention Tries to Solve Marketing Problems.

In recent years the Ontario Fruit Growers' Association has not held a convention that surpassed or even equalled, in the features that make for success, the fifty-sixth annual convention held at the Carls-Rite Hotel, Toronto, on January 19, 20 and 21. A good attendance gathered, and at the close of several sessions there were delegates who clamored for an extension of time that more questions might be asked or that more discussion might follow. All were awake, and all had come for a purpose. The poor crop of 1915 and the small prices of 1914 had enlivened rather than extinguished the enthusiasm of the apple grower. The enormous peach and cherry crops of the past season aroused the producers of basket fruits to the appreciation of the magnitude of problems which they must overcome. Competition in all lines has caused fruit growers to realize that no details are too small to be considered, and that items such as containers, grading, packing, branding, etc., must receive their undivided attention, and must be perfected so far as possible through their co-operative efforts. All the phases of distribution, too, must receive no small amount of study, for the margin of profit largely depends upon the thoroughness of the systems put into practice. Behind all this is the act of producing the commodity they have to sell, and it alone is worthy of all their time. Their field of labor is broad; their interests many. The growers spent three busy days, in which time they discussed cultural methods to some extent, but the main theme was marketing and distributing. The Executive and the Secretary, P. W. Hodgetts, Toronto, were quite aware of the conditions under which the industry is laboring, for they had selected a list of subjects and speakers which made an interesting program from beginning to end.

The President, Elmer Lick, Oshawa, in opening the Convention referred briefly to the two much esteemed and active members of the Association, the late Robt. Thompson, and the late Major A. L. Kimmins, who have passed away since the last convention. The war in Europe has already caused the fruit growers of Ontario a very heavy loss, and it is likely to be more serious in the future. The interference with and increased cost of transportation, and in some cases lessened demand, has interfered with the marketing of fruit to a serious extent. One feature that must be faced is the necessity of increased revenue for war purposes, and the certainty of heavier taxes to raise this revenue. The President referred to the exceptional climatic conditions of last year. With special reference to peaches, he said they never sold cheaper in the small towns of Ontario than in 1915. "A few years ago a basket of peaches, worth to the producer 40 to 50 cents, sold to the consumer at \$1.00. Now, when the price to consumer is 50 to 60 cents, what does the producer get? The President hoped that by advertising and co-operative efforts peaches could still be sold with a fair margin of profit to the producer.

Mr. Lick predicted a heavy crop of apples for 1916. "Apples for several years," he said "have averaged about \$1.00 per barrel, more in the odd years than in the even years. Thus a car of mixed varieties that was worth \$3 to \$3.25 f. o. b., in 1915, was worth \$2 or thereabouts in 1914, was worth \$3 in 1913, and in 1912 about \$2.15. The probability is that we may expect a \$2 price for 1916." The crop of apples in 1916, he continued, is likely to be large all over America. The marketing conditions are beyond our knowledge. If European demand is small, as seems likely, then in order to get fair prices in Western Canada in competition with British Columbia and Western States, will be a problem.

It was also pointed out that unless the expenses between the producer and consumer are very much lessened the net results to the grower will be very small. If, on the other hand, the prices to the consumer can, through co-operation, be kept low and at the same time transportation and distribution expenses reduced to the lowest possible points, then through the larger market resulting from low prices, there can yet be returns to the grower that will pay well for the labor of production. Personally, Mr. Lick was not afraid of over-production, except temporarily, and urged that when fruit of any kind is plentiful, market it, if it is of high quality and will pay picking and packing costs. The President urged economy and co-operation in every way possible, and higher standards for packing.

Transportation Report.

The agricultural industry is to-day producing over one-third of the total freight earnings of the railways of Canada, and yet the shipping end of this industry is probably given less attention than any other branch. In these words Geo. E. McIntosh, Forest, Transportation Agent for the Association, drew the attention of the delegates to the relation of the agriculturist to the railways. Manufacturers, Boards of Trade, and similar organizations found it necessary to continually study and interpret transportation problems. He pointed out that it was quite as necessary for farmers to do likewise, especially fruit growers who were marketing a perishable commodity. "It is true, that the prosperity of our country depends largely upon the railways, and Canada is still in a condition that railways and more railways are a necessity to its prosperity, but it is up to those who represent the different industries to see that commercial progress and development are not checked by the imposition of prohibitory freight or express charges, conditions or privileges, by those who know little of the productive or marketing conditions." With regard to fruit Mr. McIntosh has found that the railways were willing to co-operate in some ways, but their methods of procedure were very slow without the aid of the Railway Commission.

With reference to the power of the Railway Commission the speaker said: "It has no power to award damages for delay in transit; it cannot issue an order in reference to rough handling, or it has no jurisdiction over the settlement of claims; it cannot issue an order in reference to delays, jolting, or rough coupling; it has no jurisdiction over navigation companies, other than those controlled by a railway company; it cannot issue an order for the extension of a privilege." In many respects, he said, it is absolutely helpless.

At the Convention the speaker advocated an extension of the powers which have been entrusted to the Railway Commission. He suggested that legislation regarding the following points should be enacted, and thus add to the powers of the Commission:

To enable shippers to secure cars in reasonable time; to enable farmers, stockmen and fruit growers to promptly market perishable freight; to empower the Commission, when necessary, to provide a minimum speed limit; to enable contracts to be made and carried out on a basis of reasonable service; to make railroads responsible for failure of such duties; to fix reasonable penalties to ensure reasonable service; to ensure proper handling of shipments; to enable the Railway Commission to make rules and regulations with respect thereto; to provide for the establishment of reasonable reciprocal demurrage charges; to secure under proper rules the unloading and reloading of cars by shippers; to exempt railroads from penalties where compliance with the law is prevented by causes not reasonably anticipated, or from accident; railroads which give reasonable service need not fear such a law; those which do not give such service should be compelled to do so; give shippers a fair show to secure a fair service for a fair rate.

In February last the Canadian Freight Association on behalf of the Railway Commission under the jurisdiction of the Board made application for a general increase of freight rates. It was proposed to advance fifth class rates 1 cent, and to practically wipe out the Fruit Commodity rates to Western Canadian points, substituting therefor a rate advance of from 5 cents to 30 cents per 100 pounds. Two sittings of the Board were attended by Mr. McIntosh in behalf of the fruit interests, an effort being made to show:

(a) That the increase was unwarranted, and would be highly prejudicial to the fruit interests generally; (b) that an increase would hamper and deter expansion of the fruit trade; (c) that it would minimize orchard development and lessen production; (d) that it would create an advantage to our competitors in the Western Canadian markets.

The commodity rate was first established by an order of the Board in 1904, when fresh fruits were lowered from the third to the fourth class in car lots to Winnipeg, Portage la Prairie and Brandon. Other points were added in 1908, and as late as 1914 still other points were added by the railways without request. It was pointed out that the establishing of this rate relieved for the Ontario growers a threatened condition of over-production of fresh fruits; it opened a market

that not only resulted in encouraging increased planting and an extension of producing districts, but it developed a freight tonnage of from four car loads in 1904 to about 750 car loads to the Western markets in 1915. The counties of Prince Edward, Northumberland and Ontario, in Eastern Ontario, and Lambton County in Western Ontario would be ruined as a producing centre, because the larger producing section would flood their local markets, and they are not producing in sufficient quantity to compete. With prospects of greater production and the present depressed conditions, growers require greater advantages in the Western markets than they at present have. Ontario has to compete in that market against the Western Province, with its shorter haul, and against the States of Washington, Oregon, Idaho and Montana, which market these States use as a dumping ground, thereby regulating the prices. This being the condition, an increase of freight rates from Ontario could not be met by increased prices for the product, and would, therefore, create a decided advantage for our competitors. The States mentioned marketed last season in 47 different Western Canadian cities at a freight rate of from 80 cents to \$1.12½ on soft fruits, and a blanket rate of 75 cents on apples. In fact, it is only in the nearby markets of the West that we can successfully compete even under present conditions. The proposed increase would mean an additional charge of:

\$58 per car to Battleford and North.
\$48 per car to Brandon.
\$52 per care to Camrose.
\$52 per car to Edmonton.
\$56 per car to Medicine Hat.
\$56 per car to Sas'atoon.
\$30 per car to Winnipeg.
\$44 per car to Portage la Prairie.

The decision of the Board on this appeal has not yet been given, and the old rates stand for the present.

At the Convention in 1913 Mr. McIntosh recommended that the Association put forth an effort to bring about legislation placing navigation companies under the jurisdiction of the Railway Commission. Owing to the war little legislation has been enacted, but some of the disadvantages to shippers which this bill, when it became an Act, was intended to rectify have been removed by the companies themselves, a particular instance being the service to Sault Ste. Marie.

With regard to the supply of refrigerator cars the speaker said that one company criticised two years ago had reduced their equipment from 955 cars in 1908 to 941 cars in 1912, but to-day is credited with 1,990 refrigerator cars. Other lines have also made increases, there being 4,716 refrigerator cars to-day compared with 2,466 in 1909. The strain upon the railway companies was explained in the following words: "It requires an equivalent of say 100,000 cars to market the fruit and vegetable crop of Ontario. These cars have an average haul of 216 miles. The total box and refrigerator car equipment of all the railways operating in Canada is 151,323, so that approximately two-thirds of the entire freight car supply would be required to move the output of this great industry. In 1914 during the apple movement in Ontario my records show that more refrigerator cars were required for this commodity alone than all the Canadian railways possessed."

Packages.

The question of containers is of vital interest to every grower who has any quantity of fruit to market. Different producers have ideas of their own regarding the matter, and they have many types of baskets and boxes conforming with these various ideas. Ontario growers differ with the producers of British Columbia on the matter, and they have different styles of containers. But the variance is not between provinces only, for in the Niagara District alone growers cannot agree as to the proper package for berries and other fruits. This all leads to inconvenience in loading and shipping, and the multitudinous styles and types of packages are confusing to the consuming public. Growers feel that something should be done to standardize containers, and if all cannot be satisfied with the outcome they will, at least, be able to feel that the packages are standards.

BERRY CRATES AND CONTAINERS.

In dealing with this matter, J. B. Fairbairn, Beamsville, presented and advocated the 27-basket crate. The crate which has been in use for some

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Experts claim that acclimatized seed will give better results, nine times out of ten, than seed introduced from distant coun-

Marketing Problems.

Resulted in encouraging increased production in the producing districts, and an extension of freight tonnage of from four to five car loads in 1914 to about 750 car loads in the first six months of 1915. The counties of Prince Edward, Northumberland and Ontario, in East- and Lambton County in Western Ontario, and in the producing centre, have been ruined as a producing centre, and larger producing section would flood the markets, and they are not producing quantity to compete. With prospects of production and the present depressed prices require greater advantages in the markets than they at present have. To compete in that market against the Province, with its shorter haul, and the States of Washington, Oregon, Idaho and California, which market these States use as a standard, thereby regulating the prices, in a condition, an increase of freight rates could not be met by increased production, and would, therefore, be a disadvantage for our competitors. The market last season in 47 Canadian cities at a freight rate of \$1.12½ on soft fruits, and a rate of 75 cents on apples. In fact, it is nearly impossible for the West that to compete even under present conditions. The proposed increase would mean a charge of:

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- to Brandon.
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FRUITS AND CONTAINERS.

In this matter, J. B. Fairbairn, ed and advocated the 27-basket which has been in use for some

time is one holding 24 baskets, with the sides made of veneer and equipped with a handle over the top. By baskets is meant the container for berries and such fruit which holds four-fifths of a quart, and which is in common use in Ontario. The 27-basket crate advocated by Mr. Fairbairn is made of one-quarter-inch material, and contains boxes or baskets in three tiers. Between each layer or tier is an intersection made of veneer, to which is attached 4 cleats, making in all a thickness of about ½ inch or more. The function of the cleats is to elevate the layer above, in order to give ventilation and allow of the boxes being filled sufficiently to carry some distance and arrive at their destination still sufficiently full to show and sell well. Were it not for the cleats the upper layer of boxes would crush the top layer of berries in the boxes beneath, if they were full. If they are not full when being shipped, the reader can readily understand how they would appear after transportation for some distance in warm weather. The lid of the 27-basket crate is made with two projecting cleats on one side which fit beneath a strip along the outer edge of the top, and, which, in the end, forms a part of the cover itself. On the other side of the lid is a piece of metal which slips under a second strip on the top. With this arrangement the lid or cover can be put on or taken off with convenience. There are no nails to draw, and the contents of the crate can be inspected by the purchaser with the greatest possible ease. The container has no handle. This feature Mr. Fairbairn considered an advantage over the 24-basket crate, in that express company employees often carry two of the latter crates at a time, and in their manner of handling them the handle often gives way with sad results from the shipper's viewpoint. The 27-basket crates must be handled one at a time, and the speaker said they were consequently less liable to injury. He had investigated the matter by watching them being sold in the city of Toronto. The 27-basket crate was given preference and would sell, according to his observation, more readily than the 24-basket crate. The commission men also favored the container recommended by Mr. Fairbairn.

Producers from some of the local points told the delegates that the 27-basket crate had been adopted at their shipping points in preference to others. It was brought out by another, however, that the 24-basket crate was still the favorite with him for shipments on order to smaller consuming centers, while the crate being advocated by the speaker was perhaps a good one for such markets as Toronto or Montreal. As to price Mr. Fairbairn said, that in large orders, the container for 27 baskets could be purchased for about the same as the package containing 24.

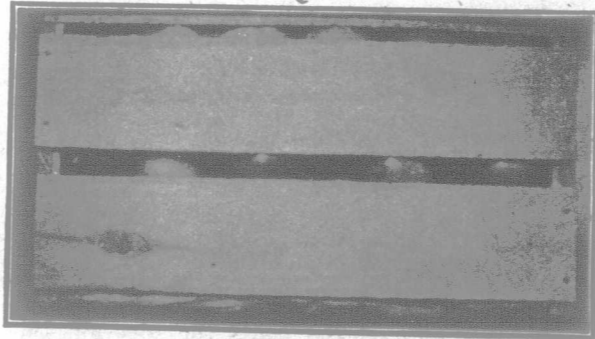
THE ECONOMY CRATE.

As a package for apples the Economy crate sprang into existence in Ontario last year on account of the peculiar quality of apples which producers had to market. J. W. Clark, Cainsville, explained the advantages of the open crate or Economy crate, as it is called, for use in a season such as that of 1915. The crate shown by Mr. Clark was 10 x 12½ x 18 inches, inside measurements, and its cubical contents exceeded those of the standard apple box by 13 cubic inches. It would hold about 45 lbs. of apples net. The sides, the top and the bottom were not solid but slatted, and between these slats the contents of the box could be seen. The speaker recommended having cleats on top and bottom to prevent any bruising of fruit within, especially when a "bulge" resulted from the crate being quite full, which was often the case. Originally the crate had one hand-hold, but Mr. Clark had found it advantageous to have two hand-holds, so the dealer would open the side which had been faced. Not being a closed package, according to the understanding at the present time, it does not come under the limitations of the Inspection and Sale Act, and it is not necessary to brand the package as containing any particular grade of apples. In 1915, some large, well-colored apples were debarred from the No. 1 package on account of some scab or ink spot which did not injure their utility qualities very materially. These, and, in some cases, tree-run apples, were packed in the Economy crate and were sold on their merits, as the purchaser could see for himself what the box contained. Made up they cost about 11 or 12 cents. From the producer's viewpoint Mr. Clark enumerated the advantages of the Economy crate as follows: They are very conveniently stored, both when empty and full; when in the orchard there is no danger of hoops breaking if rain overtakes the grower unprepared, and quite a number of them can be stored in a compact pile and covered; there is ventilation through the box, and fungus will not develop on the apples so readily as in a barrel; three of the boxes are cheaper than one barrel.

Mr. Clark was enthusiastic about the container, not only for inferior grades, but said he intended to use it for the better qualities. At this point a heated discussion arose. There were members present who thought the use of the box would defeat the purpose of the Inspection and

Sale Act, or more commonly known as the Fruit Marks Act. Some considered that it would be adding another container to the list of packages already too long. Others again did not look optimistically upon the future use of the crate for apples other than inferior kinds, as boxed apples are now looked upon or expected to be better than the Act really calls for in barrels. The use of this box with apples not so carefully packed might, it was thought, besmirch the good name of boxed apples in general. Another point commented upon was that in dimensions it differed from the standard box, and if it came into general use much inconvenience in loading would be experienced, as is now the case with baskets. In spite of the objections raised as to its general adoption and the earnest manner in which the arguments were advanced, Mr. Clark still considered the Economy crate a useful package, and one which he could use to good advantage in the future for different grades of fruit.

R. M. Winslow, Horticulturist for British Columbia, remarked that the crate had come to stay in the West. Sentiment there, he said, was in favor of a crate that would hold the same weight of apples as their box, but should not have the same dimensions. He would not favor having it the same size, as No. 1 apples should have some mark of distinction.



Economy Crate.

This package was recommended by J. W. Clark.

BASKETS.

With regard to baskets there is a divergence of opinion. The 6-quart, 9-quart, common 11-quart and deep eleven all have their advocates. F. M. Clement, Director of the Vineland Experiment Station, introduced the various points relative to baskets, about which some discussion arose. With regard to the thickness of veneer, he considered that 16 and 14 sawn from one inch of material was all right for 6-quart and 11-quart baskets respectively, provided the quality of the veneer was good. The handles for 6-quarts should be cut not more than 8 to the inch, and for 11-quarts not more than 7 to the inch. The speaker pointed out that the size of 6-quart and 11-quart baskets, was fixed by law, yet in spite of this they vary so, as manufactured by different companies, that it is difficult to find covers to fit, and they are inconvenient to load into cars. He suggested that when everything as to dimensions is settled, that blocks be provided to the manufacturer by the Government to insure uniformity of manufacture.

Mr. Clement furthermore stated that the package now known as the eleven-quart, has come in for a great deal of criticism. It is claimed that it is too low to take three rows of No. 1 peaches, layered, and that with the variation between the size of the bottom and the top, fixed by law, it is impossible to pack three layers of uniform size. The smaller peaches must be, of necessity, placed in the bottom if a firm pack is to be maintained. The law does not permit this, consequently it seems necessary to modify the package or the law. The quantity it holds seems quite satisfactory to both grower and consumer. It is also a very convenient package to handle. The present law states that a basket shall be a certain length at the top and at the bottom, the difference being two inches. At the same time, the law states the baskets shall be a certain width at top and at the bottom, the difference being one and one-eighth inches. This permits of much more flare at the ends, than at the sides. The strength of the basket is somewhat weakened by the increased slope of the ends, for which there is apparently no necessity. It is also this increased length of top over bottom that makes uniform packing most difficult. Some flare is necessary in the basket because of conditions of manufacture, and the advisability of "nesting" for shipment and storage.

For packing the fruit, the more perpendicular the side, the easier and more uniformly the fruit can be packed. The difference in width between top and bottom also permits of air circulation between the baskets, so essential in long-distance refrigerator shipments. The minimum flare for manufacture is, however, sufficient for a maximum of ventilation in the car. Producers are agreed as to a more perpendicular side, but how high should the side be? That question they did not agree upon. The present standard

height is 5½ inches. The speaker was in favor of increasing that to 6 inches.

Speaking on the matter under discussion, W. H. Bunting, St. Catharines, remarked that the scarcity of labor was necessitating the employment of more machinery in the manufacture of baskets, and with machinery it was difficult to produce a different degree of flare for the ends and sides. It was necessary to have some flare, but in modifying that it would be necessary to agree upon the matter and increase the height of the side so the capacity of the basket would remain unchanged.

The Dominion Fruit Commissioner, Donald Johnson, suggested that a committee be appointed to decide upon something definite in order to assist the Fruit Branch when arranging for legislation in the matter. The suggestion was accepted as good, and a committee composed of producers and basket manufacturers was named.

The whole matter pertaining to the size, flare, quality and dimensions of baskets was referred to the committee made up of fruit growers and representatives of basket manufacturing firms.

APPLES IN BOXES AND BARRELS.

There is considerable history that might be recorded regarding the packing of apples in boxes and barrels. This phase of the matter was dealt with very briefly by C. W. Baxter, Fruit Branch, Ottawa, who also defined the particular markets most suitable for apples packed either in the barrel or box. The Western States, he said, in their endeavor to dispose of their product on Eastern markets have taught growers on this side of the continent to follow their example. The trade channels through which boxed apples have been sold in the markets, on both sides of the boundary line, are the hotels, the fruit stores, the fruit stands, apartment houses and private homes. The hotels, restaurants and fruit stands use practically nine-tenths of the total. The hotels and restaurants prefer them because the fruit is uniform in size and quality. If for serving as fresh fruit they can procure them uniformly, medium or nearly medium-sized, Caterers have the individual cost of serving the public figured out to a very fine point, and uniformity is a help to them in this. The foreigner with his fruit stand, finds it advantageous to have the number of the apples contained in the box marked on the outside. It helps him in figures with which he is not too well acquainted.

The speaker considered the box trade worth bidding for, but the commercial standard for boxed apples is very high, and unless this standard is reached and maintained there is no advantage in packing in boxes. The Inspection and Sale Act has not set the high standard; it is a commercial standard which consumers look for and expect. Mr. Baxter also discountenanced the practice of wrapping apples of inferior quality in an attempt to capture the trade. The disappointment of the purchaser is a detriment to the whole industry.

With regard to barrels Mr. Baxter said that he thought if Eastern apple growers were asked to choose one package only, ninety-five per cent. would choose the barrel. Improvements have been made during the past few years; Canadian apples have been given preference over those of our competitors to the south on European markets. On reading the comments of our competitors, the speaker remarked that considerable credit was given to our legislation, i. e., the Inspection and Sale Act. Fruit legislation and apple packing laws are live topics in the United States to-day. Apples from the State of Maine have been forging to the front. Virginia has made advance, and New York State, with her ten million barrels, through her apple-packing laws, has made very rapid progress. Better methods of packing the Canadian product were advocated, and these should be brought about by improved methods of production, handling the fruit, sorting and grading.

Marketing Tender Fruit.

The addresses and discussions in this department were chiefly along the line of distribution. Through co-operation, advertising, and pre-cooling of fruit, it was thought that markets might be developed and extended. More suitable packages, too, might be discovered and tested in order to arrive at some definite understanding as to the proper containers to use.

AMALGAMATION IN NIAGARA PENINSULA.

There are many associations in the Niagara Peninsula, a number of which are co-operative. J. R. Hastings, Winona, in an interesting address, advocated an amalgamation of all these societies, and organizing the Districts in such a way as to spread farther afield the good influences of the small associations which are now operating there. In his address, the speaker admitted that co-operation had not been satisfactory in every instance, but he affirmed that dollars and cents are not the absolute and only aim of such an organization. The speaker said, however, that a number were so well pleased with the small association through which they had been marketing and dealing, that they would not con-

sider broadening their field of influence or risking the efficiency of their society by taking in a larger field and more members. Mr. Hastings explained in detail the advantages of co-operation, and how it might solve many problems in the Niagara District. He had in mind a scheme whereby the District might be still further organized, but time would not permit of its full explanation to the Convention. The speaker had undoubtedly given the matter exhaustive study, and his ideas regarding amalgamation in the Niagara Peninsula should be brought to the attention of every grower there.

ADVERTISING OUR TENDER FRUITS.

In order to move the enormous crops of basket fruits in 1915 an extensive campaign of advertising was conducted by the growers and the Dominion Government. W. H. Bunting, St. Catharines, said that it was an unqualified success. Reports, said the speaker, go to show that notwithstanding the peculiar financial conditions governing the market that at no time was there any serious retardation in the movement of the crop. Distribution was better than it ever was before, and people bought peaches last year who had never used them to any extent prior to 1915. In the four months previous to and including the shipping season, bulletins were sent out urging consumers to purchase fruit, while advertisements and readers were inserted in 250 publications circulating in consuming districts. Mr. Bunting considered that the advertising campaign was well worth the financial expenditure connected with the venture.

The negative of this question was discussed by T. B. Revett, Niagara-on-the-Lake. This grower said that the good effect of the advertising was dissipated by so many different quotations being sent out by dealers, associations and growers. He recommended more co-operation so that the strong organization could advertise a price and get direct results. The price to the consumer was so low last year, said Mr. Revett, that great quantities were consumed, and all the praise should not go to the advertising.

PRE-COOLING OF TENDER FRUITS.

At the Pre-cooling and Cold Storage plant at Grimsby, under the direction of Edwin Smith, considerable work was carried on in 1915. Strawberries, cherries, plums, peaches, and other fruits were pre-cooled, and were shipped to the West in an endeavor to ascertain to what extent these products might be marketed in the Prairie Provinces, and thus extend the market for Ontario's production.

As regards strawberries, one shipment was sent west and opened in Winnipeg on July 2. The berries arrived at destination without decay, but the sales were unsatisfactory, owing to a poor market. The berries arrived in fair condition. Tests with cherries showed that the Early Richmond, which is not considered as good a shipper as the Montmorency, could be pre-cooled and shipped west nearly as well as the latter variety. They showed that Early Richmond could stand a shipping test of ten days. Further trials with cherries showed that sweet varieties may also be pre-cooled and shipped west. The pre-cooling of plums has been successful from the first. Shipments in 1915 were more active, and gave greater satisfaction than they did in 1914. The greatest distance that pre-cooled plums were shipped was to Prince Albert in Western Canada and to Glasgow, Scotland. Mr. Smith remarked that plums retain their flavor and texture under refrigeration better than any other of our tender fruits. Those varieties most suitable for long distance shipments were shown to be Bradshaw, Monarch, Grand Duke, Reine Claude, Damson, Abundance, and Burbank.

Much difficulty has been experienced in shipping tomatoes to the Western Provinces. Thus far pre-cooling has not helped to any great extent, since when picked firm enough for ordinary shipments the tomatoes would not have color enough for a pre-cooled shipment. For a pre-cooled shipment, the tomato must have color, but must still be firm enough to stand the necessary package pressure.

A shipment of Early Crawford peaches was two weeks under refrigeration and arrived in Winnipeg in good condition. A successful shipment of Elbertas was made to Glasgow. The farthest western shipment was to Prince Albert. Pre-cooled shipments made to the West in 1915 were not numerous, owing to the condition of markets both in Ontario and in the Prairie Provinces. Tests have shown, however, that such varieties as Belle of Georgia, Yellow St. John, Early Crawford and Elberta if properly picked and packed may be pre-cooled and shipped to nearly every part of the Dominion.

Sour cherries shipped to the West in 1915, showed an increase of some 900 per cent. over those in 1914. The surplus of Ontario's fruit, however, has not felt the influence that pre-cooling has due to the extension of markets. This has been due, the speaker remarked, to the fact that Ontario for a time marketed her product at fairly high prices, and that importations from the South began to come in to supply the demand of

canning factories and the market for a cheaper product. This supply from the South grew in quantity until conditions have become somewhat changed. In the year 1913, said Mr. Smith, when tons of tender fruits rotted on the ground in Ontario for want of a market, peaches, plums, grapes, pears, apricots, quinces and nectarines, all tender fruits which might have been grown at home, were imported into Canada to the extent of 1,767 car loads. The importation of such fruits from the United States has shown a steady increase, and is even greater to-day than it has ever been. The speaker also referred to importations to the Prairie markets for three weeks during the peach rush of the past season. The arrivals in Winnipeg ran as follows: first week, imported, 30 cars; from Ontario, 13 cars; from British Columbia, 10 cars. Second week, imported, 22 cars; from Ontario, 10 cars; from British Columbia, 16 cars. Third week, imported, 25 cars; from Ontario, 10 cars; from British Columbia, 18 cars. Points farther west, he remarked, have been consuming imported fruits at a rate to make ratios even more striking. "Without doubt, we have let markets, large enough to consume more tender fruits than Ontario is producing to-day, slip out of our hands." The speaker urged upon his hearers the necessity of looking at the pre-cooling practice from the viewpoint of extended markets, and to make greater efforts to recover and retain the markets for tender fruit in the West.

TENDER-FRUIT PACKAGES FOR LONG DISTANCE SHIPMENTS.

The contentious question regarding fruit packages was dealt with by J. M. Creelman, Grimsby, Ont. His remarks applied to packages for long distance shipments of tender fruits, and for such purpose, qualifications for the package are as follows: It must be strong enough to stand shipment without serious damage to itself or its contents; it must be constructed so as to give the maximum of protection to the contents. It should be attractive in appearance itself, as in this way it shows off the fruit; the cost of the package must not be prohibitive; the package should be planned for efficiency in loading and handling.

"The twenty-four quart crate, commonly used for the shipment of strawberries in Ontario, does not measure up to any of the requirements which we have named. It is more or less fragile, often being broken in transit. It is a rough, unattractive-looking package, and does not, as a consequence, do the fruit justice. It is easily pilfered and in car lots, loads very badly on account of the handle." In those words quoted, Mr. Creelman expressed his opinion of the value of the 24-basket crate. He furthermore found fault with the dividers in the crate. They are of veneer, and rest on the fruit rather than on the edge of the boxes. Such boxes and equipment would not permit the grower to pack the baskets sufficiently full that they might arrive at the destination as well filled as they should.

Experimental shipments made last year by the Vineland Growers' Co-operative Co. showed that the British Columbia full-pint hallock gave the best financial returns. It surpassed in this regard the western 4-5-quart and the Ontario 4-5-quart. The full pint is the one used principally by the shippers of the Western States, and British Columbia. These were shipments to the West. For sour cherries Mr. Creelman advised the 6-quart Climax basket, and for peaches the standard Western peach box.

Fruit Marks Act.

Several very important questions, which are more or less under the influence of the law, were discussed at the convention. Some of these matters are already regulated by law, while others are subject to no direct legislation at the present time, yet it was thought that something should be done in the way of law or legislation to regulate certain factors which make the problem of distribution extremely serious.

WHAT CONSTITUTES A NUMBER TWO APPLE?

The Dominion Fruit Commissioner, Donald Johnson, told the delegates present that the inspection of No. 2 apples was the most contentious question with which his department had to deal. The term "material waste" included in the clause of the Inspection and Sale Act, defining what a No. 2 shall be, has caused no small amount of trouble. As the law now stands, the fruit in closed packages shall be, "not less than 80 per cent. free from worm holes and such other defects as cause material waste." The 20 per cent. of scab, worm holes or whatever defects there might happen to be, is liable to develop after No. 2 apples are packed. In many cases, the Commissioner said, No. 2 apples had been packed and had passed inspection, yet became so bad that they were nothing better than No. 3's. Dealers and consumers have been clamoring, he said, for a No. 2 grade of apples that would be practically free from scab like a No. 1, so they would stand storing for a time, and supply the demand for a second-grade qual-

ity of apples throughout the winter. Too often the No. 2 grade will not do this. Mr. Johnson suggested that the clause in the Act defining a No. 2 should be so amended as to make a No. 2 a colorless No. 1. A committee of the convention was appointed, and after several hours deliberation, they recommended that the No. 2 be defined as follows, and a third grade known as "Domestic" brought into existence. The committee advised that the law read as follows:

No. 2 quality—Unless such fruit includes no culls, sound, of not less than nearly medium size and of fair color for the variety, and not less than eighty-five per cent. free from scab, worm holes, bruises and other defects, and properly packed.

Domestic—Unless such fruit includes no culls, sound, of not less than nearly medium size, and fair color for the variety, ninety per cent. free from worm holes, but may be slightly affected by scab and other minor defects, and properly packed.

The domestic grade of apples is quite well explained in the foregoing clause. It will include, of course, a quality of apples that must go into consumption at an early date, and one that should not be consigned any great distance.

It must be understood in this connection that these changes were simply recommendations to the Dominion Fruit Commissioner unanimously endorsed by the Convention of the Fruit Growers' Association. Other provinces, will, of course, be asked to give this matter their consideration as well, and after the fruit-growing industry of the Dominion, through its representatives, has expressed itself regarding the question, legislation may be enacted.

THE SHIPPING OF IMMATURE FRUIT.

Regarding the pernicious habit of placing immature fruit upon the market, Fred Carpenter, Winona, presented a few facts about which he built up a strong argument for the cessation of this practice. He remarked that growers had lost a large amount of money during the last few years, due to the shipping of immature fruit, and thus unfavorably influencing sales. He said that efforts to increase consumption through advertising were not being spared; co-operation among growers was being advised in order to assist in distribution; dealers, too, were trying to build up a better market, and everyone was urging better transportation facilities. In addition to this the fruit inspectors were working for better quality, and yet in spite of all these efforts and ideas, which were good, not a few growers were placing their fruit on the market before it was sufficiently matured. The unripened product only prejudiced the purchaser against a more liberal use of their commodity, and the matured product, when it did come on the market, was passed over because of the effect the green and immature fruit had upon the consumer early in the season. He remarked that it was poor advertising, indeed, to market the fruit when immature, and it only assisted in helping to build up competitive fruit districts. Mr. Carpenter advised that something be done to regulate or prevent this short-sighted practice. Laws, he said, had been put into force in some of the states to the south, and there were certain standards by which the maturity of fruit could be judged. Tests of the sugar or the acid content of the fruit would indicate the degree of maturity.

It was brought out in discussion that any standards by which mature or immature fruit could be defined would of necessity be complicated and somewhat technical. Considerable investigation would have to be conducted before anything definite in the way of regulations could be put into force. The delegates, however, were outspoken in denouncing the pernicious practice of marketing immature fruit, and the sentiment of the convention was crystallized in the following resolution moved by Mr. Carpenter:

"That the best interests of the Fruit Growers would be served if the government would take some action regulating the shipping of immature fruit."

This resolution was heartily endorsed.

THE GRADING OF BASKET FRUITS.

With regard to the grading of basket fruits, such as peaches, plums, pears, grapes, and cherries, F. M. Clement, Director of the Vineland Experiment Station, made several suggestions, but he confined his remarks chiefly to peaches. His address was so worded that discussion might follow as to the advisability of fixing, by law, certain standards for basket peaches somewhat after the plan in force for apples under the Inspection and Sale Act. He said that it had been maintained that the standardization of grades and packs is the work of the individual and associations. He considered, however, that it would be a good move in behalf of the growers if something were done to fix by law certain standards toward which growers and packers might strive. He outlined some of the difficulties in connection with packing peaches according to standard, but he thought these might be overcome. In a system of grading he suggested four grades, namely—fancy, choice, No. 1, and No. 2. He furthermore opined that with a little practice

throughout the winter. Too often it will not do this. Mr. Johnson's clause in the Act defining a grade amended as to make a No. 2. A committee of the convention and after several hours determined that the No. 2 be and a third grade known as into existence. The committee's law read as follows: unless such fruit includes no less than nearly medium size or the variety, and not less than cent. free from scab, worm or other defects, and properly

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it would be possible to fix the maximum number of peaches that could be put into a certain grade with the different sizes of baskets. Below a certain fixed number the fruit might be considered fancy; between this and another number, a little higher, the fruit would be choice; between this number and another, the fruit would be number one; and lastly, above this number, the fruit would be number two. This would necessitate also the establishing of a minimum weight per basket, and would apply only to the layered peaches in closed packages. This he remarked was far in advance of what is possible at present, and he realized that such a law could not be put into force without a great deal of discussion and perhaps opposition, but he thought the ideal worth aiming at.

One objection to such standards, said Mr. Clement, would be the necessity of certain standard packs as well. At present a quantity of number ones are packed in three layers; three peaches wide. The pack is known as a "straight pack," and the peaches are placed directly on top of each other. In his opinion, the peaches could be layered in the baskets with the interspaces filled, and according to this method the basket would take a larger peach than when a straight pack is used.

The speaker referred to a practice in vogue in some districts in the United States. There, fruit is packed according to certain standards, and grades are stamped with a government stamp. These stamps are sold to growers and shippers who wish to use them. The standard is high, and the stamp is a guarantee of quality. This particular brand of fruit is extensively advertised, and the trade is beginning to know it.

In the discussion following Mr. Clement's address, some delegates thought it would be unwise to take steps along such lines at the present time. W. F. W. Fisher, Burlington, said, "We have too much law," and he thought it advisable to let the matter stand over.

Marketing Apples.

The major part of one session was devoted to a discussion of marketing apples through co-operative associations. The local organizations and the Central were both taken into consideration by speakers who had experienced the trials of managing.

THE CENTRAL ORGANIZATION.

There is in Ontario The Co-operative Fruit Growers of Ontario Ltd., which is a commercial rather than an educational organization. Through this medium many of the local associations market their produce. Elmer Lick, Oshawa, has, since the inception of the Company, been active in its interests, and he explained to the Convention that local associations had not been as strong supporters of the Central as was expected. However, they had done a good business, and in 1916 they expected to reduce selling charges to such an extent that 25 cents per barrel would cover all the cost of the transaction in buying and selling between producer and consumer. Mr. Lick remarked that associations generally did not affiliate with the Central so successfully when they had as a manager one who had previously been a dealer. The Central aimed to establish broader markets and maintain a good and favorable reputation in them even if a slight temporary loss resulted. The instinct of the dealer led him to obtain the best possible price on any sale regardless of the future standing of his association. The speaker also spoke in justification of the use of the Economy crate by some members who were active in the Co-operative Fruit Growers of Ontario Ltd. Influences, he said, were at work to cast suspicion upon him and others intimately connected with co-operative work in the Province.

RETURNS TO LOCAL ASSOCIATIONS.

The President of the Ontario Fruit Growers' Association for the ensuing year, Dr. A. J. Grant, Theford, enumerated a number of factors which would, if dealt with courageously, result in better net returns to the local associations. He urged upon growers to adopt higher standards of packing and guard them zealously; to put forth greater efforts toward a more uniform pack; to spray and prune more thoroughly, and to anticipate requirements in the purchase of supplies so they would be in a position, at less expense, to drench their trees with good and effective chemicals. In his characteristic, inspiring manner, Dr. Grant advocated more enthusiastic efforts on the part of all to get away from old-time practices, and be up-to-date in cultivating, pruning and spraying, and through the results of their efforts along these lines be able to market a better product.

Better net returns, not necessarily letter prices, to the associations, was the speaker's theme. In many cases, he intimated, growers were not satisfied because they did not understand commercial or selling standards. He cited one instance where a car load of choice Baldwins had returned \$3.30 per barrel, which was much higher than what the majority of producers were receiving. As a result of this news a few were dissatisfied, but they did not understand that the car load was all one variety, a standard on the market, all red and of good quality. The two re-

quirements in filling an order, he said, were: first, to have a large percentage of good No. 1 red stuff, and second, the variety list must include popular kinds of apples. It was too bad, said Dr. Grant, that growers have not taken the matter seriously regarding the varieties they have in their orchards. Through grafting in better kinds many could increase their net returns.

With regard to pruning, it was pointed out that greater care must be taken along this line in order to secure the highly-colored fruit. The Theford Fruit Growers' Association authorized the employment of a pruning gang who would go from place to place and prune the member's orchard whether it was large or small. Financial matters were arranged so the member, if he so desired, could have the expense met by the Association, which would recover the loan at the next marketing season.

The necessity of more thorough spraying was urged upon all growers. They were advised to anticipate their needs and purchase when the market was right. In this way they would save in the price of materials and they would have sufficient supplies on hand to combat fungous and insect pests at the proper time. Another means of securing better net returns was to produce a good run of apples which could be packed more speedily and at considerably less expense than could a poor run.

"Our ideals are ridiculously low in the matter of standards," said Dr. Grant, "we should establish a standard in advance of that called for by the Fruit Marks Act and guard it zealously. If we are going to try and skimp through with the standards as set by the Fruit Marks Act, we will never have the trade. The growers in other fruit-producing areas who are putting their product on our markets have high ideals as to their grades and packs, and they live up to them. Our standards are absolutely too low." The speaker was very emphatic in recommending higher quality in the output and more uniformity. In this connection he said he would like to see more central packing houses used by the local associations instead of two or three gangs going to the different orchards. The plan of a central packing house had been tried by the Theford Association and found satisfactory. One man was in charge, and the pack was uniform. It had also been found less expensive, considering everything, than packing in the orchards. Employing cheap labor was described as foolish economy. Low salaries would, in the end, destroy the reputation of the association which hired inefficient men.

Dr. Grant advocated a better understanding between producer and distributor. In many cases, he said, there was antagonism which ought not to exist.

Speaking on the same subject regarding net returns to associations, C. F. Howard, Hagersville, recommended a central packing house, and greater thoroughness in all the operations connected with production.

MARKETS AND MARKETING IN WESTERN CANADA.

The Provincial Horticulturist for British Columbia, R. M. Winslow, did not bring to the convention any glad tidings from the West, but he did interpret present conditions in a fair and frank manner. He briefly outlined the success of the Okanagan United Growers Ltd. (O. U. G.) and told the delegates what had been accomplished in three years in the way of organized marketing in British Columbia. In describing the O. U. G. as successful Mr. Winslow wished it understood that by success he meant that the growers sold their fruit better than through most other marketing methods, and last year the O. U. G. handled about 55 per cent. of the Okanagan fruit shipments. The O. U. G. last season established salaried agents in Vancouver, Calgary, Regina and Toronto with excellent results. During 1915 the fruit growers of British Columbia marketed about 85 per cent. of their crops through organizations, co-operative or otherwise controlled by the shippers.

In spite of all that had been accomplished along organized, co-operative lines, Mr. Winslow said conditions were unsatisfactory, and this was due to the unfair competition coming from the other side of the line which they were obliged to meet. Interesting figures were presented by the speaker to show that large importations were made each year of fresh fruits of a kind produced commercially in Canada. In 1914 the value, including duty, of blackberries, gooseberries, raspberries and strawberries imported into Canada amounted to over \$800,000. Imported cherries were valued at \$142,000, and both in 1913 and 1914 imported peaches were valued, including duty, at nearly \$500,000. Fresh plums are also brought in annually to the extent of from \$300,000 to \$350,000 worth, and other fruits, lumped together in the Custom returns and including pears, were valued at over half a million dollars in 1914. More significant still the value of apples imported in 1913 was set at nearly one million dollars, and in 1914 at nearly \$1,250,000. The value including duty of all kinds of fruits imported in 1913 amounted to \$3,581,970.87, and in 1914 it was set at \$4,152,476.17. This is the competition that renders the fruit industry in

British Columbia less remunerative than it otherwise would be. However, it is not the fruit from the Western Province that is alone affected by these importations. Mr. Winslow showed how the apple crop of British Columbia grew from 200,000 boxes in 1909 to 800,000 boxes in 1915, so it must be the Ontario product that is replaced by the importations. The reports of the Department of Trade and Commerce show that since 1909 the average number of barrels of apples imported annually amounts to 185,516. In 1912 and 1914, when many apples went to waste in Ontario, 195,069 and 330,907 barrels respectively were imported. These apples so freely brought in, come from the Northwestern States, and their contributions to our markets constitute one-third of the consumption of the Prairie Provinces.

Foreign competition is the cause of all the trouble. Mr. Winslow described conditions in the Western States whence these shipments come. "Their product has not for years past been sold to average the cost of production, the greater part of their orchards must be cut out. Of the 550,000 acres reported to have been planted, 75 per cent. or more must go under to enable the balance to survive. The growers are in bad shape financially and most of them utterly discouraged; the majority have no hope of success. In four years ending 1915, the average selling price, according to their own authorities, has been more than 20 cents a box below the average cost of production. They use Western Canada and similar agricultural sections in the United States to get rid of their low-grade apples. Over 85 per cent. of their shipments to Canada are "O" grade, about equal to our No. 2. The average f. o. b. selling prices of N. W. apples shipped to Canada in the past four years is under 70 cents a box, showing a loss of nearly 40 cents per box under the average cost of production." In the face of this competition British Columbia must market 90 per cent. of its crop. The average cost of production in the Northwestern States has been estimated at \$1.06 2/3 per box. The cost of production in British Columbia is about 25 per cent. higher, ranging from \$1.20 to \$1.28 per box. Estimates are that they had in the Northwestern States 48,000 acres in bearing in 1913, and will have 130,000 acres in 1916. If present plantings are moderately cared for, they will have in 1920, 208,000 acres of trees six years old and over. This estimate requires that the balance of the 550,000 acres, estimated to have been planted, will be destroyed or so neglected as to be unproductive. It is furthermore expected that the conditions of 1914, bad as they were in the Western States, will be reproduced in greater intensity in 1916.

The practice of shipping into Canada low-grade apples at prices below the cost of production has been severely felt by the British Columbia growers, and they are asking the Government to interpret the anti dumping clause of the Tariff Act in such a way as to impose an adequate dumping duty on fruits imported at less than cost of production. The absolute necessity of adequate and reasonable protection for Canadian apples is also being urged by the British Columbia growers.

STATE MARKETS.

The convention was favored with an interesting and instructive address delivered by H. A. Emerson, General Manager of State Auction of the New York State Department of Foods and Markets. This organization has accomplished wonderful things in the last few years, and Mr. Emerson explained how it was destined to guard the interests of both producer and consumer. The live poultry trade, the apple market, the sale of bread and many phases of the trade had felt the influence of the Department. Large auction and storage rooms were supplied the Department free of charge by the railroads, and here all kinds of produce was consigned. This was sold, and the returns remitted to the sender minus the bare cost of selling. Mr. Emerson advised Ontario producers to ship apples to New York but recommended only consignments of first-class quality.

Officers Elected.

The following delegates were elected to office for the ensuing year: President, Dr. A. J. Grant, Theford; Vice-President, F. J. A. Sheppard, St. Catharines; Sec'y-Treasurer, W. W. Hodgetts, Toronto. Executive Committee: President, Vice-President, Secretary-Treasurer, Elmer Lick, Oshawa; and R. H. Dewar, Fruitland. Board of Directors: R. B. White, Ottawa; E. Casselman, Iroquois; F. S. Wallbridge, Belleville; J. G. Waite, Wicklow; Elmer Lick, Oshawa; W. F. W. Fisher, Burlington; R. H. Dewar, Fruitland; F. J. A. Sheppard, St. Catharines; Paul Angle, Simcoe; Dr. A. J. Grant, Theford; Albert Stevenson, Longwood; C. W. Gurney, Paris; Adam Brown, Owen Sound.

A CHANGE IN FEES.

The Association has found it difficult to conduct its educational propaganda, along with other work useful and necessary to all fruit growers on the fee of 25 cents, collected from its members who are also members of some local association. The delegates at the convention authorized the Ontario Fruit Growers' Association to set the membership fee at 50 cents.

FARM BULLETIN.

A Message From Leeds.

Editor "The Farmer's Advocate":

In looking over "The Farmer's Advocate" I have not noticed anything from old Leeds. Surely the many good farmers should have something to tell about the past season of good crops and high prices, of the advantages and disadvantages which they have been put to the past year, whereby we may improve in the year which we have just entered. I see, by the paper, that we are expected to work harder and save more than

we did in 1915. So far as I am personally concerned I will not promise to work any harder than I have, but I will try to save more, and will make an endeavor to grow more per acre by better cultivation. I am afraid 1916 will see a shorter hay crop than we had in 1915. The high price of cheese, together with the abundance of grass till late in the fall kept cattle grazing until November, and at this writing, Jan. 11, the fields are bare in some places. Other fields are coated with ice, and it is freezing hard. In this locality farmers are taking life easy, doing chores and getting up a supply of wood. The roads which are not bare are covered with ice, making it bad for business. A cheese factory

nearby is still in operation, taking in milk twice a week, which makes it very convenient for those having a large quantity of milk. Feed with some, is beginning to look short already, as is usually the case where a man is overstocked, which, in my opinion, is worse than not having stock enough.

I notice when the Rural Mail man starts out, on days when "The Farmer's Advocate" is in, all you can see is a yellow streak—boxes and cutters all full, which goes to show that farmers are reading one of the best and most up-to-date journals printed.

Leeds Co., Ont.

D. F. ARMSTRONG.

Keen Competition at the Ottawa Winter Fair

The best, all-round Winter Fair ever held at Ottawa was the verdict given on the event just closed. From January 18 to 21 large crowds filled Howick Pavilion to see the best that Canada could produce from field and stable. They did not go away disappointed. All classes of live stock were represented by animals in prime condition. The exhibit of grain was exceptionally good, and the lectures practical and instructive. The number of entries and quality of the animals in the sheep and swine classes surpassed anything that had previously been seen at Ottawa. The horse stalls were all filled with animals that made a grand showing. In the beef classes the entries were larger than usual, and cattle, as a whole, appeared in a well-fitted condition. The dairy stable was not so well filled as it had been in the past, but what was lacking in numbers was made up in quality. Poultry were shown in numbers far above anything anticipated, and the grain department never looked better.

Howick Pavilion was temporarily vacated by the soldiers in order that the Fair might be staged as in former years. Considerable work was necessitated in order to put the building in shape to receive the products of the farm, but all was in readiness on the opening day. Everything was arranged so that visitors might obtain the greatest possible educational value from the Show. Judging in the ring was done according to schedule from start to finish. When the lectures were being given, the judging was discontinued in order that the people might hear practical subjects discussed and yet not miss seeing the different classes judged. The Board of Directors should be complimented on the excellent way in which they handled the Fair and upon the success attained.

Horses.

Space to accommodate the horses which appeared at the Fair was at a premium. While the entries exceeded other years, there was a falling off in numbers of Percherons, Shires and lighter breeds. Clydesdales were out in full force, showing quality, style and action.

A large crowd took a keen interest in the judging of all classes of horses.

CLYDESDALES.—Imported horses were not quite equal in numbers to the Canadian-bred, but the line-up in their respective classes showed that a goodly number of top-notchers could still be brought together, in spite of the falling off in importations. D. Montgomery, British Columbia, placed the awards in the open classes.

The line-up of aged, imported stallions was looked upon with intense interest, by the spectators, for in it were horses that had met on different occasions. Lord Gleniffer never showed to better advantage; his substance, quality and character gave him first place in his class, and finally gained the grand championship over imported and Canadian-bred stallions. Scotia's Pride occupied second position. He is a heavy horse with splendid action. Baron Ian came in for third place, showing quality and good action. Fourth place was taken by Baron Minto, a horse of a little more blockier type than the others. Alert was fifth, with five animals below him.

In the three-year-old class was Baron Ascot, grand champion stallion at Guelph. He again won his class, but owing probably to conditions being somewhat different than they were at Guelph, he failed to reach the premier position at the show. He is a firmly-coupled horse, and possesses good quality. Fyvie Peer, of much the same type as the winning horse, came second. Third place was occupied by Birchburn, probably a little lighter horse, but with good underpinning. Royal Type and Baron Humphrey were fourth and fifth.

There were six candidates in the class of two-year-olds. Cedric King was placed first. He possessed both size and quality. Everard, a horse of much the same type, went second, while Baron Kipling and Sir Baron Wallace secured third and fourth places.

Three yearlings came before the judge, and Royal Design, a well-built colt, received the red ribbon. Lucky Coin, showing good action and

quality of bone, but not quite the substance, was placed second.

In the aged mare class was Royalette, the grand champion mare at Guelph. In spite of her age she showed to excellent advantage. Her splendid quality and conformation, along with that true and easy way of moving, placed her at the top of her class, and finally to the grand championship. Laura Dee, a comparatively young mare, with good body and underpinning, was second. Third and fourth places were occupied by Ella Fleming and Castle Belle.

Only two three-year-olds appeared in their class, and the red ribbon was placed on Craigie Meg, a mare with good quality, although Solway Duchess possessed more substance.

In the two-year-old class the honors went to Lady Ascot, a drafty mare with good action.

In the yearling class were five fillies. Denholm Hill Blossom, a well-proportioned colt, was placed first, and Rosie Harmony second.

Exhibitors.—Wm. Meharey, Russell; John A. Boag & Son, Queensville; Smith & Richardson, Columbus; Jos. Telfer, Milton West; Graham Bros., Claremont; Jas. Burt, Britannia Bay; R. R. Harris, Gattineau Point, Que.; A. Watson & Sons, Forest; A. A. Scharf, Cumming's Bridge; Nixon Scharf, Cumming's Bridge; W. W. Hogg, Thamesford; T. R. Macaulay, Hudson Heights; Que.; T. A. Russell, Downsview; J. Vipond & Son, Brooklin; R. Ness & Son, Howick, Que.

Awards.—Aged stallion: 1, 4 and 5, Graham Bros., on Lord Gleniffer by Sir Ronald, Baron Minto and Alert by Baron's Pride; 2, Smith & Richardson, on Scotia's Pride by Crossrig; 3, Boag & Sons, on Baron Ian by Baron's Pride; 6, Meharey, on Golden Crown by Gold Mine. Stallion foaled in 1912: 1 and 2, Graham Bros., on Baron Ascot by Baron's Pride, and Fyvie Peer by Diploma; 3, Boag & Sons, on Birchburn by Everlasting; 4, Smith & Richardson, on Royal Type by Sir Hugo; 5, Harris, on Baron Humphrey by Baron Archie. Stallion foaled in 1913: 1, Graham Bros., on Cedric King by Cedric's Baron; 2 and 3, Smith & Richardson, on Everard by Everlasting, and Baron Kipling by Baron's Pride; 4, Watson, on Sir Baron Wallace by Mimulus; 5, Meharey, on Baron Clifty by & Richardson, on Royal Design by Baronet & Richardson; 2, Scharf, on Lucky Coin; 3, Watson & Sons, on Baron Revolt by Knockinlaw Revolt. Aged mare: 1, Hogg, on Royalette by Royal Edward; 2, Smith & Richardson, on Laura Dee by Baron O'Dee; 3, Watson, on Ella Fleming by Sam Black; 4, Graham Bros., on Castle Belle by Glenoglan; 5, Scharf, on Rose Evandale by Lord Evandale. Mare foaled in 1912: 1, Boag & Sons, on Solway Duchess by Title Deeds. Mare foaled in 1913: 1, Boag & Sons, on Lady Ascot by Ascot Chief; 2, Russell, on Queen Darnley by Edward Darnley. Mare foaled in 1914: 1, Hogg, on Denholm Hill Blossom by Marmarides; 2, Scharf, on Rosie Harmony by Prince Harmony; 3, Ness & Son, on Woodside Rosalind by Sir Spencer; 4, Vipond & Son, on Lady Moncrieffe by Moncrieffe Albion; 5, Watson & Son, on Nancy Hugo, by Hugo's Stamp.

CANADIAN-BRED.—The classes for Canadian-bred Clydesdales were well filled, and many good, useful horses were exhibited, resulting in some very close contests. They showed that Canada can produce first-class horses. Jas. Torrance, of Markham, Ont., placed the awards in this division.

In the aged class of stallions the red ribbon was given to Special Royal Favorite, a horse with good underpinning, and still showing in the freshness of youth. Koyama, an old horse with more substance than the winner, was placed second. Baron Morris and Baron Gibson occupied third and fourth places.

Only four three-year-olds were shown in the ring, and Prince Roderick, a well-proportioned horse with good action took first place. Ross MacGregor, with snappy action, and of good conformation, was placed second, and Chatten's Buchlyvie third.

In the two-year-old class there were eight com-

petitors. Royal Regent won his class, having splendid feet and legs, together with fine feathering. He was later awarded the championship of the Canadian-bred stallions. Spencer of the Briars, a horse with a little more substance, was second, and Baron's Pride 2nd, third.

The yearling stallion class was headed by MacQueen of Atha, an animal of good conformation, with a splendid set of legs and feet. In second place stood Scottish Diadem, a strongly-coupled horse with good underpinning. Baron Cedar and King Roderick were third and fourth.

A half dozen aged mares strove for first place in their class, the honors finally going to Aberdeen's Grace, a typey mare, possessing good quality. Royal Rose, of somewhat blockier type, with good action, stood second; and Princess Lucy Belle, showing both quality and substance, came third. The three-year-old class was won by Lady Harmony.

Among the two-year-old fillies was Lady Bydand, a well-proportioned mare with plenty of substance and quality. To her was awarded the red ribbon, and finally she was proclaimed champion of the Canadian-bred mares. Woodside Rosebud, a strong-topped mare, secured second in her class, with Lady Garnet and Minnie Favorite third and fourth.

The yearling class was represented by six splendid fillies. Jean Armour, a growthy, well-put-together filly, with nice quality bone, took second place to Ivory's Margaret, which is a strong individual, heavily muscled, and showing good action. Nellie Carruchan, a useful mare, stood third, and Queen Favorite fourth.

Exhibitors.—Wm. C. Brethour, Cornwall; W. A. Morrow, Russell; W. J. Graham, Almonte; Wm. Allen, Osgoode Station; Jos. Telfer, Milton West; E. H. Graham & Son, Carp; Lew. Richardson & Son, Ashburn; John Vipond & Son, Brooklin; W. C. Patten, Port Perry; W. J. Henders & Son, Port Perry; H. C. Pinkey, Dunrobin; A. A. Scharf, Cumming's Bridge; Peter Christie, Manchester; R. N. Harris, Gattineau, Que.; R. Ness & Son, Howick, Que.; Graham Bros., Claremont; J. G. Hodgins, Carp; A. B. McConnell, Chesterville; Geo. McFadden, Navan; R. T. Brownlee, Hemmingford, Que.; A. Watson & Son, Forest; John Rathwell & Son, Navan; T. B. Macaulay, Hudson Heights, Que.; F. W. Bradley, Seagrave; W. Batty, Brooklin; R. Ness & Son, Howick, Que.; W. W. Hogg, Thamesford; Smith & Richardson, Columbus.

Awards.—Aged stallion: 1, Telfer, on Special Royal Favorite by Monteith Favorite; 2, Allen, on Koyama by The Rejected; 3, Morrow, on Baron Morris by Baron's Treasure; 4, Graham, on Baron Gibson by Baron Silloth; 5, Brethour, on Gold Dust by Fyvie Gold. Stallion foaled in 1912: 1, Vipond & Son, on Prince Roderick by Royal Roderick; 2, Richardson & Son, on Ross McGregor by Lord George; 3, Platten, on Chatten's Buchlyvie by Dunure Soutar; 4, Graham & Son, on Soutar Buchlyvie by Dunure Soutar. Stallion foaled in 1913: 1 and 5, Graham Bros., on Royal Regent and Royal Derwent by Gallant Carruchan; 2, Ness & Son, on Spencer of the Briars by Sir Spencer; 3, Scharf, on Baron's Pride 2nd by Baron Elrig; 4, Christie, on Sir Acme by Acme. Stallion foaled in 1914: 1, Graham Bros., on MacQueen of Atha by Gallant Carruchan; 2, Hodgins, on Scottish Diadem by Scottish Hero; 3, Scharf, on Baron Cedar by Baron Elrig; 4, Vipond, on King Roderick by Royal Roderick; 5, Brownlee, on Oakhurst Sir Robert by Sir Spencer. Aged mare: 1, Macaulay, on Aberdeen's Grace by Lord Aberdeen; 2, 4 and 5, Watson, on Royal Rose, by The Rejected, Moss Rose by Leamstde, and Trim of Oro by Baron Gartley; 3, Rathwell & Son on Princess Lucy Belle by Baron's Treasure. Mare foaled in 1912: 1, Scharf, on Lady Harmony by Prince Harmony; 2, Macaulay, on Lady Netherlea by Netherlea; 3, Vipond, on Kate Favorite by Royal Favorite. Mare foaled in 1913: 1, Graham Bros., on Lady Bydand by Bydand; 2, Ness & Son, on Woodside Rosebud by Sir Spencer; 3, Batty, on Lady Garnet by Golden Knight; 4, Bradley, on Minnie Winnie by Golden Crown. Mare foaled on or after Jan. 1, 1914: 1, Smith & Richardson, on Ivory's Margaret by Black Ivory; 2, Hogg, on

still in operation, taking in milk twice which makes it very convenient for those large quantity of milk. Feed with beginning to look short already, as is the case where a man is overstocked. My opinion, is worse than not having

when the Rural Mail man starts out, when "The Farmer's Advocate" is in, all is a yellow streak—boxes and cut-which goes to show that farmers one of the best and most up-to-date

, Ont. D. F. ARMSTRONG.

Winter Fair

Royal Regent won his class, having and legs, together with fine feather-which was later awarded the championship of un-bred stallions. Spencer of the horse with a little more substance, was Baron's Pride 2nd, third.

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1913: 1, Graham Bros., on Lady nd; 2, Ness & Son, on Woodside pencer; 3, Batty, on Lady n Knight; 4, Bradley, on Minnie Favorite; 5, Morrow, on Golden n Crown. Mare foaled on or 1914: 1, Smith & Richardson, on y Black Ivory; 2, Hogg,

Awards.—Stallion, foaled previous to Jan. 1, 1913 (15 hands, 2 inches or over): 1, Tilt, on Spartan by Polonius; 2, Brownlee, on Hillhurst Fashion by Cobhurst; 3, Telfer, on Harry Lauder by Warwick Model. Stallion foaled previous to Jan. 1, 1913, (under 15 hands, 2 inches): 1, Watson & Sons, on Wenona Jubilee by Jubilee Chief; 2, Douglas, on Anticipator by Rosador. Stallion, foaled on or after Jan. 1, 1913: 1, Hogg, on Oscar by Terrington Semaphore; 3, Watson & Son, on Jess Willard by Wenona Jubilee. Mare, foaled previous to Jan. 1, 1913: 1 and 3, Telfer, on Princess Eudora by Vanguard, and Lady Paragon by Vanguard; 2, Tilt, on Miss Derwent by Derwent Performer. Mare, foaled on or after Jan. 1, 1913: 1, Telfer, on Model's Queen by Warwick Model; 2, Boag & Son, on Bayview Lady by Blanch Surprise; 3, Tilt, on Dainty Spartan by Spartan. Champion stallion, Tilt, on Spartan. Champion mare, Telfer, on Model's Queen.

STANDARD-BREDS.—Exhibitors: C. W. Creswell, Martintown; Ashley Stock Farm, Foxboro; F. W. Melvin, Vars; J. J. Fitzpatrick, Holloway. Awards.—Stallion, foaled previous to Jan. 1, 1913: 1, Ashley Stock Farm, on George Rayner by McMartin; 2, Creswell, on King Royal by King Antidote. Stallion, foaled on or after Jan. 1, 1913: 1, Melvin, on Gold Heels by San Francisco; 2 and 3, Ashley Stock Farm, on Judge Carman by Peter Wilton, and Jack Rayner by George Rayner; 4, Fitzpatrick, on Harford Ashley by McMartin. Mare, foaled previous to Jan. 1, 1913: 1, 2 and 3, Ashley Stock Farm, on Phillywinkle by McKenzie, Noble Lottie by Noble W.; and Emma Fraser by Bingen Pilot. Mare, foaled on or after Jan. 1, 1913: 1, 2 and 3, Ashley Stock Farm, on Ella Bleeker by Ingara, Aunt Fanny by Noble Peter, and Winkle Girl by Alick. Champion male was Gold Heels, and champion female, Phillywinkle.

THOROUGHBREDS.—First in the aged stallion class, also the championship, went to T. C. Bate, Six Portages, Que., on Gold Note by Gold Finch. F. A. White Calumet, Que., exhibited Sir Bend by Athol in the class for stallion foaled on or after Jan. 1, 1913. Mare foaled previous to Jan. 1, 1913: 1, White, on Alexandra by Gold Crest; 2, J. Bovaird, Brampton, on Diffident by Ardoon; 3, Bate, on Rhyolite by Logan.

HUNTERS.—Exhibitors.—T. C. Bate, Six Portages, Que.; J. Tilt, Brampton; J. Bovaird, Brampton; Mrs. A. Bedford-Jones, Westmount, Que.; R. E. Webster, Ottawa; Capt. O. Beck von Stafeldt, Ottawa; J. W. Morgan, Ottawa. Awards.—Gelding or mare (shown on line): 1, Mrs. Bedford-Jones, on Fashion Plate; 2, Bovaird, on Diffident by Ardon; 3, Tilt, on Pearl by Selwick. Gelding or mare, carrying 175 lbs.: 1, Morgan, on Marlboro by Cricklade; 2, Webster, on Shiner by Valjean; 3, Stafeldt, on Rex by George V. Gelding or mare carrying less than 175 lbs.: 1, Mrs. Bedford-Jones, on Fashion Plate; 2, Morgan, on Sensation.

PONIES.—Exhibitors.—J. & L. C. Wilkin, Myrtle Station; T. B. Macaulay, Hudson Heights, Que.; T. A. Russell, Downsview; Thos. L. Mercer, Markdale; J. Lloyd-Jones, Burford; Mrs. Geo. Stacey, Ottawa; Wm. Meharey, Russell. Awards.—Hackney stallion, any age: 1, Wilkin, on Whitegate Pimple by Whitegate Swell; 2, Macaulay, on Mount Victoria Success by Royal Success. Hackney mare, any age: 1, Macaulay, on Glenavon Victoria by Torchfire. Shetland stallion, any age: 1, Macaulay, on Silver Star of Transy by Seaweed; 2, Wilkin, on Honey Boy by Jolly. Shetland mare, any age: 1, Wilkin, on Intelligent by Extraordinary; 5, Russell, on Daisy by Prince of the House of David; 3, Macaulay, on Flossie of Tullkallen by Border Earl's Hall. Pony stallion, any other breed: 1, Wilkin, on Forest Don by Forest Weedon; 2, Mercer, on Electricity by Dyoll Starlight; 3, Lloyd-Jones, on Daylight by Greylight. Pony mare, any other breed: 1, Wilkin, on Greenbrae Ruby; 2, Macaulay, on Spot by Exmoor; 3, Mercer, on Towyvale by Black Diamond.

Beef Cattle. The number of entries in beef cattle surpassed that of former years. The majority of the animals were well fitted, and represented their respective breeds and classes very creditably. As good a line-up of prime animals as ever graced the showing competed for the honor of championship over all beef animals at the show. Finally the award was given to Pritchard Bros., on Riverjack, a deep, thick-bodied, low-set, well-fleshed, pure-bred Shorthorn steer.

All awards in the beef classes were made by J. G. Barron, of Carberry, Manitoba. SHORTHORNS.—Judging by the number of entries, compared with the number of other breeds exhibited, Shorthorns were the most popular. The classes for pure-bred stock were nearly all well filled, and there was strong competition in the grade classes, most of the animals being Shorthorns; only a few Angus competed. Exhibitors were: Pritchard Bros., Fergus; J. Black, Fergus; A. A. Armstrong, Fergus; T. A.

Jean Armour by Dunure (David; 3, Batty, on Nellie Carruchan by Gallant Carruchan; 4, Bradley, on Queen Favorite by Clan Favorite; 5, Scharf, on Rose of Fairview, by Lucky Coin. Champion stallion, Graham Bros., on Royal Regent. Grand champion male, Graham Bros., on Lord Gleniffer. Champion mare, Graham Bros., on Lady Bydand. Grand champion female, Hogg, on Royalette.

CANADIAN-BRED CLYDESDALES (Amateurs only).—Exhibitors.—E. H. Graham & Son, Carp; Lew. Richardson & Son, Ashburn; W. A. Morrow, Russell; W. J. Graham, Almonte; W. C. Platten, Port Perry; E. C. Ross, Martintown; H. C. Pinkey, Dunrobin; J. G. Hodgins, Carp; R. T. Brownlee, Hemmingford; J. Rathwell & Son, Navan; F. W. Bradley, Seagrave; A. B. McConnell, Chesterville.

Awards.—Aged stallion: 1, Richardson & Son, on Ross MacGregor by Lord George; 2, Platten, on Chattan's Buchlyvie by Dunure Soutar; 3, Morrow, on Baron Morris by Baron's Treasure; 4, Graham, on Baron Gibson by Baron Sillith. Stallion, foaled in 1913: 1, Ross, on Glengarry Lad by Vivacity; 2, Pinkey, on Sir William Torrance by Sir Torrance; 3, Graham & Son, on Treasurer's Best by Baron's Treasure. Stallion foaled on or after Jan. 1, 1914: 1, Hodgins, on Scottish Diadem by Scottish Hero; 2, Brownlee, on Oakhurst Sir Robert by Sir Spencer; 3, McConnell, on Black Guard by On Guard. Mare, foaled on or after Jan. 1, 1913: 1, Rathwell & Son, on Princess Lucy Belle by Baron's Treasure. Mare foaled in 1913: 1, Bradley, on Minnie Favorite by Clan's Favorite; 2, Morrow, on Golden Winnie by Golden Crown. Mare foaled on or after Jan. 1, 1914: 1, Bradley, on Queen Favorite by Clan's Favorite; 2, Ross, on Lady Guard by On Guard.

HEAVY DRAFT.—Mare or gelding: 1, Firstbrook Bros., Toronto, on Claude by Two-and-One; 2, Smith & Richardson, on Dickie Belle by Cariskey 2nd; 3, G. S. Cochrane, Columbus, on Mary Kirkwood by Royal Favorite. Mare or gelding (amateurs): 1 and 2, R. Beggs, Mountaln, on Mollie and Bob; 3 and 4, A. Rowe, Maxville. Heavy-draft team, R. Beggs. Three Canadian-bred draft horses, get of one sire: 1, R. Ness & Son.

In the Shires, Percherons and light breed classes the awards were made by Robt. Graham, Toronto. While these classes were not so well filled as usual, some fine animals came before the judge.

SHIRES.—Only one Shire stallion was at the Show. Jas. Callender, North Gower, exhibited Verona Leader by Uncle Sam.

PERCHERONS.—Only three aged stallions appeared in their class. Jet, showing snappy action, and fine quality, stood first. Later he was awarded the championship. The blue ribbon went to Houp, a well-muscled horse with fair action. Third place was occupied by Kosaque, the heaviest horse of the trio, but not quite as free a mover.

In the aged mare class was Marie, a splendid representative of the breed, with substance and quality.

Exhibitors.—A. R. Hossie, Perth; W. D. Steen, Brampton; J. Tweedie, Papineauville, Que.; W. Wood, Cornwall.

Awards.—Stallion, foaled previous to Jan. 1, 1913: 1, Steen, on Jet by Etudiant; 2, Tweedie, on Houp by Rovili; 3, Hossie, on Kosaque by Falot. Stallion, foaled in 1913: 1, Wood, on Count of Cornwall by Veilleur. Stallion foaled on or after Jan. 1, 1914: 1, Wood, on Duke of Cornwall by Harany. Aged mare: 1, Wood, on Marie by Cheri. Champion stallion, Steen, on Jet.

HACKNEYS.—In the aged class of stallions was Spartan, a winner at many previous shows; again showing his fine conformation and stylish action, was given the red ribbon. Hillhurst Fashion, a somewhat larger horse, was second and Harry Lauder third.

Only three two-year-olds came before the judge. Model's Best and Oscar strove for first place; the red ribbon finally going to Model's Best on account of her freer action. Jess Willard, a younger horse than the other two, was placed third.

The class for aged mares was represented by splendid animals. Princess Eudora, with her stylish action and nice conformation was awarded first place, with Miss Derwent a close second.

A class for mares foaled on or after Jan. 1, 1913, brought out animals of different ages. Model's Queen, while not quite the size of some of her competitors, showed superior action, and received the red ribbon. Bayview Lady, a big, strong mare, was second. Dainty Spartan, a young horse, was third, and Minnie Derwent fourth.

Exhibitors.—Jas. Tilt, Brampton; Jos. Teller, Milton West; R. T. Brownlee, Hemmingford, Que.; A. Watson & Son, Forest; H. M. Douglas, Elmvale; W. W. Hogg, Thamesford; John A. Boag & Son, Queensville.

Awards.—Stallion, foaled previous to Jan. 1, 1913 (15 hands, 2 inches or over): 1, Tilt, on Spartan by Polonius; 2, Brownlee, on Hillhurst Fashion by Cobhurst; 3, Telfer, on Harry Lauder by Warwick Model. Stallion foaled previous to Jan. 1, 1913, (under 15 hands, 2 inches): 1, Watson & Sons, on Wenona Jubilee by Jubilee Chief; 2, Douglas, on Anticipator by Rosador. Stallion, foaled on or after Jan. 1, 1913: 1, Hogg, on Oscar by Terrington Semaphore; 3, Watson & Son, on Jess Willard by Wenona Jubilee. Mare, foaled previous to Jan. 1, 1913: 1 and 3, Telfer, on Princess Eudora by Vanguard, and Lady Paragon by Vanguard; 2, Tilt, on Miss Derwent by Derwent Performer. Mare, foaled on or after Jan. 1, 1913: 1, Telfer, on Model's Queen by Warwick Model; 2, Boag & Son, on Bayview Lady by Blanch Surprise; 3, Tilt, on Dainty Spartan by Spartan. Champion stallion, Tilt, on Spartan. Champion mare, Telfer, on Model's Queen.

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All awards in the beef classes were made by J. G. Barron, of Carberry, Manitoba. SHORTHORNS.—Judging by the number of entries, compared with the number of other breeds exhibited, Shorthorns were the most popular. The classes for pure-bred stock were nearly all well filled, and there was strong competition in the grade classes, most of the animals being Shorthorns; only a few Angus competed. Exhibitors were: Pritchard Bros., Fergus; J. Black, Fergus; A. A. Armstrong, Fergus; T. A.

Russell, Townsview, Kyle Bros., Drumlo; E. Brien, & Sons, Ridgetown. Awards.—Steer, two years: 1, Pritchard Bros.; 2 and 3, Black. Steer, yearling: 1, 2 and 4, Pritchard Bros.; 3, Armstrong. Steer, calf: 1, Kyle Bros.; 2, Russell; 3, Pritchard Bros.; 4, Armstrong. Heifer, two years: 1, Kyle Bros. Heifer, yearling: 1 and 4, Kyle Bros.; 2, Russell; 3, Pritchard Bros. Heifer, calf: 1 and 2, Kyle Bros.; 3, Pritchard Bros.; 4, Brien & Sons.

In HEREFORDS the only exhibitors were: W. H. & J. S. Hunter, Orangeville, Ont. In ABERDEEN-ANGUS Pritchard Bros. took first for steer or heifer one year old, and A. A. Armstrong was the only exhibitor in class for cow three years or over.

GRADE OR CROSS OF ANY OTHER BREED.—Exhibitors: Wm. Alison, Galt, Ont.; Pritchard Bros., Fergus; J. Black, Fergus; J. L. Benham, Fergus; T. A. Russell, Townsview; Jas. Scott, Paris; Kyle Bros., Drumlo; A. A. Armstrong, Fergus; C. A. Brien, Ridgetown; S. Stockton, Paris. Awards.—Steer, two years: 1, 4 and 5, Pritchard Bros.; 2, Black; 3, Benham; 6, Alison. Steer, yearling: 1, 3 and 4, Pritchard Bros.; 2, Russell; 5, Scott. Steer, calf: 1 and 5, Russell; 2, Pritchard Bros.; 3, Armstrong; 4, Black. Heifer, two years: 1, Brien; 2 and 4, Benham; 3, Stockton. Heifer, yearling: 1 and 3, Pritchard Bros.; 2, Kyle Bros.; 4, Armstrong. Heifer, calf: 1, Armstrong; 2, Brien; 3, Black; 4, Pritchard Bros.

AMATEUR CLASSES.—Steer, two years: 1, 3 and 4, Black; 2, Benham. Steer, yearling: 1, Scott. Heifer, two years: 1, Brien; 2 and 4, Benham; 3, Stockton. Heifer, yearling: 1, Benham; 2, Scott. Heifer, calf: 1 and 3, Brien; 2, Black. Shorthorn Grades: 1 and 4, Pritchard Bros.; 2 and 3, Russell. Three Export Steers: 1 and 4, Pritchard Bros.; 2 and 3, Armstrong. Beef Animals for Dressed Carcass Class: 1, Pritchard Bros.; 2, Armstrong; 3, Alison; 4, Benham.

The best beef animal of the Show was Riverjack, exhibited by Pritchard Bros.

Sheep. From a breed-type and quality standpoint, the sheep exhibit was up to a high standard. All the exhibitors were from Western Ontario. The Long-Woolled classes were judged by J. M. Gardhouse, of Weston, Ont., and the Short-Woolled by W. A. Dryden, Brooklyn, Ont.

In Cotswolds the exhibitors were: James A. Campbell, Thedford; G. H. Mark & Son, Little Britain; and E. Brien & Son, Ridgetown. Lincolns were exhibited by J. S. Gosnell, & Son, Highgate; and Jos. Linden, Denfield. Leicesters were exhibited by E. Brien & Sons; A. & W. Whitelaw, Guelph; John Kelly & Son, Shakespeare; and A. Ayre, Bowmanville. Oxfords were exhibited by Chas. A. Brien, Ridgetown, Ont., who captured all the awards. Shropshires were exhibited by J. R. Kelsey, Woodville; J. Lloyd-Jones, Burford; and J. E. Brethour & Nephews, Burford.

Southdowns were exhibited by J. E. Brethour & Nephews; J. Lloyd-Jones; A. Ayre; Hampton Bros.; and Geo. L. Teller, Paris. Dorset Horns were exhibited by W. E. Wright & Son, Glanworth; A. Watson & Sons, Forest; and A. Ayre. Hampshires were exhibited by Geo. L. Teller and John Kelly & Son. Grades and Crosses were exhibited by breeders already named, and by A. A. Armstrong, Fergus. Following are the awards: COTSWOLDS.—Wether, under one year: 1, 4 and 5, Brien; 2, Campbell; 3, Mark. Three wethers, under one year: 1 and 4, Brien; 2, Campbell; 3, Mark. Ewe, under one year: 1 and 3, Mark; 2 and 5, Campbell; 4, Brien. Three ewes, under one year: 1, Mark; 2, Campbell; 3, Brien.

LINCOLNS.—Wether, under one year: 1, 2 and 5, Linden; 3 and 4, Gosnell. Three wethers, under one year: 1, Linden; 2, Gosnell. Ewe, under one year: 1, 2, 4 and 5, Gosnell; 3, Linden. Three ewes under one year: 1 and 2, Gosnell; 3, Linden.

LEICESTERS.—Wether, under one year: 1, 2 and 4, Kelly; 3, Brien; 5, Whitelaw. Three wethers, under one year: 1, Kelly; 2, Whitelaw; 3, Ayre. Ewe, under one year: 1, 3 and 5, Whitelaw; 2 and 4, Kelly. Three ewes under one year: 1 and 3, Whitelaw; 2, Kelly.

SHROPSHIRE.—Wether, under one year: 1, 4 and 5, Lloyd-Jones; 2 and 3, Brethour. Three wethers, under one year: 1 and 3, Brethour; 2, Lloyd-Jones. Ewe, under one year: 1, 4 and 5, Brethour; 2 and 3, Lloyd-Jones. Three ewes under one year: 1 and 3, Brethour; 2, Lloyd-Jones; 4, Kelsey.

SOUTHDOWN.—Wether, under one year: 1, 2 and 3, Lloyd-Jones; 4, Teller; 5, Hampton Bros. Three wethers under one year: 1, Lloyd-Jones; 2, Brethour; 3, Teller. Ewe, under one year: 1 and 5, Lloyd-Jones; 2, Ayre; 3 and 4, Hampton Bros. Three ewes under one year: 1, 4 and 5, Hampton Bros.; 2, Lloyd-Jones; 3, Ayre.

DORSETS.—Wether, under one year: 1 and 3, Wright; 2, 4 and 5, Ayre. Three wethers under one year: 1, Ayre; 2, Wright. Ewe, under one

year: 1, 2 and 5, Watson; 3, Ayre; 4, Wright. Three ewes under one year: 1 and 4, Watson; 2, Wright; 3, Ayre.

HAMPSHIRE.—Wether, under one year: 1, 3 and 4, Kelly; 2 and 5, Telfer. Three wethers under one year: 1, Kelly; 2, Telfer. Ewe, under one year: 1 and 4, Kelly; 2, 3 and 5, Telfer. Three ewes under one year: 1, Telfer; 2, Kelly.

GRADES (Long-Woolled).—Wether, under one year: 1, 2 and 3, Brien; 4, Campbell; 5, Whitelaw. Three wethers under one year: 1 and 2, Brien; 3, Whitelaw; 4, Campbell. Ewe, under one year: 1 and 4, Kelly; 2, Linden; 3, Campbell; 5, Mark. Three ewes under one year: 1, Kelly; 2, Linden; 3, Campbell; 4, Mark; 5, Brien.

GRADES (Short-Woolled).—Wether, under one year: 1 and 5, Lloyd-Jones; 2, Brethour; 3, Hampton; 4, Kelsey. Three wethers under one year: 1, Brethour; 2, Lloyd-Jones; 3, Hampton; 4, Kelsey; 5, Armstrong. Ewe, under one year: 1, 3 and 5, Brethour; 2, Hampton; 4, Kelly. Three ewes under one year: 1, Brethour; 2, Hampton; 3, Telfer.

The silver cup presented by the Union Stock Yards, West Toronto, for the best pen of four lambs, any pure-bred or cross, was won by J. E. Brethour on a pen of Shropshires.

Swine.

The quality of the swine exhibit was particularly good, and the entry larger than ever before, necessitating the erection of several new pens. D. C. Flatt, of Hamilton, who judged all the classes, was warm in his praise of the entry throughout.

Yorkshires were exhibited by J. K. Featherston, Streetsville; J. E. Brethour & Nephews, Burford; Alex. Dynes, Ottawa; and D'Arcy Scott, Ottawa.

Berkshires were exhibited by W. W. Brownridge, Georgetown; E. Brien & Sons, Ridgetown; and W. G. Scott, Limehouse.

Tamworths were exhibited by E. Brien & Son, Ridgetown; J. K. Featherston, Streetsville; J. G. Ellenton, Hornby; and Alex. Dynes, Ottawa.

Grades and Crosses were exhibited by the breeders already named, and by Pritchard Bros., Fergus.

All the exhibitors were from Ontario. Following are the awards:

YORKSHIRES.—Barrow, six months and under nine: 1 and 2, Brethour; 3 and 4, Featherston. Barrow, under six months: 1, Dynes; 2 and 3, Featherston; 4 and 5, Brethour. Sow, six months and under nine: 1 and 2, Featherston; 3 and 4, Brethour. Sow, under six months: 1, 3 and 4, Brethour; 2, Featherston; 5, Dynes.

BERKSHIRES.—Barrow, six months and under nine: 1 and 2, Brownridge; 3 and 4, Brien. Barrow, under six months: 1 and 2, Brownridge; 3, Brien; 4, Scott. Sow, six months and under nine: 1 and 4, Brien; 2 and 3, Brownridge. Sow, under six months: 1, Scott; 2 and 4, Brien; 3, Brownridge.

TAMWORTHS.—Barrow, six months and under nine: 1, Brien; 2, Ellenton. Barrow, under six months: 1 and 2, Brien; 3 and 4, Featherston. Sow, six months and under nine: 1 and 4, Brien; 2 and 3, Ellenton. Sow, under six months: 1 and 2, Ellenton; 3, Brien.

GRADES AND CROSSES.—Barrow, six months and under nine: 1 and 2, Featherston; 3 and 5, Brethour; 4, Brownridge. Barrow, under six months: 1, Pritchard; 2, Brethour; 3 and 4, Dynes; 5, Brien. Sow, six months and under nine: 1, Featherston; 2 and 3, Dynes; 4, Brownridge. Sow, under six months: 1, Pritchard Bros.; 2 and 3, Dynes; 4, Brethour; 5, Brownridge.

BACON HOGS.—Three pure-breds: 1, 3 and 4, Brethour; 2 and 5, Featherston; 6, Dynes; 7, Scott.

Three Grades or Crosses: 1, Brethour; 2, Pritchard Bros.; 3, Brownridge; 4, Featherston; 5, Dynes.

Amateur Exhibitors.—Tamworths: J. G. Ellenton, Hornby, Ont., 1 and 2. Berkshires: W. G. Scott, Limehouse, Ont., 1 and 2.

The Dairy Test.

The number of entries in the dairy classes was about equal to last year, but not quite up to the average for the past few years. Some very commendable records in milk production were made, but the percentage of fat was somewhat lower than usual. The number of Holsteins and Ayrshires was nearly the same. One herd of Shorthorns represented the dual-purpose class, but

Tabulated Results of the Test.

AYRSHIRES.

Cow, Aged:—	Total lbs. milk	Per cent. fat	Total points
1, Glenshamrock Cauty Again, A. Hume & Co., Campbellford, Ont.	170.4	3.9	216.62
2, Polly 2nd of Fernbrook, E. B. Palmer & Sons, Norwich	161.3	3.9	201.38
3, Spicy Lass, A. Hume & Co.	157.5	3.8	196.77
4, Hobsland Barbara, R. R. Ness, Howick, Que.	151.4	3.8	184.16
5, Gracie, R. T. Brownlee, Hemmingford, Que.	142.0	4.0	179.29
6, Lady Marion, R. T. Brownlee	138.3	4.0	177.54
7, Flora, D. T. Ness, Howick, Que.	143.8	4.0	177.05
8, Airmount Boneva, E. B. Palmer & Sons	154.2	3.5	175.55

Cow, 36 months, under 48:

1, White Floss of Springbank, Jos. Hudson & Son, Lyn	151.7	3.5	173.43
2, Humeshaugh Helen, A. Hume & Co.	131.1	3.8	159.57
3, Lily of Fernside, E. B. Palmer & Sons	131.3	3.0	138.50
4, Jemima of Springbank, Jos. Hudson & Sons	117.9	3.4	132.43

Heifer, under 36 months:—

1, Susana of Evergreen, E. B. Palmer & Sons	146.7	3.5	169.26
2, Burnside Pearlring, R. R. Ness	105.0	3.8	128.88
3, White Rose of Lacolle, R. T. Brownlee	109.7	3.4	123.78

HOLSTEINS.

Cow, Aged:—

1, Desta, Jas. Knapp, Merrickville	295.6	2.8	279.86
2, Ideal Netherland Posch, W. J. Bailey, Jarvis	266.7	3.0	268.70
3, Lady De Kol Patty, Ed. Baker, Winchester	239.6	3.1	247.25
4, Pontiac Alice, M. McDowell, Oxford Centre	223.7	3.3	248.55
5, Margaret Rose, Ed. Baker, Winchester	220.1	3.3	241.56
6, Amy Abbekerk Posch, A. E. Hulet, Norwich	207.6	3.3	226.36

Cow, 36 months and under 48:—

1, Lyndewood Colantha, W. J. Bailey	228.5	3.3	250.87
2, Ideal Lady Favorite, W. J. Bailey	195.2	3.6	229.14
3, Pauline Colantha Mercena, A. E. Hulet	219.2	3.1	224.32
4, Lady Ormsby Colanthus, M. McDowell	163.5	3.6	195.44
5, Alice Ormsby, M. McDowell	167.9	3.3	183.58

Heifer, under 36 months:—

1, Lady Pauline Colantha, A. E. Hulet	184.7	3.4	205.89
2, Pansy Connor De Kol, Ed. Baker	161.1	3.7	191.66
3, Dora De Kol Korndyke, Ed. Baker	181.3	3.2	191.50
4, Princess Ormsby De Kol, M. McDowell	180.2	3.0	181.97
5, Abbekerk Jewell De Kol, J. B. Dowler, Billing's Bridge, Ont.	151.0	3.4	167.84
6, Lady Francy De Kol Teake, Jas. Knapp	122.0	3.5	148.55

SHORTHORNS.

Cow, Aged:—

1, Royal Princess, S. W. Jackson, Woodstock	140.3	4.2	185.86
1, Roselia, S. W. Jackson	114.0	3.6	135.02
3, Fascination, S. W. Jackson	106.3	3.9	133.88

Heifer, under 36 months:—

1, Red Bess, S. W. Jackson	78.5	4.3	106.38
2, Butterfly Rose, S. W. Jackson	66.9	4.4	97.10

GRADES.

Cow, 48 months or over:—

1, Dell, W. J. Bailey	215.6	3.4	242.20
2, Queen Edna De Kol, Ed. Baker	214.4	3.4	236.19
3, Cherry, Dowler Bros.	170.5	4.0	216.97
4, Grace, M. McDowell	163.9	3.5	193.45
5, Hazel, E. B. Palmer & Sons	131.9	3.6	158.75
6, Bell, Dowler Bros.	137.7	3.1	143.10

Cow, 36 months and under 48:—

1, Blossom, Dowler Bros.	177.2	3.9	219.89
2, Maggie, M. McDowell	145.0	4.1	188.37
3, Denty's Daisy, E. B. Palmer & Sons	149.9	3.8	182.58
4, Flossie, Dowler Bros.	153.7	3.2	171.16
5, Nixie, D. T. Ness	120.7	3.6	140.81

Heifer, under 36 months:—

1, Beatrice Henverveld De Kol, Ed. Baker	158.4	3.3	169.44
2, Beauty, Dowler Bros., Billing's Bridge	114.4	4.4	159.10
3, Denty's Pride, E. B. Palmer & Sons	119.4	3.2	127.99

no Jerseys were entered. The Holstein cow, Desta, owned by Jas. Knapp, Merrickville, was not only head of her class, but champion over all breeds. During the 72 hours of the test her record was 295.5 lbs. of milk, testing 2.8% fat, making 279.86 points. She is a cow of good capacity, with a splendid udder formation.

Judging Competition.

The Inter-County Judging Competition, conducted under the auspices of the Ontario Department of Agriculture, was won by the team from Lanark County. Glengarry County was second. Each county in the contest, represented by three men, was competing for a trophy given by Peter White, K. C., of Pembroke. Those in the contest had five classes of stock to place, and give

reasons for their placings. Sixty per cent. was allowed for placing, and forty per cent for reasons. The boys were required to give oral as well as written reasons. Other counties in order of standing were: 3, Lennox and Addington; 4, Grenville; 5, Frontenac; 6, Leeds; 7, Northumberland; 8, Dundas; 9, Prince Edward. The men in the winning team were H. Poole, H. Smith, and T. Stewart. These men were trained by P. H. D. Harding, District Representative for Lanark County.

Lectures.

A number of practical addresses were delivered in connection with the Fair. A report of Lectures, Poultry and Grain awards will appear in our next issue.

Toronto, Montreal, Buffalo, and Other Leading Markets

Toronto.

The receipts of live stock at the Union Stock Yards, West Toronto, from Sat. Jan. 22 to Mon., Jan. 24, numbered 126 cars including 2,662 cattle, 111 calves, 763 hogs and 178 sheep and lambs. Quality generally good, market slow and easy. Heavy choice steers, \$7.65 to \$8; choice butchers', \$7.25 to \$7.50; good, \$7

to \$7.25; medium, \$6.65 to \$6.90; common, \$6 to \$6.50; feeders, \$6 to \$6.75; stockers, \$4.25 to \$5.75; milkers, \$70 to \$100; butcher cows, \$3.25 to \$6.25; bulls, \$5 to \$7; calves, \$5.51 to \$10.50. Lambs, \$10.50 to \$12; sheep, \$4.50 to \$8.50. Hogs, \$9.75, fed.

TOTAL LIVE STOCK

The total receipts of live stock at the City and Union Stock Yards for the past week were:

	City	Union	Total
Cars	36	412	448
Cattle	452	5,427	5,879
Hogs	482	8,469	8,951
Sheep	381	1,047	1,428
Calves	58	498	556
Horses	202	882	1,084

The total receipts of live stock at the two markets for the corresponding week of 1915 were:

	City	Union	Total
Cars	49	377	426
Cattle	382	4,352	4,734
Hogs	1,049	12,268	13,317
Sheep	771	2,884	3,655
Calves	37	320	357
Horses	50	24	74

The combined receipts of live stock at the two markets for the past week show an increase of 22 car loads 1,145, cattle 199 calves and 1,010 horses and a decrease of 4,366 hogs and 2,227 sheep and lambs,

est.

Total lbs. milk	Per cent. fat	Total points
170.4	3.9	216.62
161.3	3.9	201.38
157.5	3.8	196.77
151.4	3.8	184.16
142.0	4.0	179.29
138.3	4.0	177.54
143.8	4.0	177.05
154.2	3.5	175.55
151.7	3.5	173.43
131.1	3.8	159.57
131.3	3.0	133.50
117.9	3.4	132.43
146.7	3.5	169.26
105.0	3.8	128.88
109.7	3.4	123.78
295.6	2.8	279.86
266.7	3.0	268.70
239.6	3.1	247.25
223.7	3.3	248.55
220.1	3.3	241.56
207.6	3.3	226.36
228.5	3.3	250.87
195.2	3.6	229.14
219.2	3.1	224.32
163.5	3.6	195.44
167.9	3.3	183.58
184.7	3.4	205.89
161.1	3.7	191.66
181.3	3.2	191.50
180.2	3.0	181.97
151.0	3.4	167.84
122.0	3.5	148.55
140.3	4.2	185.86
114.0	3.6	135.02
106.3	3.9	133.38
78.5	4.3	106.38
66.9	4.4	97.10
215.6	3.4	242.20
214.4	3.4	236.19
170.5	4.0	216.97
163.9	3.5	193.45
131.9	3.6	158.75
137.7	3.1	143.10
177.2	3.9	219.89
145.0	4.1	188.37
149.9	3.8	182.58
153.7	3.2	171.16
120.7	3.6	140.81
158.4	3.3	169.44
114.4	4.4	159.10
119.4	3.2	127.99

placements. Sixty per cent. was required for rearing and forty per cent for weaning. Other counties in order 3, Lennox and Addington; 4, Lennox; 6, Leeds; 7, Northumberland; Prince Edward. The men in charge were H. Poole, H. Smith, and the men were trained by P. H. Representative for Lanark

Lectures. Technical addresses were delivered at the Fair. A report of the Grain awards will appear in

ing Markets

City	Union	Total
49	377	426
382	4,352	4,734
1,049	12,268	13,317
771	2,884	3,655
37	320	357
50	24	74

combined receipts of live stock at markets for the past week show a decrease of 22 car loads, 1,145, cattle and 1,010 horses and a decrease of 2,227 sheep and lambs,

compared with the corresponding week of 1915.

The butchers' cattle trading enjoyed three days of active business at prices steady with the previous week's close but on Thursday the demand eased off and trade became druggy at 10c. to 15c. per cut lower. During the week several cars of very choice heavy steers (1,300-1,400 lbs.) sold from \$7.90-\$8.15. At the close \$8 per cut was the market top. The best of the butchers' handy weights brought \$7.60-\$7.85, while medium to good kinds fell between \$6.75-\$7.50. The bulk of the sales were between \$7.10 and \$7.75. Bulls were heavily consigned all week and sold well until towards the close, when they weakened 10c.-20c. in sympathy. Cows followed suit. Stockers and feeders have been very quiet and at the same time very high for anything good. Good yearlings and feeders (850-950 lbs.) are worth \$6.25-\$6.75. Common eastern stockers are still coming from the barnyards in limited quantities and are disposed of at \$4.75-\$5.25. The American demand has not been prominent this week here and speculators have nothing to do. This of course explains the quiet market. Milkers and springers are not subject just now to the great demand that has been usual, and even the good kind have been slower. Not many cows in the past few days have exceeded \$90 and some speculators do not know where to unload. But this condition will not last long. Calves were strong and did a brisk business all week. The top price is 10 1/2c. per lb. and 6c. is about the low limit for the light rough dairy veals. Heavy fat kinds (300-550 lbs.) sell well at 7c.-8 1/2c. per lb. Lambs and sheep have had phenomenally light receipts—at least two days the consignment was less than 100. Values have kept up well for the drover; light lambs going at \$11.25-\$11.75 and light sheep \$8-\$8.50. Heavy lambs alone (125 lbs.) became druggy towards the finish and sold at \$10-\$10.50. Hogs started out at \$9.25 but too many influences wanted the porkers, and they were gradually and steadily bid up to \$9.50, and then the packers sent out this new figure, but outside buying again put on another 10c.-15c. per cut.

Butchers' Cattle.—Choice heavy steers at \$7.80 to \$8; choice butchers' cattle at \$7.50 to \$7.75; good at \$7 to \$7.40; medium at \$6.75 to \$7; common at \$6 to \$6.60; choice cows at \$6.25 to \$6.50; good cows at \$5.75 to \$6.15; medium cows at \$5.25 to \$5.60; common cows at \$4.50 to \$5; canners and cutters at \$3 to \$4.25; light bulls at \$5 to \$6; heavy bulls at \$6.50 to \$7.

Stockers and Feeders.—Choice feeders, 900 to 950 lbs., at \$6.25 to \$6.75; good feeders, 800 to 900 lbs., \$6 to \$6.25; stockers 700 to 800 lbs. at \$5.25 to \$5.75; common stocker steers and heifers at \$4.75 to \$5.25; yearlings 600 to 650 lbs., at \$6 to \$6.60.

Milkers and Springers.—Choice milkers and springers at \$90 to \$100; good cows at \$70 to \$85; common cows at \$45 to \$65. Veal Calves.—Choice at \$10 to \$10.50; good at \$8 to \$9.50; common and light at \$5.50 to \$7.50; heavy fat calves at \$7 to \$8.50.

Sheep and Lambs.—Light sheep \$7.75 to \$8.50; heavy and common sheep \$4.50 to \$7.50; lambs \$10 to \$11.75; cull lambs \$7 to \$8.50.

Hogs.—Selects fed and watered \$9 to \$9.60; 50c. is being deducted for heavy fat hogs and thin light hogs; \$2.50 off for sows, and \$4 off for stags, from prices paid for selects.

BREADSTUFFS.

Wheat.—Ontario, No. 2 winter, per car lot, \$1.09 to \$1.10, according to freights outside; slightly sprouted and tough, \$1.06 to \$1.09, according to sample; sprouted, smutty and tough, 97c. to \$1.02; feed wheat, 85c. to 90c., according to sample. Manitoba, No. 1 northern, \$1.24 1/4, in store, Fort William; No. 2 northern, \$1.22 1/4, in store, Fort William; No. 3 northern, \$1.20, in store, Fort William.

Oats.—Ontario, No. 3 white, 42c. to 43c., according to freights outside; commercial oats, 41c. to 42c.; No. 2 Canada Western, 47c., in store, Fort William; No. 3 Canada Western, 45c., in store, Fort William; Extra No. 1 feed, 45c., in store, Fort William; No. 1 feed, 44c., in store, Fort William.

Rye.—No. 1 commercial, 90c. to 91c., according to freights outside; rejected, 77c. to 87c., according to sample. Buckwheat.—Nominal, car lots, 78c. to 79c., according to freights outside. Barley.—Ontario, good malting, 63c. to

65c., according to freights outside; feed barley, 55c. to 57c., according to freights outside.

American Corn.—No. 3 yellow, new, 82c., track, Toronto.

Canadian Corn.—Feed, old, 77c., nominal, Toronto.

Peas.—No. 2, nominal, per car lot, \$1.75. According to freights outside; sample peas, according to sample, \$1.25 to \$1.75.

Flour.—Ontario, winter, \$4.80 to \$4.90, according to sample, prompt shipment. Manitoba flour—Prices at Toronto were: First patents \$7.00; second patents, \$6.50, in jute; strong bakers', \$6.30, in jute; in cotton, 10c. more.

HAY AND MILLFEED

Hay.—Baled, car lots, track, Toronto, No. 1, \$17.50 to \$18; No. 2, \$13.50 to \$15, track, Toronto, per ton.

Straw.—Baled, car lots, \$6.50 to \$7, track, Toronto.

Bran.—\$24 per ton, Montreal, freight; shorts, \$25, Montreal freight; middlings, \$26, Montreal freight; good feed flour, per bag, \$1.75, Montreal freights.

COUNTRY PRODUCE.

Butter.—Prices remained stationary on the wholesales during the past week. Creamery fresh made pound squares, 35c. to 36c.; creamery, cut, 34c. to 35c.; creamery solids, 34c.; separator dairy, 33c. to 34c.

Eggs.—New laid eggs also remained stationary on the wholesales during the past week, selling at 40c. per dozen; cold-storage eggs, 30c. to 33c. per dozen.

Cheese.—New, large, 19c.; twins, 19 1/2c. per lb.

Honey.—Extracted, 11 1/2c. to 12 1/2c. per lb.; combs, per dozen sections, \$2.40 to \$3.

Beans.—Primes, \$4.20; hand-picked, \$4.50 per bushel.

Potatoes.—Potatoes advanced again last week, with every prospect of further advances, as they are very scarce. Ontario, per bag, car lot, \$1.75; New Brunswick, per bag, car lot, \$1.90.

Poultry (live weight).—Chickens 14c. to 17c. per lb.; fowl heavy 13c. per lb.; fowl, light, 11c. to 12c. per lb.; ducks 14c. per lb.; geese, 12c. per lb.; turkeys, young, 18c. to 20c. per lb.; old, 15c. to 17c. per lb.

HIDES AND SKINS.

City hides, flat, 18c.; country hides, cured, 16c.; country hides, part cured, 15c.; country hides, green, 14c.; calf skins, per lb., 18c.; kip skins, per lb., 16c.; sheep skins, \$1.50 to \$2; lamb skins and pelts, \$1.20 to \$1.35; horse hair, per lb., 37c.; horse hides, No. 1, \$3.50 to \$4.50. Wool, washed, 40c. to 44c. per lb.; wool, rejections, 33c. to 35c. per lb.; wool, unwashed, 28c. to 32c. per lb.

Montreal.

Very little change took place last week in the live stock markets. Butchers were buying freely, and as offerings were moderately large, the turnover represented considerable value. Sales of choice steers took place at 7 1/2c. to 8c. per lb., while good qualities ranged generally from around 7c. to 7 1/2c. and lower grades at 5 1/2c. to 6 1/2c. Butchers' cows show little change, prices ranging from 4 1/2c. to 6 1/2c. per lb. Bulls were also in fair demand at prices, ranging from 5 1/2c. to 6 1/2c., according to quality. Packers bought canning stock freely, and offerings all met with ready absorption at 3 1/2c. to 4c. per lb., for cows, and at 4 1/2c. to 4 3/4c. for bulls. Offerings of sheep and lambs were none too large, as the demand for these has been quite keen for a long time past. Ontario lambs sold at 10c. per lb. and Quebec at 9 1/2c. to 9 3/4c., while Ewes brought 6 1/2c. to 7c. per lb. Calves continued in good demand, and sales of milk-fed stock were made at 9 1/2c. to 10c. and of grass-fed at 5c. to 6 1/2c. Receipts of hogs continued moderately large, and prices held about steady, selects being quoted at 10 1/2c. to 10 3/4c. per lb., weighed off cars.

Horses.—Dealers reported the market very dull. There has, however, been some demand from the United States of late, and quite a number of horses have been shipped across the border in response thereto. In a general way, prices were lower than they were a few years ago. Receipts from the country were moderately large. Quotations were: Heavy draft, weighing 1,500 to 1,700 lbs., \$200 to \$250 each; light draft, 1,400 to 1,500 lbs., \$150 to \$200 each; small horses,

\$100 to \$125 each, and culls, \$50 to \$75 each. Fine saddle and carriage animals sold at \$200 to \$250 each.

Dressed Hogs.—There was a good trade in dressed hogs. There was no difficulty in disposing of everything in sight and the market showed a firm tone. Offerings were by no means large. Receipts were smaller than usual at this period of the year, in country-dressed hogs, and prices were steady at 13c. to 13 1/2c. per lb. for light weights. Abattoir fresh-killed stock was in fairly large supply, and prices were 14c. to 14 1/2c. per lb.

Poultry.—The market for turkeys was decidedly strong and prices advanced. Much the same was true of chickens, and, in fact, the whole poultry market may be said to have strengthened. Choicest, fresh-killed turkeys were exceedingly high, ranging from 26c. to 28c. per lb., while the ordinary stock sold at 24c. to 25c. Chickens were also dearer. Much depends on the quality, but it is said that very few choicest can now be had less than 22c. From this the price ranged as high as 26c. for the fancy stock. Ducks sold at 19c. to 20c. per lb. and geese and fowl at from 17c. to 20c., according to quality.

Potatoes.—The cold weather had a strengthening effect upon the price of potatoes, and choicest stock, either of Green Mountains or Quebec, was quoted at \$1.85 to \$1.90 per bag of 90 lbs. extra-track. In a jobbing way, no good potatoes could be had under \$2.00 per bag, and the price ranged up to \$2.10, extra-store.

Honey and Maple Syrup.—There was little change in this market from week to week. Pure Maple Syrup was quoted at 95c. to 97c. in 8-lb. tins; \$1.10 to \$1.12, for 10-lb. tins; \$1.40 to \$1.50, for 13-lb. white Maple sugar was 13c. per lb. Honey excited no special comment. White clover comb was 15c. to 16c. per lb., brown being 11 1/2c. to 13c.; white extracted was 11 1/2c. to 12 1/2c., and brown extracts, 10c. to 10 1/2c. Buckwheat was 8c. to 8 1/2c.

Eggs.—The production would seem to be increasing somewhat of late. At any rate, prices of fresh laid eggs were lower than they were a while ago. The market fluctuates considerably. Strictly fresh eggs were sold in wholesale way at 40c. to 42c. Selected stock was 39c., No. 1 candled, 32c. and No. 2 candled, 27c. to 28c.

Butter.—There was little change in the market for butter, and no particular alteration is looked for just now. Finest creamery was 34 1/2c. to 35c.; fine, 33 1/2c. to 34 1/2c.; seconds, 32 1/2c. to 33 1/2c., and dairy butter, 29c. to 30c.

Cheese.—The market was unchanged at 18 1/2c. to 18 3/4c. for finest colored; 18c. to 18 1/2c. for white and 17 1/2c. to 17 3/4c. for fine easterns.

Grain.—Wheat made new high records on the present crop during the week. Oats were very strong and prices advanced to 50c. and 51c. for No. 2 white oats; 49c. to 50c. for No. 3; 48c. to 49c. for No. 4, extra-store.

Flour.—Manitoba flour advanced 20c. per barrel and first patents were \$7.10; seconds, \$6.60, and strong bakers, \$6.40, in bags. Ontario winter wheat flour was steady at \$6.50 per barrel, for patents, and \$5.80 to \$5.90 for straight rollers, in wood, the latter being \$2.80 per bag.

Baled Hay.—The market for hay was steady at \$21 for No. 1; \$20.50 for extra good No. 2; \$20 for No. 2; and \$18.50 for No. 3, car loads extra-track.

Seeds.—Red clover was very scarce and dealers offered \$10 to \$12 a bushel for it at country points and \$7 to \$10 for Alsike, of which the crop was fair. Timothy was quoted \$9 to \$12 per 100 lbs.

Hides.—Lambskins advanced to \$2.35 each. Beef hides were steady at 20c., 19c. and 18c. per lb. Calf skins were 20c. and 18c. per lb., and horse hides were \$1.50 and \$2 each. Rough tallow was 1c. to 2 1/2c. per lb. and rendered, 6 1/2c.

Buffalo.

Shipping Steers.—Choice to prime natives \$8.75 to \$9.00; fair to good \$8.25 to \$8.50; plain \$7.75 to \$8.00; very coarse and common \$7.00 to \$7.50; best Canadians \$8.00 to \$8.25; fair to good \$7.25 to \$7.75; common and plain, \$6.50 to \$7.

Butchering Steers.—Choice heavy \$8 to \$8.25; fair to good \$7.00 to \$7.75; best handy, \$7.75 to \$8.25; common to good, \$6.25 to \$7.50; light, thin, \$5.50 to \$6.00; yearlings prime \$8.00 to \$8.75; yearlings, common to good, \$7.00 to \$7.75.

Cows and Heifers.—Prime weighty heifers, \$6.75 to \$7.25; best handy butcher heifers, \$6.75 to \$7.25; common to good, \$4.50 to \$6.50; best heavy fat cows, \$6.00

to \$6.50; good butchering cows, \$5.25 to \$5.75; medium to good, \$4.75 to \$5.25; cutters, \$3.75 to \$4.50; canners, \$3.00 to \$3.60.

Bulls.—Best heavy, \$6.75 to \$7.00; good butchering, \$6.25 to \$6.50.

Stockers and Feeders.—Best feeders, \$6.50 to \$7.00; common to good, \$5.25 to \$6.25; best stockers, \$6.00 to \$6.50; common to good, \$4.50 to \$5.75; good yearlings, \$6.00 to \$6.75; common, \$4.00 to \$4.75.

Milchers and Springers.—Good to best, in small lots, \$75.00 to \$85.00; in car loads, \$60.00 to \$70.00; medium to fair, in small lots, \$45.00 to \$55.00; in car loads, \$45.00 to \$50.00; common, \$30.00 to \$40.00.

Hogs.—Market occupied a very favorable position, the first half of last week, and the following two days, under continued heavy receipts, prices showed a break. Monday several decks brought \$7.65, with bulk going at \$7.60, Tuesday the top was \$7.85, with bulk going at \$7.75 and \$7.80, and Wednesday the majority moved at \$7.80, with a few \$7.85. Thursday values were declined five to ten cents from Wednesday, and Friday, with receipts reaching close to 100 double decks, the bulk of the crop moved at \$7.50, few \$7.55. Monday pigs sold at \$7.00; Tuesday and Wednesday they brought from \$7.25 to \$7.40; Thursday none sold above \$7.25, and Friday bulk went at \$6.75. Roughs, \$6.40 to \$6.75, and stags, \$5.50 down. Receipts last week were approximately 59,500 head, being against 58,569 head for the week before, and 37,350 head for the same week a year ago.

Sheep and Lambs.—Receipts last week were larger than they have been running, and in the lamb division the market showed strength as the week advanced. Monday, top lambs sold mostly at \$11.00; Tuesday, best landed at \$11.00 and \$11.10; Wednesday's top was \$11.15; Thursday, no choice ones were here and nothing sold above \$10.90, and Friday they reached up to \$11.25. Cull lambs were active, selling from \$10.25 down. Best yearling wethers sold from \$9.75 to \$10.00; top wether sheep are quotable up to \$8.50, and ewes went from \$8.00 down. Receipts last week figured around 20,500 head, as compared with 19,368 head for the previous week and 25,200 head for the corresponding week a year ago.

The World's New Dairy Record.

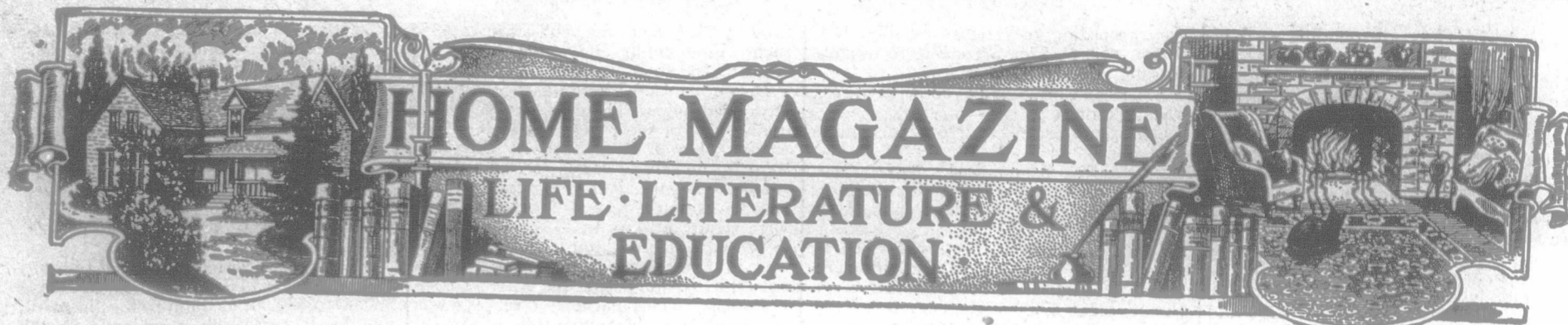
In a 30-day test 3,050 pounds of milk producing 180 pounds of butter, was the record made by Ormsby Jane Segie Aggie, No. 150943; and not only is this the record for the four-year old class, but it surpasses previous records made by all classes and breeds. Consequently this cow holds the world's record in production. She is owned by Oliver Cabana, Jr., proprietor of the Pine Grove Farm at Elma Center, N. Y.

COMING EVENTS.

- Live Stock Association meetings at Toronto, Jan. 31 to Feb. 4.
- Ontario Corn Exhibition, Chatham, Ont., February 1 to 4, 1916.
- Convention of United Farmers of Ontario, St. James Parish Hall, Toronto, February 2 and 3.
- Conference on Road Construction, Parliament Buildings, Toronto, February 8 to 11, 1916.

SALE DATES CLAIMED.

- Feb. 2, 1916.—Canadian Sale of Scotch Shorthorns, Union Stock Yards, Toronto; Robt. Miller, Stouffville, Ont., Manager.
- Feb. 8.—Southern Ontario Consignment Sale Company's Annual Sale of Holsteins at Tillsonburg; R. J. Kelly, Culloden, Ont., Secretary.
- Feb. 10, 1916.—C. E. Trebilcock, London, Ont.; Holsteins.
- Feb. 16, 1916.—Norfolk Holstein Breeders' Sale, at Simcoe; W. A. Mason, Simcoe, Secretary.
- March 1.—Guelph Fat Stock Club sale at Guelph; J. M. Duff, Secretary.
- March 15.—Oxford District Holstein Breeders' Club Consignment Sale, at Woodstock; W. E. Thomson, Woodstock, Secretary.
- March 29.—Western Ontario Consignment sale, London; Harry Smith, Hay, Ont., Manager.
- April 19.—James Benning, Williams-town, Ont.; Ayrshires.



A Consecration.

Not of the princes and prelates with
periwigged charioteers
Riding triumphantly laureled to lap the
fat of the years—
Rather the scorned—the rejected—the men
hemmed in with the spears;

The men of the tattered battaion which
fights till it dies,
Dazed with the dust of battle, the din
and the cries,
The men with the broken heads and the
blood running into their eyes.

Not the benedicted commander, beloved
of the throne,
Riding cock-horse to parade when the
bugles are blown;
But the lads who carried the koppie and
cannot be known.

Not the ruler for me, but the ranker,
the tramp of the road,
The slave with the sack on his shoulders
pricked on with the goad,
The man with too weighty a burden, too
weary a load.

The sailor, the stoker of the steamers,
the man with the clout,
The chautyman bent at the halliards
pulling a tune to the shout,
The drowsy man at the wheel and the
tired look-out.

Others may sing of the wine and the
wealth and the mirth,
The portly presence of potentates goodly
in girth—
Mine be the dirt and the dross, the dust
and scum of the earth!

Theirs be the music, the color, the glory,
the gold;
Mine be a handful of ashes, a mouthful
of mold.

Of the maimed, of the halt and the
blind in the rain and the cold—
Of these shall my song be fashioned, my
tales be told.—Amen.

—By John Masefield, in "Salt Water
Ballads."

Travel Notes.

FROM HELEN'S DIARY.

Geneva, Switzerland, Nov. 12, '15.

"Morgarten!"

That word has been staring me in the
face for two weeks or more—from huge
posters on the bill-boards, from small
posters in the shop windows; from pic-
tures in the art stores, from booths in
the book stores, and from post
cards everywhere; the newspapers have
been full of "Morgarten," the "ora-
teurs" have been orating "Morgarten,"
and the preachers have been preaching
"Morgarten."

Morgarten is in the air, it is every-
where. It arches over Switzerland like
a colossal rainbow.

When I first saw that name posted all
over town I thought it was probably an
"ad." for a new picture show, or a new
cigar, or a new some-thing-or-other.

But it turned out to be a battle, a
very famous battle, too, a battle which
makes every true Swiss swell with pride
and patriotism. The battle of Morgar-
ten was fought six hundred years ago
to-day, and was in reality the martial
baptism of the Swiss Confederation.
That is why Morgarten is so honored
to-day.

Six hundred years ago the Cantons of
Uri, Unterwalden and Schwitz (the can-
ton from which Switzerland takes its
name), banded together to oppose Aus-
trian oppression. This league was the
nucleus of the Swiss Republic. At Mor-
garten they fought the Austrians and
won. From a military point of view,

this battle is considered a remarkable
achievement, because, on that historic
occasion, a small body of peasants on
foot defeated a large army of mounted
warriors.

Since that time, canton after canton
has been added to the original three,
until now they number twenty-two in
all. The canton of Geneva was the last
one to join the Confederation. The
National Monument commemorating the
Union of Geneva with the Swiss Con-
federation in 1814, occupies a prominent
place in the city of Geneva, on the lake
shore, near the Pont du Mont Blanc.

DECEMBER 12TH.

Morgarten was for all Switzerland, but
the 12th of December is for Geneva
alone. It is Geneva's Great Day—the
anniversary of the famous Escalade.
The Escalade occurred in 1602. At that
time Geneva was a free city of France.
On the night of the 12th December,
1602, the city was wakened out of a
sound sleep by a treacherous attack on
its walls by the soldiers of the Duke of
Savoy.

The history of the Escalade is very in-
teresting reading, especially when one is
on the spot, and can look at the very

them his benediction as they climbed,
and handed to every man an amulet
which purported to guarantee him in the
first instance against being killed, and
in the second instance against being
damned eternally if he were killed!

The first guarantee didn't work. Most
of the attacking party were killed, and
the next day their heads were collected
and spiked, and stuck up on the ram-
parts as a warning.

I don't know about the second guaran-
tee. Perhaps it worked, and perhaps it
didn't.

Mixed in with the tragic incidents con-
nected with the Escalade are some very
amusing stories. One in particular—the
one about the woman and the soup-pot—
attained such popularity that the soup-
pot is the recognized symbol of the
Escalade. This woman lived in a house
on the city wall. She must have been
a female Samson if what they say is
true, for when she heard the alarm, she,
by her own unaided efforts, barricaded
her door with furniture of such prodig-
ious size and weight that it took the
combined efforts of several men to re-
move it the next day. After perform-
ing this herculean task, she grabbed her

now without a soup-pot ("la marmite,"
they call it in French). During the
Escalade season soup-pots are as plenti-
ful in the shop windows of Geneva as
Santa Clauses at Christmas time, and
enraptured children may be seen with
their noses flattened against the con-
fectioners' windows, gazing with longing
eyes and watering mouths at the allur-
ing rows of big and little soup-pots on
the other side of the glass, each soup-
pot, no matter how diminutive, filled to
the brim with delicious candy-vegetables,
and beaming upon its much decorated
exterior the never-to-be-forgotten
date of the Escalade—1602.

There are all kinds of soup-pots in all
kinds of windows, but the ones in the
confectioners' always attract the chil-
dren; they have for them a dual charm,
because, after they have eaten the con-
tents of the pot, then they can eat the
pot, too. This seems to them a great
advantage.

Geneva celebrates the Escalade in the
carnival spirit, with pageantry and
masquerading, with banquets and balls,
and merry-making generally. That is, it
does in ordinary years, but not this
year. Usually there is a grand histor-
ical pageant, treasured historical
relics being loaned from the Museum for
the occasion. The real ladders are dis-
played with which the attacking soldiers
scaled the city walls. These ladders, by
the way, were a bit too short, and
caused a hitch in the plan of operations.
The soldiers couldn't get over the wall
fast enough to make a success of the
job. Some say this is the reason they
were defeated; some say it was the boil-
ing soup that won the victory.

This year the Swiss Government has
become a little more lenient as regards
gaiety. Last year public dances were
not allowed, but now the rules are re-
laxed a bit. Perhaps the ruling powers
reasoned that the end of the war was
yet afar off, and normal life might as
well be resumed. Anyway, the ban has
been lifted from terpsichorean amuse-
ments to a limited extent. In Geneva
Escalade celebrations such as public balls
and masquerades were prohibited, but
semi-private festivities, such as dances
at hotels or clubs, were allowed.

And that is how we came to be at an
Escalade banquet and ball.

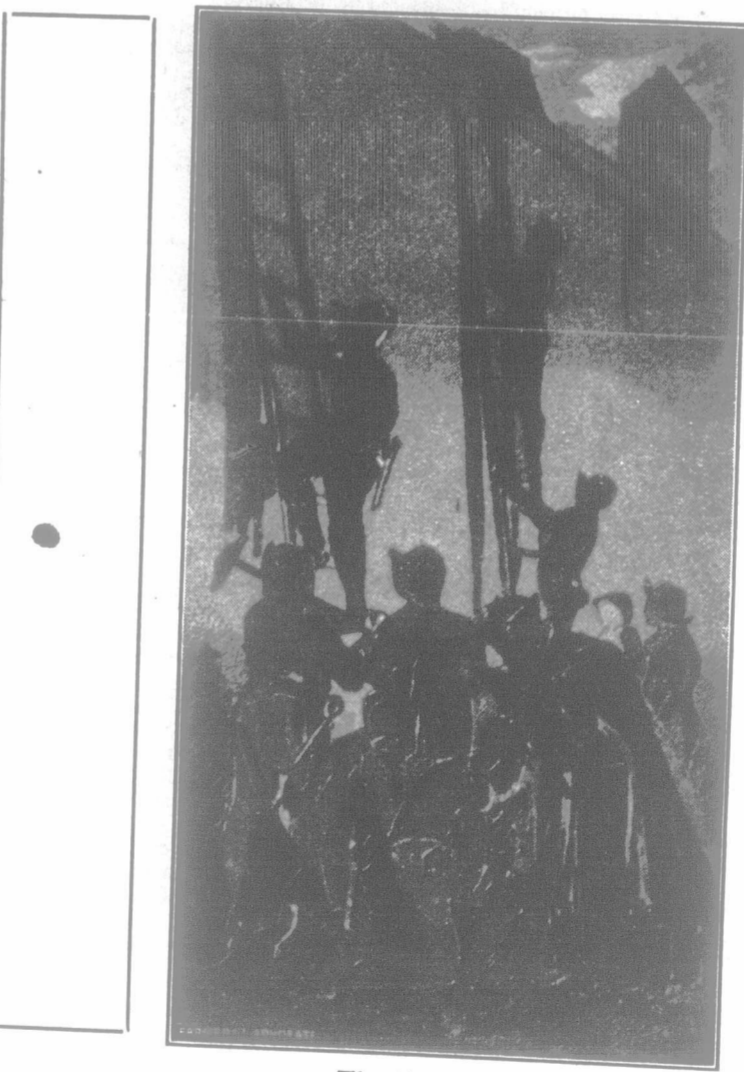
It is the first bit of real gaiety I have
seen since this awful war began, and it
seemed like a bright spot in a vast,
gray world of suffering and misery.

To begin with there was the banquet,
a regular bang-up affair, with banners
and flags and magnificent floral decora-
tions, and a menu almost too good to
be true. And champagne—free of
charge. Our hotel manager was cer-
tainly a popular man that night.

Many of the guests came in fancy cos-
tume, and that added to the general
brilliance and hilarity of the scene.

The banquet wound up with a speech
from the throne—the manager's table, a
special orator having been engaged for
the occasion, and then came the great
event of the evening, the arrival of La
Marmite (the soup-pot), borne on a huge
platter by two preternaturally solemn
Swiss waiters. They made the circuit
of the room with their precious burden,
so that all might gaze upon its sugary
charms, the orchestra meanwhile playing
appropriate national music. The Marmite
was finally deposited on the table before
the speaker. The music stopped. The
speaker raised his right hand, in which
was a small stick, and, with a final
flight of oratory, brought down his hand
and staved in the cover of the soup-pot,
which, I suppose, was symbolism for
pouring boiling soup on the heads of the
enemy.

The contents of the soup-pot, consist-
ing of diminutive candy-vegetables, were



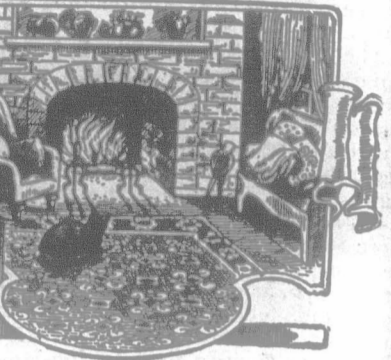
The "Escalade."

The night attack on the city of Geneva on the 12th December, 1602. The Jesuit
priest giving the soldiers his benediction as they climbed the wall.

places where the thrilling events took
place. According to the history, the
storming party of the besieging army
"struck the Corratierie" (the Corratierie
is one of the main streets here) rampart
at a point where there was no sentinel
on the lookout. They carried with
them faggots and bundles to help them
over the moat, ladders that could be
dove-tailed together to scale the ram-
parts with, and axes and crowbars for
breaking down or forcing the gates.
(Authentic specimens of all these things
may be seen in the museum here.) A
Scottish Jesuit named Alexander gave

soup-pot (she was making soup for early
breakfast), rushed to a window over-
looking the wall, and flung the boiling
soup, pot and all, down on the heads of
the soldiers who were climbing up the
wall. Some say this was the turning
point of the battle. Anyway, it re-
sulted in fame for the woman and glory
for the soup-pot. The name of this
courageous dame was Madame Royaume,
but she is always referred to as La Mere
Royaume. Some of her personal belong-
ings may be seen in the University
Museum.

There is never an Escalade anniversary



about a soup-pot ("la marmite," call it in French). During the season soup-pots are as plentiful as the shop windows of Geneva as they are at Christmas time, and children may be seen with noses flattened against the conservatory windows, gazing with longing at the watering mouths at the allures of big and little soup-pots on either side of the glass, each soup-pot matter how diminutive, filled with delicious candy-vegetables, leaning upon its much decorated exterior the never-to-be-forgotten Escalade—1602.

There are all kinds of soup-pots in all the windows, but the ones in the conservatory always attract the children. They have for them a dual charm, after they have eaten the contents of the pot, then they can eat the pot. This seems to them a great deal.

The Swiss Government celebrates the Escalade in the spirit, with pageantry and dancing, with banquets and balls, and gymnastics generally. That is, in ordinary years, but not this usually there is a grand historical pageant, treasured historical pageant loaned from the Museum for the occasion. The real ladders are distributed which the attacking soldiers climb to the city walls. These ladders, by the way, were a bit too short, and the Swiss couldn't get over the wall to make a success of the day. It is the reason they were defeated; some say it was the boiling of the water.

For the Swiss Government has been a little more lenient as regards the last year public dances were held, but now the rules are re-strictive. Perhaps the ruling powers at the end of the war was a bit off, and normal life might be assumed. Anyway, the ban has been lifted from terpsichorean amusements to a limited extent. In Geneva the celebrations such as public balls and serenades were prohibited, but the festive dances, such as dances at clubs, were allowed.

It is how we came to be at an banquet and ball. The first bit of real gaiety I have had since this awful war began, and it was a bright spot in a vast sea of suffering and misery. At the banquet, with banners and magnificent floral decorations, a menu almost too good to eat. And champagne-free of charge. Our hotel manager was a very cheerful man that night. The guests came in fancy costumes that added to the general merriment and hilarity of the scene. The manager wound up with a speech before the manager's table, a man having been engaged for the evening, and then came the great event, the arrival of La Marmite (the soup-pot), borne on a huge cart, two preternaturally solemn men. They made the circuit of the table with their precious burden, and might gaze upon its sugary contents, a meanwhile playing national music. The Marmite was deposited on the table before the music stopped. The manager took his right hand, in which he held a stick, and, with a final flourish, brought down his hand on the cover of the soup-pot. The soup-pot, as a symbol of the soup on the heads of the

of the soup-pot, consisting of candy-vegetables, were

then fished out by the aforesaid solemn waiters and passed around to the guests. And so ended the banquet.

An hour later the dance began. It was quite a brilliant affair, and cosmopolitan to a marked degree. Almost every nationality in Europe was represented, except Germans, Austrians, and Turks. Many of the guests were in fancy costume, quite a number wearing the national costume of their native land. Among the masqueraders were two prim, white-haired Calvinists, in the garb of 1602. But they looked very much out of place in a ball-room.

The popular dance of the evening was the Tango. I thought the war had killed it, but it seemed to be still alive, and just as contortionistic as ever, if not more so. The best dancer on the floor was a Japanese, and his favorite partner was a young Russian girl in native costume.

I wonder how long it will be before the English and Germans will be dancing together again?

I have been on a watch hunt.

This part of Switzerland is the center of the watchmaking industry, but the war has played havoc with the watch business. Many of the factories have had to close, and some of them have taken to making munitions. This is supposed to be the reason for the dropping of bombs on Chaux-de-Fonds, a little Swiss town near the French frontier, a few weeks ago. They were dropped accidentally (?) by a German aeronaut, and did considerable damage to property, and also injured some people.

I thought it was about time to start for America when bombs began to fall on this Isle of Safety. But the scare died out, and we are pursuing the even tenor of our way just as before.

So I thought I would treat myself to a souvenir of my war-time residence in Switzerland, and decided upon a watch. But it's one thing to decide and another to buy. The trouble is there is such an infinity to choose from. The variety is endless, and the scale of prices goes from almost nothing to almost anything. Just as soon as you have decided on one watch, you see another one you like better, and when you have definitely made up your mind about number two, up pops a number three still more fascinating. The other day I counted about fifty different styles of watches in one window. There were tiny little watches in finger-rings, so small that one would almost need a microscope to see the time; there were watches about the size of a five-cent piece, which were made to wear in button-holes; there were watch-pendants, some of them so elaborate in design and ornamentation that the prices soared to the stars; there were wrist-watches of every conceivable shape and size and price, for men, women and children; there were pocket watches, some so thin they wouldn't cast a shadow edgewise; and there were watches so big that they were really small clocks.

I glimpsed a perfect beauty in a window we were passing, a watch that suited me to a dot, size, shape, and everything. It looked just about my price, too—probably fifteen dollars or so, which was as high as I wanted to go these war times. It is amazing what extremely pretty, artistic and serviceable watches one can buy in Switzerland for that price. This watch was one that could be worn any place any time—simple in design, yet of an aristocratic air most satisfying.

"That's the very watch I want," I said to Uncle Ned, "and I'm going right straight in to get it before I change my mind again."

"Go in and have a look at it anyway," he said. "Perhaps you won't want it when you see it at close range."

So in I went.

The polite clerk brought it from the window in its lovely blue-velvet case, and laid it down before me.

It was just exactly what I wanted. I was simply delighted to have found my ideal at last. I tried it on my arm. Simply perfect! I knew just about how

much it would be, because I had priced other watches somewhat similar, but none I liked as well. I dallied with it for a few minutes, admiring it from every point of view, and then said to the clerk in an off-hand way:

"And what is the price?"

"Nine hundred francs" (one hundred and eighty dollars), was his answer.

I nearly fell dead on the spot.

"Nine hun—," I gasped. "Not really!"

"Yes," said he, stiffly, and then added in an explanatory tone, "It is platinum."

"Why, I thought it was silver," I blurted out.



Swiss Sentinels in the High Alps.

A wave of pity and disgust swept over his face. He looked as if it pained him beyond words to encounter anyone so colossal as to mistake platinum, the most precious of metals, for common, plebeian silver. But he pulled himself together sufficiently to remark that he would be pleased to show me some inexpensive watches if I so desired. But I didn't desire. The only desire I had was to become invisible, and as I could not accomplish that I did the next best thing—got out of the shop.

Uncle Ned was still window-gazing.

"Get it?" he enquired. "Didn't take you long!"



Morgarten.—At the battle of Morgarten, in 1315, the Austrians were decoyed into a narrow pass between towering precipices and the lake. The peasants on the heights rolled huge rocks down on them. In order to avoid the rocks, they had either to go into the lake or retreat. Many went into the lake, and the rest were killed.

"Get it!" I snapped in my snappiest manner. "It was platinum."

"Oh, was it?" he said, trying vainly to suppress a grin.

"Yes, it was. And you knew it all the time, too. Don't tell me you didn't, because I know better."

He just kept on grinning. I never knew anybody who had such an aggravating grin.

I wish he would get fooled on some of those crazy antiques he is forever buying. Then I'd have a chance to laugh at him.

I haven't looked for a watch since.

Hope's Quiet Hour.

The Divine - Human Comrade.

I have called you friends. . . . I have chosen you.—St. John xv: 15, 16.

The following lines were found on the body of a dead soldier who fell at the Dardanelles. The writer expressed, in reckless soldier fashion, his longing for the perfect sympathy of the Divine—Human Comrade. He did not long for

Would I could win and keep and feel
That heart of love, that spirit of steel;
I would not to Thy bosom fly
To shirk off till the storms go by;
If you are like the man you were,
You'd turn in scorn from such a prayer;
Unless from some poor workhouse crone
Too toll-worn to do aught but moan.
Flog me and spur me, set me straight
At some vile job I fear and hate;
Some sickening round of long endeavor,
No light, no rest, no outlet ever;
All at a pace that must not slack,
Tho' heart would burst and sinews crack;
Fog in one's eyes, the brain swim,
A weight like lead in every limb,
And a raw pit that hurts like hell,
Where the light breath once rose and fell;
Do you but keep me, hope or none,
Cheery and staunch till all is done,
And at the last gasp quick to lend
One effort more to serve a friend.
And when, for so I sometimes dream,
I've swum the dark—the silent stream
So cold it takes the breath away—
That parts the dead world from the day,
And see upon the further strand
The lazy, listless angels stand;
And, with their frank and fearless eyes,
The comrades whom I most did prize;
Then clear, unburdened, careless, cool,
I'll saunter down from the grim pool
And join my friends. Then you'll come by
The Captain of our company,
Call me out, look me up and down,
And pass me thro' without a frown,
With half a smile, but never a word,
And so—I shall have met my Lord.

How many brave young souls have met their Lord during the last year, and have found the "Captain of our Company" their all-satisfying Comrade. Bishop Ingram says that one veteran soldier, whose two gallant sons went into the Great Hereafter on the same day, said bravely: "As Christ died for the freedom of the world, and my sons also died for the freedom of the world, may I not hope that He will receive them as comrades in arms?"

Comrades "in arms!" The Australian soldier-poet seems to think that after death his only business will be to saunter, in careless freedom, with his old comrades. But I am sure he was too full of the joy of achievement to really desire to "do nothing for ever and ever." If he keeps close beside the Divine Comrade he will not be satisfied to turn his back on the struggling, distressed comrades who are "doing their bit" in pain and discouragement on the earth he has left behind. Sympathy means "feeling with," and our Lord is the Perfect Comrade, not only because He has suffered to the uttermost, not only because He still remembers how hard pain and sorrow are to endure, but because He still "feels with" each heart that is suffering now. We hear often repeated that cold saying: "Nature is careless of the individual and careful of the type," and we are apt to feel as if God pressed trouble upon us, thinking so much about our spiritual growth as to be unconcerned about our present pain. Do you remember that Christ wept beside the tomb of Lazarus? That shortest text in the Bible—"JESUS wept"—gives us confidence that He cares. He feels our grief as His own, even when He knows—as He knew at Bethany—that the sorrow will very soon be turned into joy.

Yesterday I was talking to a sad mother, whose son has lately been called to meet his Lord. She feels as if his young life, so full of promise and eager desire to help the world, had been cut short. She knows he would rather endure hardships beside his comrades than "clear, unburdened, careless, cool, saunter down from the grim pool." Well, Christ knows that, too. He is still the Captain of young men, and most certainly will not disappoint their noblest aspirations. They are not worn out and weary, seeking only for rest; but are eager for service. It is life, "more life and fuller, that they want."

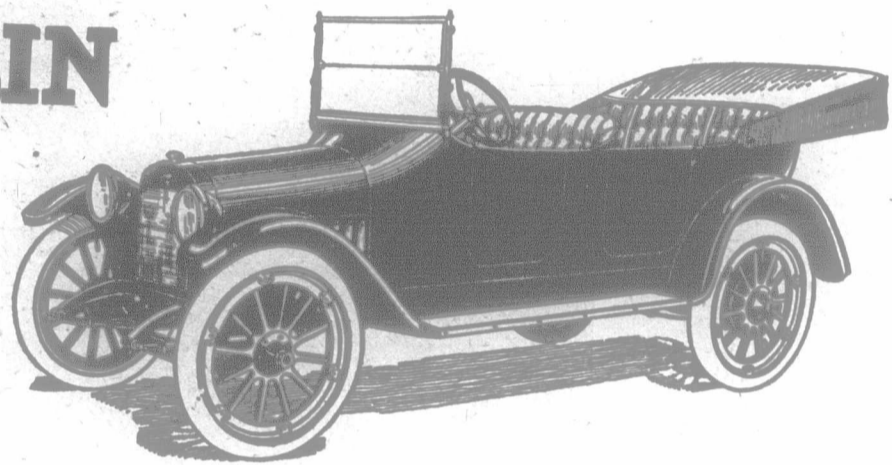
If you are troubled about those young men, who have been called away from their interesting work here to an existence which seems to you too easy to be interesting, read Paterson-Smyth's "Gospel of the Hereafter." Here is one quotation from that encouraging book: "You think of your boy as serving at one side of the veil, and you at the other; each in the presence of Christ. You think how he is being lovingly

comfort and safety, hardship and danger were unconcernedly accepted as a matter of course, but he did desire to clasp hands with the Great Captain Who inspired him to suffer cheerily and die gallantly. He seemed to despise the angels—by this time he must have repented his foolish and hasty judgment of those who daily minister to men who accept their kindness with never a thought of gratitude. The lines were published in the "Australasian Inter-collegian," and were sent to me by a friend in England.

Jesus, Whose lot with us was cast,
Who saw it out from first to last;

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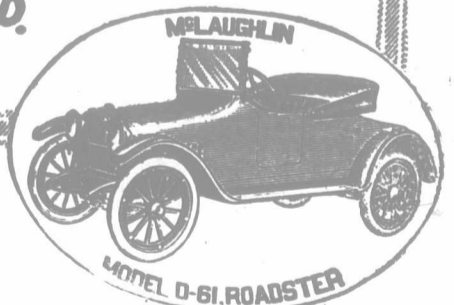
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GIANTS OF POWER

trained and disciplined. How all his abilities are being used in self-sacrificing deeds for others. Not in a glorified selfishness in thanking God that he is safe, though his brethren be lost. Ah, no! but in perfect self-sacrifice, even as his Lord. You think of him as learning to fight for righteousness—to help the weak, aye, mayhap, to go out—God's brave young knight—out into the darkness after someone who has missed of Christ on earth. . . . When your death comes, he will be waiting for you. He has been praying and watching over you. He will tell you of all that has been happening. And together in Christ's loving presence, side by side, you will

work and wait, and help your brethren; and look forward to the glory."
We know very little about the work put into the hands of those who have been promoted from the battalions of the Church militant on earth. We do know that the Great Captain's loyal soldiers shall serve Him in His own company, that they shall see His face and wear His badge.—Rev. xxii: 3, 4. His presence will inspire them to grander service.

"Surely He, the mighty Worker, He Who slumbers not, nor sleeps, Leaveth not in useless silence Those He keeps.

"They who bravely toiled amongst us We believe are working still, Where no disappointment hinders, No self-will.

"Lo! from earth's imperfect labor He hath called them to His feet, There to work where, free from failure, Work is sweet."

We all need the Perfect Comrade. We all are heart-hungry for comprehension and sympathy—for a Friend who knows us through and through, and Whose loyalty cannot be shaken. A Christian soldier in camp knelt down to say his prayers and then got into bed. There

was dead silence at first. Then a lad beside him lay down in his cot, looked across, and remarked: "Now, I'll say my prayers, too." He put his hands together and said, "Good night, Lord Jesus." It was a short prayer, certainly, but it was repeated every night, and must have roused in many another soldier's heart the desire to clasp hands with the Divine Comrade Who had chosen and wanted to claim him as a friend.

We all need Christ, and many are seeking Him almost despairingly. "If we could only be sure!" they say. If you are not sure, try the plan of giving Him your confidence. Tell Him your troubles, instead of talking about them to

others, or locking them to fester in your own heart. Reading about Him is good, but speaking directly to Him is better. No one else can really teach you to know Him. Christianity is an intensely personal matter—though it can never end with your personal relations with God.

If you really know the Heart of the Divine Comrade, if His mighty Love is pouring through the door you have opened into your heart, you cannot enjoy His friendship in selfish, spiritual isolation. The quickening warmth of His hand-clasp will constrain you to reach out your hand to draw others into His Presence.

"The new passion for brotherhood is the child of Christianity."

DORA FARNCOMB.

The Ingle Nook.

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

To-Morrow.

To-morrow, when the war shall be over! . . . The world will not be quite the same. It will be a saddened world. Even the growing boys and girls of today will feel that the awful thing has been, for they will carry the burden of a debt which they did not incur, but which must be paid, yet all will not be gloom. There will be re-action, too, for it is characteristic of the human race that it never looks long down. It still hopes. It dares to think that there is always something better ahead.—And often there is, even though the way thereto be hard.

It's a good thing to plan fine things for to-morrow. Perhaps there is nothing in this world that did not first exist as a thought. And so, what would you that we shall see here, in our own Canada, after the war? Think it all out; write down your thought; consider what you can do towards giving it a body, to some degree at least, in your own little sphere,—that will be a fine entertainment for one of these winter days, and, perhaps, a profitable one.

Don't you think that, for one thing, one might like to see a more definite system of education established,—in the homes most of all, for, although the schools teach "Reading, Writing and Arithmetic," the homes teach character, and that is the most important. This is not an impossible suggestion. There is no reason to depreciate what definite teaching and suggestion in regard to anything at all may do. Germany has shown all the world what persistent inculcation of militarism could accomplish; it is not, then, a hopeless thing to look forward to a time when "character," taught with the same persistence, may attain a place "over all." It is important that the children be taught the Square Deal, always to be square to the Other Fellow, and willing to listen to his point of view—there may be something in it. And it is important that they be taught to be kind and sympathetic, towards animals and humans, since it is from hardness and cruelty that most of the woes of the world arise. And it is important that they be taught to see the wonderfulness of things everywhere; that money is all right in its way, and a certain amount of it necessary for independence, but also that the trees, and flowers, and ice, and snow, and clouds, and people, are all wonderful; that music is good, and high pictures and books; that kindly manners are worth while, and great cleanliness. When we realize that the most wonderful thing that can be is just that we are here in existence at all, we are willing to believe great things of God, and great things for all future time; we are willing to believe that there are eons of wonderful adventures ahead of us.

Since everything that suggests, then, is of tremendous importance, can we not wish for more beautiful school-houses, where form, and color, and growing plants will exercise their subtle influence

over the minds of the children? And shall we not pray for school boards "big" enough to be willing to pay more than a mere scraping-along wage to hold a teacher who is really interested in the children as future men and women? No educationist who wants to buy books, and to make little trips for further information, and to lay up enough to keep him or her out of the poor-house in old age, is willing to jog along forever on a mere scraping-along wage. A crying need in our country is teachers of just this calibre.

For to-morrow, too, shall we not hope for preachers "big" enough and unafraid enough, to preach what they really believe?—For thought and view-point have changed mightily during this Twentieth Century. And shall we not hope for a people "big" enough to listen, a people too progressive to be intolerant and hide-bound? It is a condemnation of a locality when a preacher says "I do not dare to preach what I think; the people would not stand for it." It is a narrow people, indeed, that will not listen to anything—no matter how strange—that means high ideals. One need not accept everything, but one can at least hear with open mind. Often what one rejects at first, one comes to grasp afterwards. The main thing is to keep moving onward—ever onward towards ideals that will make for higher living.

Shall we not hope, also, for a broader understanding of Government on the part of all the people?—an independence of thinking that scorns to be Conservative or Liberal because one's father was, that is not afraid to take "two papers," balancing the editorials of the one against those of the other, with a fine poising. And must there not come to be a probing on the part of all the people that will head off any attempt, from interested quarters, "to put things over" them? It is a burning shame that in seats of Government there have sometimes been men whose private interests stood first, and who were not ashamed to exploit the people for the sake of those interests—provided only that the whole dirty business could be kept hidden and dust thrown into the eyes of the public. The ballot has the power to correct all this, but not until the people read on every side, think unbiasedly, and see with clear eyes. There are big and good men in every community, men too big to be bought, or to buy filthily. Why not exalt them to the seats of the Mighty?

For to-morrow, again, we should like to see a propaganda for making our Canada more beautiful, its best natural scenery preserved, its deficiencies corrected. Why should there not be trees along all roads, groves planted in waste-places, homes taught to make the best of themselves, cities, towns and villages transformed into spots of beauty rather than unrelated jumbles of wood and stone? The nucleus for such a movement exists. Mr. Thomas Adams, of the Commission of Conservation, at Ottawa, has a well-laid plan for Canada's improvement. He is willing to take trips to available centers, give lectures, and show pictures that tell a story. He is an enthusiast. No doubt our own Agricultural College, at Guelph, Ont., is prepared to do something along the same line.—To-morrow, with the help of these, shall we not have a fairer Canada? This is a thing not to be sniffed at. There is no beauty, of nature or of thought, that has not some influence over the daily life of the people.

And this brings us to the hope, dear to the hearts of all true patriots, that University advantages may soon be SENT OUT to everybody, to the shops and the farms. The thing has been done in Wisconsin; why not in every Province in Canada? From the University of Wisconsin lecturers are sent to all localities that ask for them; so are educational "movies," musicians, etc. And regular courses of study have been established everywhere, with examinations and diplomas. One branch of the great University deals only with this work.

We can have all this, but we must demand it, and encourage every effort towards it. As Miss Watson told you in this paper about Christmas time, one beginning—in domestic science—has been made, in connection with the Macdonald Institute at Guelph. You can have this,

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The Evidence on the Case, by James M. Beck, late Assistant Attorney-General of the United States. While this book is by one of the ablest jurists of the United States, it is written in an intensely interesting style. It reviews the evidence presented in the official papers, British, German, Russian and Belgian, in regard to the causation of the war. The conclusions presented by Mr. Beck have been accepted by leaders of thought as constituting a most notable contribution to the literature of the war. The work will be accepted as belonging to lasting history. It should be in every home library in Canada.

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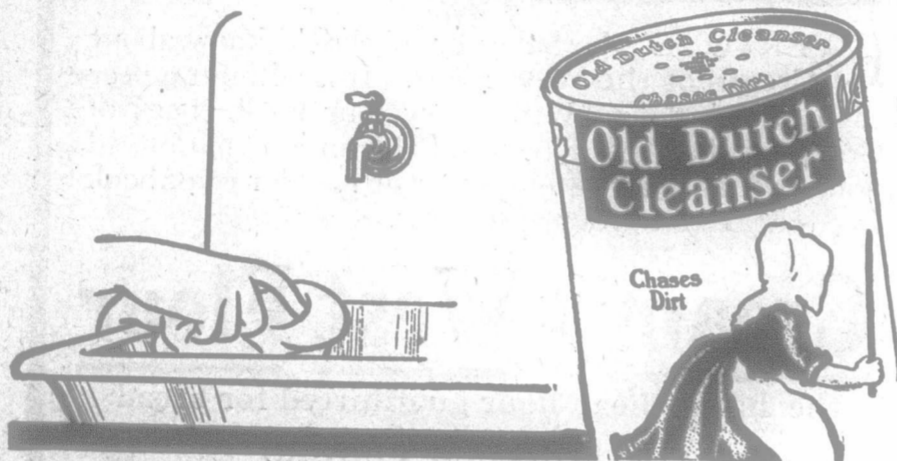
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Speaking of music, I read recently of a library somewhere in the United States, where victrola records are given out as well as books. That seems a good idea. Unless people have real talent for music, and can get the necessary training, they may do well to own a victrola. "Canned music" these days is by no means to be despised. But the instrument must be a good one, and the records the work of real artists in music; otherwise music is murdered. It would be better to have one good victrola in a neighborhood and rent it around, than to have a number of poor ones,—and the library idea would help out in extending the repertoire. To-morrow?—What will you have?
JUNIA.

"DUMB" ALPHABET.

"Dumb" asks us to print directions for the one-hand alphabet. We regret that we have nothing on the subject on hand, but would advise him to write to the Institute for the Deaf and Dumb, Belleville, Ont., in regard to the matter.

HERALDRY.

Dear Junia,—Will you kindly tell us how the collection of fierce and ravenous creatures ever attained their position as national emblems? Our own beaver is the only suitable animal in the whole menagerie. Isn't it time to superannuate most of these emblems and replace them with others possessing qualities more worthy to represent great nations?
Yours truly,
RUE.

Welland Co., Ont.

In all ages, and in every part of the world, nations, tribes and families have adopted distinguishing symbols—developing into armorial bearings—as their emblem or tribe-sign. Since many of these date to early times, the prevalence of "savage" creatures may be accounted for. In the middle ages, for example, the lion was considered an embodiment of noble qualities, hence the lion of Great Britain, Belgium, Norway, Sweden, Italy, and Persia. As the lion among beasts, so the eagle among birds, has been favored for armorial devices, its great strength and power to rise evidently recommending it, and so it has obtained place among the emblems of Germany, Russia, the United States, Colombia, and Austro-Hungary. South America has somewhat broken away from the "fierce," rising even to the very peaceful "design of stars" of Brazil. In Europe, the arms of Greece bring to the fore the cultural tendency of that country, while the arms of Switzerland show a white cross on a red shield.

A friend suggests that she thinks the "collection of fierce and ravenous" very appropriate to the present time, and that it might be advisable even to think up a few extra monsters for armorial bearings during the next few months.

THE BEST THING IN LIFE.

This subject seems to have taken hold upon the popular mind; although asked for the Christmas Number, essays upon it are arriving even yet. "A. M. M.", Simcoe County, writes very thoughtfully as follows:

Dear Junia,—This is my first appearance in your Ingle Nook. I have enjoyed reading "The Advocate" for a number of years, and would now miss its weekly visit very much.

In my opinion, the best thing in life is "Love." True, pure love, the beautiful top-stone on the house of God.

Fragments of this heavenly thing survive the fall, and flourish in our nature. It is beautiful even in ruins. It seems the one feature left of man's first likeness to his Maker. "God is Love," and His example is its rule. "Love ye one another as I have loved you." Love does not begin and end within the lover; it is the nature of love to come out. Its essence is an outgoing; it will not, cannot, let the world alone; all the neighbors know it, feel it.

Love helps and sustains more than anything else in the world. Love teaches the ignorant, clothes the naked, feeds the hungry, rears the child, cares for the aged and feeble. Love reproves sin, withdraws temptation, leads back the wanderer to the path of righteousness. Love binds families and homes together, restores the prodigal again to his father's arms. Love nurses the sick, forgives enemies, "suffereth long, and is kind."

In many, many instances, during this time of a war-seized world, is love showing itself to be the greatest and best thing in life, for shining out amidst the heavy, dark clouds, we see its rays radiating the souls of men and women, who, in their brave and unselfish acts of mercy are pouring out their love, through the Red Cross and many other patriotic channels, for the brave soldiers who, likewise, through love for their country and fellow-beings, are unselfishly and bravely, risking and laying down their lives. Surely when love stimulates men and women to such acts as these it is the greatest thing in life, and if the soul of every man and woman was filled with love in its true sense—the sense in which our Master meant when He said: "Love ye one another as I have loved you," all cruel, wicked wars would cease, and we would all be subjects of the one Ruler Who rules supreme.

True, a good home and a baby are among the very best things in life, but to my mind, these, like many other good things, would be very immaterial without the one essential, "love." True, pure, confiding love, which "never faileth."

A VERY LONELY WOMAN.

A very lonely woman in Northern Ontario, who has ten children, but little means and no outside company, would like letters from Ingle Nook readers. "Cannot something be done in this great world," she says, "to brighten the life of one unhappy woman?" I have kept this woman's address, and will be pleased to forward all letters or papers sent to her address, "Mrs. H.," in care of me. Her letter is very pathetic, but for many reasons I have thought it better not to publish it. Her idea of "The best thing in life," is a happy home. Here is a chance for Ingle Nook readers to do some real good in our own country. "Mrs. H." would appreciate, I imagine, bright magazines and scrap-books, both for herself and her children. She asks especially for letters.

CHOCOLATE CAKE AND CANDY.

Dear Junia and Ingle Nook,—As I have been a constant reader of "The Farmer's Advocate" for a number of years, and always enjoy the useful hints and letters of the Ingle Nook, I am now writing to ask if anyone can give a recipe for chocolate candies? Hoping to see an answer soon, I will send a good recipe.

Marble Chocolate Cake.—One-half cup of butter, one cup sugar beaten to a cream, one-half cup sweet milk, one and one-half cups of flour, one teaspoonful baking powder, whites of four eggs added last, one teaspoon vanilla. Take four tablespoons of grated chocolate and mix one cupful of this mixture with it. This is an excellent cake.

Wishing all readers a prosperous New Year.
PATIENCE.

Elgin Co., Ont.

Chocolate Caramels.—Stir together in a saucepan 4 cups granulated sugar, 3 tablespoons glucose, and 1 cup boiling water, and boil until a little of it will snap in cold water. Then add 1 cup cream, butter size of an egg, and ¼ cake chocolate, grated fine. Let boil, but not too rapidly, stirring all the time, until it will snap in cold water. Remove from the fire, flavor with vanilla and pour into a pan to cool.

Things To Eat.

Round Steak with Vegetables.—Cut round steak in pieces about 2 inches square, and brown in pork fat or dripping. Remove to an earthen dish, and add stock or gravy to cover. Add more fat to the pan and in it brown a few onions. Add these to the meat, also some strips of carrot and some cubes of potato, parboiled and browned in the

helps and sustains more than any- else in the world. Love teaches orant, clothes the naked, feeds the rears the child, cares for the and feeble. Love reproves sin, sows temptation, leads back the er to the path of righteousness. inds families and homes together, the prodigal again to his father's Love nurses the sick, forgives "suffereth long, and is kind." any, many instances, during this a war-said world, is love show- self to be the greatest and best a life, for shining out amidst the dark clouds, we see its rays g the souls of men and women, their brave and unselfish acts of are pouring out their love, the Red Cross and many other e channels, for the brave soldiers kewise, through love for their and fellow-beings, are unselfishly vely, risking and laying down ves. Surely when love stimu- and women to such acts as is the greatest thing in life, he soul of every man and woman ed with love in its true sense- e in which our Master meant e said: "Love ye one another ve loved you," all cruel, wicked uld cease, and we would all be of the one Ruler Who rules

a good home and a baby are he very best things in life, but ind, these, like many other good would be very immaterial with- one essential, "love." True, onding love, which "never

VERY LONELY WOMAN.

lonely woman in Northern On- no has ten children, but little d no outside company, would rs from Ingle Nook readers. something be done in this great he says, "to brighten the life happy woman?" I have kept n's address, and will be pleased d all letters or papers sent to es, "Mrs. H.," in care of me. is very pathetic, but for many have thought it better not to Her idea of "The best thing is a happy home. Here is a or Ingle Nook readers to do good in our own country. ' would appreciate, I imagine, gazettes and scrap-books, both and her children. She asks for letters.

LATE CAKE AND CANDY.

nia and Ingle Nook.—As I have stant reader of "The Farmer's for a number of years, and oy the useful hints and letters le Nook, I am now writing to anyone can give a recipe for candies? Hoping to see an n, I will send a good recipe. hocolate Cake.—One-half cup one cup sugar beaten to a -half cup sweet milk, one and ps of flour, one teaspoonful der, whites of four eggs added easpoon vanilla. Take four of grated chocolate and mix of this mixture with it. This ent cake. ll readers a prosperous New PATIENCE.

Ont.

Caramels.—Stir together in 4 cups granulated sugar, 8 glucose, and 1 cup boiling boil until a little of it will ld water. Then add 1 cup r size of an egg, and ¼ cake rated fine. Let boil, but not stirring all the time, until p in cold water. Remove ire, flavor with vanilla and pan to cool.

ings To Eat.

reak with Vegetables.—Cut in pieces about 2 inches brown in pork fat or drip- ove to an earthen dish, and gravy to cover. Add more pan and in it brown a few d these to the meat, also of carrot and some cubes of oiled and browned in the

frying-pan. Season with salt and pep- per, and cook, covered closely, until the vegetables are tender.

Honey Syrup (Nice with pancakes, Johnny cake, or biscuits).—Boil 2 cups granulated sugar and 1 cup boiling water about 6 minutes. Add 4 table- spoons strained honey.

Egg Tarts.—Make tart-shells of good pastry. Fill them with the following mixture, and bake: Beat together 1 cup yellow sugar, 1 egg, and 1 table- spoon vinegar. This amount will fill a dozen small tarts.

Sour-milk Griddle Cakes.—Take 1½ cups flour, ½ teaspoon salt, 2 teaspoons bak- ing powder, 1 cup thick, sour milk or buttermilk, ½ teaspoon soda, 1 egg, 2 tablespoons melted butter. Sift together the flour, salt and baking powder; stir the soda into the milk and add the egg, beaten very light, and the melted butter. Stir into the dry ingredients. If the sour milk be rich and creamy the butter may be omitted. Cook by spoonfuls on a hot, well-greased griddle. The cakes should be turned only once and should be let brown well on the under side be- fore turning.

Sponge Cake.—Three eggs, 1½ cups sugar, grated rind and juice of half a lemon, ½ cup co'd water, 1½ cups flour, ½ teaspoon soda, 1 teaspoon cream of tartar, slightly rounding. Beat the eggs; gradually beat in the sugar, water, and lemon, and last of all the flour, with which the soda and cream of tar- tar have been sifted.

English Cream (Nice to use as a filling for split sponge or other cake).—Half pint hot milk, ½ cup flour, ½ cup sugar, 2 eggs. ½ teaspoon salt, ½ teaspoon vanilla. Mix sugar and flour well to- gether before adding to other mixture.

Stewed Prunes with Nuts.—Wash large prunes, then put into clear water and let stand over night. In the morning, simmer in the same water until tender. Remove the prunes, take out the stones, and fill with sliced nuts. Add a little sugar to the juice, put the prunes back again and let simmer a few minutes longer. Serve with whipped cream.

Boiled Sausage.—Roll pork-sausage meat into flat cakes ½ inch thick. Dip these in melted bacon fat, then roll in soft bread crumbs and broil over a slow fire. This may be done with a double wire toaster if you have not a broiler. Put on a hot dish and serve with tomato sauce around.

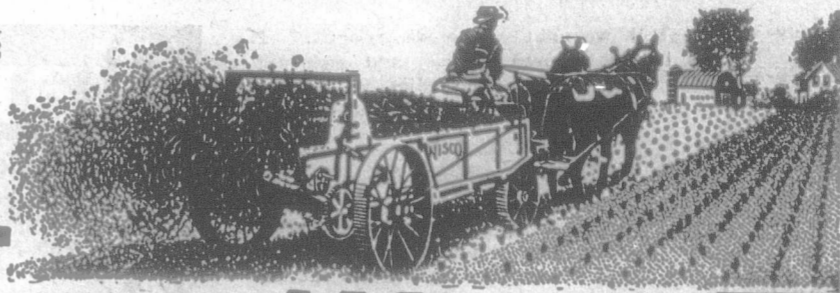
Tomato Sauce.—Slice 2 onions and cook in a very little water until the onions are tender and the water nearly evaporated. Mash the onions, then add half the bulk of hot cream and an equal bulk of hot canned tomato. Season, and serve with the sausage cooked as given above.

Potatoes with Tomato (Nice for sup- per in cold weather).—Chop an onion and cook to a yellow in three tablespoons butter. Add 1 cup canned tomato pulp, and 1 quart cooked potatoes cut in slices. Add stock or broth nearly to cover, also salt and pepper or paprika mixed with the stock to season nicely. Cover and cook gently until the liquid is much reduced. Sprinkle with a little finely-chopped parsley before serving.

Boiled Beefsteak.—Beefsteak is more delicious broiled than cooked in any other way. Wipe it with a damp cloth, heat the broiler very hot and rub it over with a bit of fat. Put the steak in it and hold close to the coals. Count ten and turn; repeat five or six times, then remove farther from the coals and complete the cooking, turning occasion- ally. When nicely browned, remove to a warm dish and spread with butter beaten up with a little salt and lemon juice. Serve at once.

Queen of Puddings.—Two cups milk, 1 cup bread crumbs, ½ cup sugar, yolks of 2 eggs, grated rind of a lemon, a little jelly, whites of 2 eggs. Beat the yolks, add the sugar and milk, mix and pour over the crumbs. Bake in a moderate oven. When done, cool a little, then grate the lemon rind over the top and spread with jelly. beat the whites dry with a little sugar, spread over the cake, and set to become firm in a moderate oven. Finally set in the top part of the oven to brown slightly. Chocolate, cocoanut, raisins, currants, or nuts, may be added to this pudding.

Read Bulletin 223 Issued by Ontario Department of Agriculture



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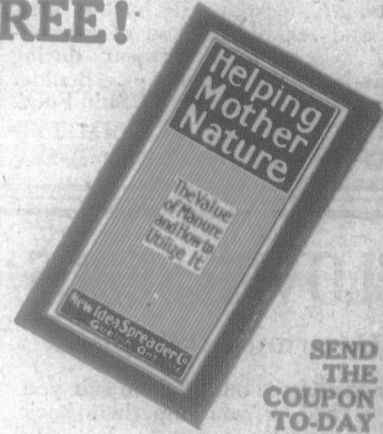
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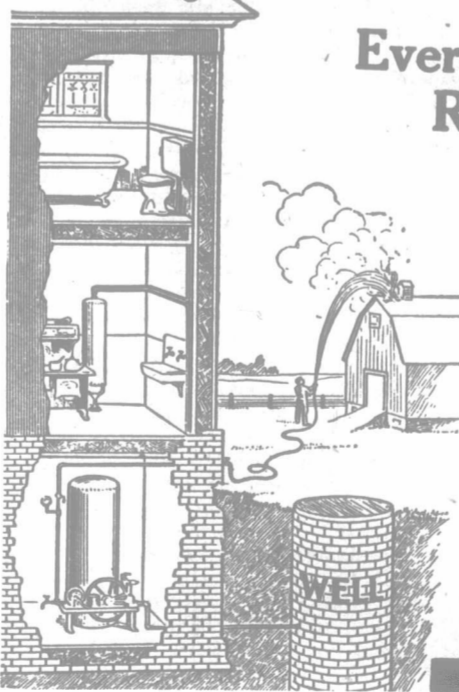
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The Scrap Bag.

FRENCH SALAD DRESSING.

A quick and easy French salad dress- ing is made as follows: Put 4 table- spoons best olive oil in a wide-mouthed bottle; add 1 tablespoon best vinegar, ½

teaspoon of salt, and a dash of red pepper or paprika. Now cork the bot- tle and shake well, and the dressing is ready for use.

GRINS VS. GROUCH.

To make "two grins grow where for-

merly dwelt a grouch," is, indeed, a subtle art, and one worthy our staunchest efforts. Long years ago, Helen Hunt Jackson told us that "Cheerfulness is a thing to be more profoundly grateful for than all that genius ever inspired or talent ever accomplished. Next best to natural, spontaneous cheeriness, is de- liberate, intended and persistent cheer- ness, which we can create, can cultivate, and so foster and cherish that after a few years the world will never suspect

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No. 1 Splendid Sample.....\$16.50
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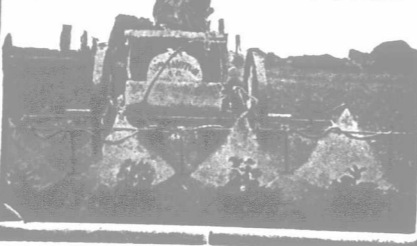
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that it was not an hereditary gift." It is helpful counsel to-day, and especially applicable to the complicated task of home-making.—Eleanor Robbins Wilson.

BADLY-BALANCED MEALS.

Badly-balanced meals, either in food constituents or in methods of preparing, are seldom appetizing. For instance, a meal which contains too much fat and protein, e. g., rich meat, rich pudding, and a rich nut salad, is likely to "turn" the appetite while eating, and to give a sense of heaviness afterwards. Or a dinner consisting of soup, stew, and a soft rice pudding, may offend by being "too sloppy" throughout. It is necessary to balance the foods. With very rich meats, serve vegetables and a light pudding; when stew is the meat course, follow by a firm pudding, or pie; garnish fish fried in grease with slices of lemon or a snappy green, such as watercress; and so on. Indeed, the law of "opposites" seems to hold good in cookery as in other things. Too much of a same-ness cloy.

SLEEPLESSNESS.

A glass of hot milk taken just before retiring will often cause sleep to come immediately.

WHY "WELSH RABBIT"?

The Welsh rabbit! Wherefore Welsh and wherefore rabbit? I do not want anybody to tell me that it is a corruption of "rarebit," because it is nothing of the kind. In its perfect form as we know it (some of us at least), it has little to do with Wales. The old-fashioned London tavern and coffee-house supplied it in perfection, and as the tavern and the coffee-house are fast vanishing to make way for the tea-shop, the perfect Welsh rabbit is less often to be met with. As to the Welshman, his pabulum was simply toasted cheese, without the accessories that go to the making of the perfect "rabbit." Like other hill-men—the Swiss peasants, for example—he found cheese to be a sustaining food in his wild life, and his neighbors of the plains, scoffing at the fare, humorously christened his slab of toasted cheese "the Welshman's rabbit." It was only an old-world joke without much point to it. There are others. One has heard of "Scotch woodcock," "Bombay Duck," etc. As to the misapplied ingenuity that would fain derive the name from "rarebit," I will none of it. There is not even logic in the contention, for it is not rare in any meaning of the word; it is neither underdone nor uncommon, but the cheapest and simplest fare that the most ardent simple-lifer might desire.—The Epicure.

The Dollar Chain

A fund maintained by readers of "The Farmer's Advocate and Home Magazine" for (1) Belgian Relief; (2) Soldiers' Comforts; (3) Red Cross Supplies.

Contributions from Jan. 14 to Jan. 21: Nelson B. Armstrong, R. 3, Bowmanville, Ont., 75 cents; "X," \$1.00; "L. K.," Eden, Ont., \$1.00; Miss A. McLatchie, Pt. Gattineau, Que., \$2.00; H. H., Pt. Gattineau, Que., \$5.00; "Toronto," \$2.00; "D," \$2.00; J. M. Wickson, Freeman, Ont., \$1.00; Frank Evans, Beechwood, Ont., 50 cents; Andrew Amos, Woodstock, Ont., \$1.00; Mrs. Geo. Mulcaster, Essex, Ont., \$2.00.

Amount previously acknowledged.....\$1,972.10

Total to Jan. 21st.....\$1,990.35

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

News of the Week

The staff of 32 medical officers and 81 nursing sisters for the Ontario Hospital at Orpington, Kent, England, is to be mobilized at once.

The Superintendent of Forest Protection for the Province of Quebec will use aeroplanes to discover forest fires.

Planet Jr. Seeder and Cultivator



plants and cultivates in half the time

It takes drudgery out of garden work, and gets bigger, better crops besides. Fully guaranteed.

This No. 4 Planet Jr Combined Hill and Drill Seeder, Wheel-Hoe, Cultivator and Plow pays for itself in a single season and lasts a lifetime. Sows all garden seeds (in drills or hills), plows, opens furrows and covers them, hoes and cultivates easily and thoroughly all through the season. 30 other seeders and wheel hoes—various prices.

New 72-page Catalog (184 illustrations) free! Describes over 70 tools, including 12 entirely new ones, and improvements to our Seeders, Wheel-Hoes, Harrows, Orchard- and Beet-Cultivators. Write postal for name of our nearest Agency.

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Whether you cultivate the smallest door-yard "patch" or the largest market garden you can't afford to work without a Planet Jr.

Hon. Dr. Pugsley, on Jan. 18th, in the Dominion Parliament at Ottawa, brought up charges of graft, and asked that a special parliamentary committee be appointed to investigate various instances in connection with shell-making and other supplies for the war. As yet, nothing further has been done in regard to the matter.

A Chinese Government army has been beaten, with heavy loss, in Yun-nan, by rebels.

Alfred A. Booth, Chairman of the Cunard Company, stated recently that before long Great Britain may have to choose between beer and bread. He stated that the brewing and distilling industries are absorbing the resources of the ships of the country on a gigantic scale, and that the net result of this is only a decrease in national efficiency.

The Kaiser has recovered from his recent illness sufficiently to allow him to pay a visit to Nish, where he conferred with Ferdinand of Bulgaria.

Twenty-eight members of the Reichstag have formed a new party, the "German" party, including Independent Conservatives, and members of the Farmers' League and former Hanoverian party.

The Turks have removed 400 guns from Gallipoli to the vicinity of Salonika.

The number of British officers lost in the war up to the end of December is placed at 22,081.

The age limit for service in Austria has been placed at 55 years. Those from 50 to 55, however, will only be asked to serve for six weeks in districts outside the war zone.

With reports stated on the bulletin boards and daily newspapers one day, and contradicted the next, it is almost impossible for any weekly paper to make definite statements in regard to the war. At the time of going to press, however, it appears that the recent reports in regard to Montenegro's surrender to the enemy, and the ultimatum said to have been delivered to Greece by the Allies, were both erroneous. Montenegro is still fighting, and it is said that her king, Nicholas, and his diplomatic corps, have left for Italy, while the Government has been transferred to Scutari in Albania. One band of Albanians has joined the Montenegrin soldiers, and continued resistance will be offered to the Austrians, who are supplying rifles to the faction of the Albanians who have been hostile to Montenegro. . . . Just what has been happening in the rest of the Eastern sphere is not clear. It is known, however, that the Allies landed troops at Phaleron, five miles from Athens; that these re-embarked after a short inspection of the city; and that troops were subsequently landed at Piraeus, the port of Athens, at Orfano, fifty miles north-east of Salonika, and at Corinth, forty-eight miles from Athens. Moreover, it is known that Allied warships have bombarded De-deaghatch, a Bulgarian port on the Aegean, and it is surmised that an attempt may be made to isolate Constantinople by cutting off her railway communication. In the meantime, it is stated that King Constantine of Greece, although fearing revolt within his own

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country, will ask the Allies to withdraw altogether. If they refuse, he will appeal to the people as to whether force shall be used to expel them. The Allies' force in the Aegean and Eastern Mediterranean, is now placed at 600,000; the Egyptian garrisons have been strengthened by troops from South Africa, and the Suez Canal is strongly guarded. Farther north, Russians and Austrians have been locked in deadly struggle near Czernowitz, which General Ivanoff has been striving to gain on account of its railway system, while from the Caucasus comes the good news that Grand Duke Nicholas' forces have defeated the Turks in a great battle near Erzerum, taking 1,500 prisoners. Heavy fighting has also taken place on the flooded Tigris, near Kut-el-Amara, which a British force is trying to reach. In Persia, the Russians are steadily advancing, notwithstanding the fact that German troops have been sent to join the troops which are opposing them there. From the Western front nothing is reported save the ceaseless desultory bombarding, sniping and grenade-throwing that goes on from trench to trench, with an endless,

dribbling loss of men on both sides. In the meantime Great Britain is steadily tightening the commercial blockade of Germany. This is causing some friction with Sweden, whose trade is being affected thereby.

The Windrow.

The Prussian hypnotism of the whole of Germany is one of the most amazing things I've ever heard of.—G. K. Chesterton.

The newest battle-cry of the British troops as they dash for enemy trenches is, "Front seats, two-and-sixpence!"

The children of Hamilton, Ont., during the past year have made for the soldiers 3,255 pairs of socks, 8,906 wash cloths, 285 pillows, 92 pairs of wristlets, 14 scarfs, 42 scrap books, and a great many dressings.

What will be the greatest irrigation system in the world was opened in India in December. It will, when completed, cover 322 miles of main line, and 22,645 miles of channels, watering 2,200,000 acres of arid land.

The insurance rate on all cargoes going through the Suez Canal has been trebled, which will make the expense practically prohibitive for most traffic. The Dutch and Japanese lines have already abandoned the route, and are sending their steamers around by the Cape of Good Hope.

Owing partly to the war demand, the price of gasoline continues to rise. Some predict that it will go up to 40 cents a gallon.

President Wilson is elaborating a plan for a Pan-American alliance, designed to prevent war among the States of the two Americas.

In commenting upon the remarkable career of Great Britain's Minister of Munitions, The Independent says: "It is a curious fate that has made this poor and despised Welsh lawyer the leading man in England. A few years ago he was execrated by the ruling classes, the aristocracy, the clergy and the capitalists, who now look to him as the saviour of the country. Yet he is imposing taxes ten times greater than those then thought intolerable and controlling the industries of the nation in a way that would once have been denounced as rank socialism. In appearing before the Trades Union Congress a few months ago he introduced himself, quite correctly, as 'the most extensive employer of labor in the world.' He has brought the manufactures of army supplies up to an unprecedented state of efficiency, and the British workman finds himself, much to his surprise, getting more money than he ever saw before. 'Lloyd George is now the dominant figure in a cabinet composed of the ablest men of all parties, and in case of Asquith's fall he is likely to become Prime Minister.'"

In China, from 175 to 200 papers are now being issued regularly every week. The names of some of these are interesting, e. g., "Awaken, China!" "News for Arousing the World," "News of Heavenly Duties," and "Virtue of the People."

A clever ruse for raising money: Some samples of letters in rhyme, supposedly sent to the Chancellor of the Exchequer, Mr. Reginald McKenna, are supplied by a humorist to London "Truth." One suggestion is particularly neat:

Dear Reggie—
 Take beneath the rose
 A tip that's simply brimmin'
 With possibilities. Impose
 A tax on pretty women.

No need to make a special list,
 For where's the Jane or Sally
 But would, with patriot pride, insist
 On rowing in that galley?

You see my point. You net the lot,
 There's none will let you spare 'em.
 Nay! Rather far they'd pay than not.
 Yours,
 STUDENS FEMINARUM.

One of the nursing sisters with the army at the Dardanelles mentions, in a letter home, the service that is being done by dogs on the field of battle. She says:

"The Red Cross St. Bernard dogs are a great help to us in finding the wounded, and it is remarkable how they know the dead from the unconscious. When they find a living man they give a low, mournful howl, to fetch us. We don't let them out till the battle is over, and sometimes we can't tell exactly where they have found the man: so when someone goes to them they come to us carrying the man's cap, which lets us know whether he is a Turk or a Britisher, and they lead us to the very spot."—The Australasian.

We are not here to play, to dream, to drift. We have hard work to do, and loads to lift. Shun not the struggle; face it. 'Tis God's gift. Say not the days are evil—whose's to blame? And fold the hands and acquiesce—O shame! Stand up, speak out, and bravely, in God's name. It matters not how deep entrenched the wrong, how hard the battle goes, the day how long, faint not, fight on! To-morrow comes the song—Malthie Davenport Babcock.

Suits Free!

Remarkable Cloth that Won't Wear Out! Now readers, would you like a suit or pair of pants absolutely free! A most astounding offer is being made by a well-known English firm! They have discovered a remarkable Holeproof Cloth. You can't tear it! Yet it looks just the same as \$20 suiting. You can't wear it out no matter how hard you wear it, for if during six months of solid hard grinding work every day of the week (not just Sundays), you wear the smallest hole, another garment will be given free! The firm will send a written guarantee in every parcel. Think, readers, just \$6.50 for a man's suit, and only \$2.25 for a pair of pants, sent to you all charges and postage paid, and guarantee for six months' solid grinding wear. Now, don't think because you are miles away you cannot test these remarkable cloths, for you simply send a 2-cent postal card to The Holeproof Clothing Co., 56, Theobalds Road, London, W.C., Eng., for large range of patterns, easy self-measure chart and fashions. These are absolutely free, and postage paid. Send 2-cent postal card at once! Mention "The Advocate."

Our Serial Story

"THE CHAPERON."

By C. N. and A. M. Williamson.
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 Chapter XXXIV.

RONALD LESTER STARR'S POINT OF VIEW.

(Continued.)

Robert came on board with us as a matter of course in starting for Zealand. Has he not more right than I to the deck of "Mascotte," as the cousin of the owner and the fiance of her stepsister? He and Phyllis were the only ones among us who had the same air of cheerful, light-hearted anticipation at setting off for new scenes, which all used to have when the trip was but a few days old. For them there is no thought of any end, since the tour of life together is just beginning, full petrol ahead.

Even when she was "Lorelei," and had no concealments from the world, "Mascotte" never sped more bravely. Through the wide Noord Canal she took us as unconcernedly as if our hopes and fears for the future were nothing to her. Out of sheer spite at her lack of sympathy, I enjoyed my private knowledge that, whatever happens to her, she is certain to lose her companion. "Waterspin." But she didn't know that; so she jogged on, purring, in blissful ignorance of the separation in store for her.

If Dordrecht had come under our eyes when they were fresh to Dutch waterways, we could not have passed it. Even now, blase with sight-seeing, and preoccupied with private heartburnings,

CHALLENGE COLLARS

WIPE THEM OFF WITH SOAP & WATER. — PRESTO! JUST LIKE NEW

BEST QUALITY DULL FINISH SMART AND DRESSY

AT YOUR DEALER'S OR DIRECT, FOR 25c

THE ARLINGTON CO. OF CANADA LIMITED 34-36 Dundas Street Toronto



This is your guarantee that Sanatogen will benefit your health.

What stronger guarantee can you desire than the unanimous verdict of the cleverest physicians in the world? Such was the verdict of the International Medical Congress, which gave its highest possible award, the Grand Prix, to Sanatogen—and only to Sanatogen—selecting it from all other tonics and nutrients which were submitted to the Congress.

When you take Sanatogen, therefore, you will not be risking your health or your money, as you would if you tried an unknown or secret preparation. On the contrary, you will know that in Sanatogen you are taking a tonic food which is officially recognised by the Medical Profession as being far superior to all others, and which cannot fail to be of real and lasting benefit to your health—especially to the health of your nervous system. Send this coupon to-day for a Free Booklet, which tells you exactly what Sanatogen is and why its effects are so powerful in various conditions of ill-health.

Sanatogen

British made by British labour.
 Sold by all Druggists, from \$1.00 per tin.

Send this Coupon To-day.

FREE BOOKLET.

The Sanatogen Co.,
 P.O. Box 2622, Montreal.

Please send me a Free Booklet.

Name

Address

S. 29/677

POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at 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 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 advertisements inserted for less than 50 cents.

BARRED Rock, Buff Orpington and White Wyandotte cockerels, two dollars and up. Pure-bred, true-type, our own bred-to-lay strains, the result of years of careful selection and breeding for winter eggs. "Ingleide Farm," Rural 1, Ancaster, Ont.

BARRED Rocks, laying strain, prize-winners. Cockerels, \$1.50 to \$2.00. Females \$1.25 to \$1.50. Central Poultry Yards, Colborne, Ont.

BARRED Rock cockerels and Pekin ducks of high-grade stock. Prices low. Leslie Kerns, Freeman, Ont.

BRAMA and Partridge Wyandotte cockerels \$2.00. Black Spanish cockerels \$1.50. Partridge Rocks, Indian Runners, Leghorns \$5.00 per trio, imported prize-winning strains. John Annesser, Tilbury, Ont.

CLARK'S Famous Orpingtons—75 choice vigorous Buff and White Orpington cockerels and yearlings, 100 pullets and yearlings. Bred from best exhibition and laying strains in Canada. Males \$3, \$4, \$5; females \$1.50, \$2, \$3 each. Choice breeding pen 5 birds \$10 to \$15. Best general purpose fowl bred, unexcelled for table, layers and mothers. Order from oldest and largest breeder in Canada. Satisfaction guaranteed. Eggs shipped in season. Catalogue free. J. W. Clark, Cedar Row Farm, Cainsville, Ont.

FOR Sale. Anything in "Snowflake" White Leghorns. Two to five dollars. E. W. Burt, Paris, Ont.

MAMMOTH Broiler turkeys for sale, bred from prize-winning stock, heavy weights. Angus Beattie, Wilton Grove, Ont. R. R. No. 1.

RHODE Island Reds, Rose-combs, O. A. C. bred-to-lay strain. Ten select cockerels. Two-fifty each. B. Armstrong, Codrington, Ont.

SINGLE-COMB Brown Leghorn cockerels (Kulp strain), one-fifty each. M. Howell, 24 Rawdon, Brantford, Ont.

TWENTY pair of S.C. Black Minorcas, good type and color at \$5 and \$10 a pair; the same breeding as my Guelph and Boston winners. Chas. Gould, R.R. No. 1, Glencoe, Ont.

WHITE Wyandotte pullets (laying), and bred direct from winning pen at Storr's College laying competition, \$2 each. Also extra large choice Toulouse geese \$2.50 each. Spruce Lodge Poultry Yards, Walkers, Ont.

Free to Stockmen and Poultrymen, our 80-page illustrated booklet on feeding; how to construct a house which will accommodate 100 hens, gives dimensions and measurements of every piece of lumber required. Deals with the common diseases of stock and poultry and the remedies. Tells how to cure roup in four days. Contains full information about Royal Purple Stock and Poultry Foods and Remedies. **THE W. A. JENKINS MFG. COMPANY** London, Canada

\$7.00 for this Collins Natural Incubator. Hatches biggest percentage of eggs. Money back if you don't like it. Write to-day. C. W. Collins, 417 Symington Ave., Toronto.

Chickens 19c. We will pay the above price for crate-fattened chickens, bled, and picked clean to the wing-tips. Chickens must be good size, straight-breasted and white in colour, not torn. These birds are for select trade, so must be A No. 1.

Waller's, 700 Spadina Ave., Toronto

OTHELLO TREASURE
THE WONDER BAKER
LARGEST RANGE ON THE MARKET
WRITE FOR BOOKLET
D. Moore Company
Hamilton, Canada



THE SHERLOCK - MANNING
20th Century Piano
"Canada's Biggest Piano Value"
has every standard feature, yet costs \$100 less. Ask Dept. 18 for Catalogue "T."
THE SHERLOCK-MANNING PIANO CO.,
London - Canada
(No Street Address Necessary) 64

It seemed rather like passing Venice without troubling to stop; for Dordrecht appeared to me more reminiscent of Venice than any other place seen during the trip.

So attractive did it look, as we peered up its pink-and-green canals, that I did suggest pausing.

"It would give us one more day together," I said, "if we took this for exploring Dordrecht and arrived at Middleburg to-morrow. Why are we in a hurry?"

Brederode laughed. "Ask Robert," he said.

But Robert's face and Phyllis's both answered before the question could be put. I guessed that Robert would have liked to stop the tour at Rotterdam (for what to him are the joys of traveling with a party compared to the bliss of the honeymoon?), but that Phyllis would not cheat Nell of Zeeland, which has always been talked of as the climax of the trip; Zeeland the mysterious, Zeeland the strange, proud daughter of the sea.

"Some time we shall meet again, for you must all join in paying a visit to Phyllis and me. Then we will take you to Dordrecht, and we will all speak together of this day," said Robert.

That settled it, for though Nell is owner of the boat and mistress of the situation, she would do nothing to postpone Phyllis's happiness. Something of the sort she murmured to me as we puffed past Dordrecht; but I could see by her face that Phyllis's idea of happiness is not hers.

"Good excuse to get in my entering wedge," I thought. "Ask her if she doesn't think it a risk for a girl to marry anybody but one of her own countrymen. If she says 'yes,' there's my chance. If she's inclined to argue, try to convince her, with our case in point."

No sooner, however, had I got my blue-serve shoulder closer to her white-serve shoulder, as we both leaned over the rail, looking back toward the old town founded by great Count Dietrich, than up sidled the lady who sometimes over-estimates her duties as chaperon. She wanted to know about Dordrecht and John of Brabant and the siege, and the inundation that set the town upon an island; nor would she be discouraged when I told her flatly that I knew nothing about it, and advised application to Baedecker.

She lingered, prattling pleasantly of the Merevede, and of the peace and watery silence into which we had passed, now that Dordrecht was left behind. She drew Tibe's attention to the low-skimming gulls, and our attention to Tibe. She asked if we did not smell salt, and insisted on our sniffing actively to make sure; then cried, "I told you so!" when, after slipping under a huge railway-bridge, hanging so high that the train upon it looked like a child's toy, we turned westward and floated out upon a wide arm of the sea.

Altogether, she would not let us forget her presence for a moment, and blandly refused to understand when my raised eyebrows telegraphed, "I didn't hire you for this."

We seemed now to have said good-bye to the sheltered coziness of Holland, just as we had said good-bye to several other pleasant dreams of the past. On either side the land ran away from us and hid beneath the dancing waves which ruffled the sea's sleeve, so that we saw of it only long stripes of green, which were great dykes, and irregular frillings of red, which were steeples and tiled roofs of houses.

The tide was in our favor, and we moved so quickly that Alb thought we would have no difficulty in reaching Middleburg by nightfall. Large steamers passed us, their decks piled with cargo, passengers crowding to the side to stare curiously down upon us as we rocked coquettishly in their wash. Save for these big floating houses, and broad, bowed, coughing motor-barges, "Mascotte" and "Waterspin" had the wide waterway to themselves; and when we had taken a southerly course, to enter a channel between low-lying islands, we were in Zeeland. Still, though we were skirting the shore of the island of Schouwen, it was as if it ducked its head rather than submit to the ignominy of being seen by strangers. It was just as Alb said, "Zeeland was witch-like, illusive, with the power of making herself invisible." The endless, straight

lines of the dykes protecting Schouwen and Tholen from the terrible power of the sea, stretched like close-drawn ranks of devoted soldiers—each stone a knight in armour—defending their liege ladies from an invading giant, hiding the besieged damsels' beauty behind the shields, so that the monster's appetite might not be whetted by their charms.

Schowen on the one hand, Tholen on the other, seemed to fall apart as Brederode cast us upon the broad bosom of the Oster Scheldt, steering for North Beveland, and told us legends the while of that strange archipelago which has for its arms a lion swimming in deep waters. He told of the yellow-haired Siren, who would sing to lure sailors to her rock because she was bored by the society of the Merman, her husband; how some fishermen one night caught her in a net, and because she was beautiful, would not give her back to the Merman, though he begged and prayed, offering a rich bribe of pearls and coral; how the Merman swam away at last, cursing the fishermen and their country, vowing never to rest till he and his brothers, with their own hands, had brought enough sand to choke all the city ports.

He told, too, of the tempests which throw on the shores of Zeeland's little isles the bodies of strange mummied monsters, part man, part boat; and of still, clear dawnings when the fisherfolk of Domburg can discern, far down under the green water, pagan temples of marble, and gleaming statues more perfect than any fashioned by known sculptors, even the greatest masters, when Greek art was in its prime. He told of the great dyke building, and how, at high tide, the North Sea beats fiercely on Zeeland's locked door. He told of the inundations, and how Schouwen, North and South Beveland, Tholen and Walcheren, had all been devoured by the sea, only to rise up again braver and stronger than before. He told how the men of Zeeland had fought against the men of Spain in the old, bad days; and it was all very interesting and instructive; but how was I to oppose my frail vow against such a tide of information? There were no dykes built round my resolve to propose to Nell within the space of four and twenty hours; and between Alb's eloquence and the L.C.P.'s persistence, it dissolved like a Dutch town in an inundation.

Still I was not as furious as I ought to have been. My steeples and chimneys remained above water, and the sky was so cloudless that I could not despair. It seemed like old times to hear Alb holding forth upon the history, drama, and legend of the little country of which he is so proud, and in spite of myself my heart was warm for him. I rather wondered how Nell had contrived to harden hers so relentlessly against those clear brown features, those deep brown eyes, and the firm mouth which is not cold.

"A good thing for me," thought I, "that she has. And if I don't get a chance to ask her to-day, I'll write a note and beg the L.C.P.—no, I'll get Sister Phyllis to give it to her this evening."

I was arranging the wording of the note, after tea, which we had on deck, when, quite idly at first, my eyes dwelt upon a black speck moving far away, in our wake. It amused me to see the speck grow, for at the moment I had no one to talk to, and Tibe was asleep with his chin on my knee. I lost track of a sentence which was shaping itself nicely in my mind and ought to have been irresistible to Nell, in wondering what the speck would turn out to be, by-and-by.

It was growing fast, which meant that it was moving fast, perhaps faster than we. Could it be a motor-barge? But why should a motor-barge be forging out to sea, where no motor-barges or motor-boats of any sort, except racers, had any need to venture, unless they were navigated to gratify the whim of a wilful American girl?

Now, it did not appear likely that in Dutch waters there could be at this moment an indefinite number of American girls, wilful or otherwise, owning motor-vessels, and wishing to visit Zeeland in them.

If it were not such a fine day, Alb would not have taken the risk with "Mascotte" and "Waterspin," even to please his particular American girl, and

WANTED

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.

FOR Sale: 100 acre farm, 3 miles west of London, Ont., in London, Tp., with 2 bank barns, rooms for 40 head of horses and cattle. Brick house with hard and soft water, well at barns and piped spring in pasture. Six acres of bush. For full particulars address W. R. Cooper, R. R. No. 3, London, Ont.

WANTED—Married man to work on farm. W. C. Good, Paris, Ont.

WANTED, man and wife—for Holstein herd. Man to take charge of stables, milking, feeding, etc. Wife to make some butter and board one or two men. Most of milk goes to city. Position open March 1st. House has bath and furnace. Good wages and permanent place to right parties. Must give reference. Apply to Box "A" Farmer's Advocate, London, Ont.

WANTED, man and wife. Man must be good farmer and capable of taking charge—also have a good knowledge of horses, Shorthorns and pigs—wife to board men. Prepared to pay good wages to suitable parties. Brick house with running water. References required. Apply to Box "C" Farmer's Advocate, London Ont.

WANTED—April first—Experienced farmer married, abstainer; competent to take charge 100-acre farm and live stock in all details. Wife to do milking and dairy work. House provided and usual allowances. State age, experience, wages, references. Box "O," Farmer's Advocate, London, Ont.

640 ACRES in Central Alberta—live stock run out all winter. Some years ago I personally selected this farm after examining many townships. It has steadily increased in value, and is now surrounded by prosperous farmers; near main line, southeast of Edmonton. Gently rolling deep black soil, underlaid with clay. All in hay, no sloughs, and ready for the plough, every acre arable land. Neighbors this year (1915) averaged 60 bushels wheat per acre. Wish to sell at once. No agents. Price \$25 an acre, half cash, worth \$100 an acre for farming purposes. Easy terms. C. C. Creelman, President Ontario Agricultural College, Guelph.

WANTED a pure-bred Clydesdale stallion, must be black, rising 3 years old; state price. Box "G," Farmer's Advocate, London, Ont.

Wanted—Herdsman for one of the best Shorthorn herds in Ontario. Must be competent and careful; age over 35 preferred and married. Apply Box 18, Farmers' Advocate, London, Ontario.

Strawberries, seed potatoes, etc.—50 berries, including Fall-bearing. St. Regis, Ever-bearing and other raspberries. Blackberries, currants, gooseberries, grapes, asparagus, Clobber and Green Mountain potatoes. Catalogue free. H. L. McCONNELL & SON, Port Burwell, Ont.

Draftsmen are in demand. Learn Mechanical Drawing and Machine Design. Complete, practical course by mail. Canadian Correspondence College, Limited, Dept. E E, Toronto, Canada.

Wanted—Custom Tanning. Horse hides and all kinds of cattle hides for robes and coats. Also have them tanned soft and pliable. Address: B. F. BELL, Delhi, Ont.

For Sale—Five pet coons, two males, three females, two years old, good dark color, good size. Apply to J. R. THOMPSON, Box 235, Guelph, Ont.

HOLSTEIN BULL
A grand show individual, fit for immediate heavy service, 13 months old. Sire, Ourvillia Sir Teake Colantha. Dam just finished record of over 23 lbs. at 4 years; average test 4%. Price right for immediate sale. Apply
WM. J. BALD, Mitchell, Ont. R.R. No. 2.

Cotton Seed Meal
LINSEED MEAL AND FLAXSEED
H. Fraleigh, Box 1, Forest, Ont.

Corn That Will Grow
Canadian-grown seed corn. Your money back if not satisfied.
J. O. DUKE, RUTHVEN, ONT.

Harab-Davies Fertilizers Yield Big Results
Write for Booklet.
THE ONTARIO FERTILIZERS, LTD
West Toronto

WANTED

Advertisements will be inserted under this heading, such as Farm Properties, Help and Wages Wanted and Pet Stock. TERMS—Three cents per word each insertion. Initial counts for one word and figures for words. Names and addresses are confidential. Must always accompany the order. No advertisement inserted for less than 50 cents.

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Wanted—seed potatoes, etc.—50 standard varieties straw including Fall-bearing. St. Regis, Evered and other raspberries. Blackberries, currant bushes, grapes, asparagus. Cobblers in Mountain potatoes. Catalogue free. CONNELL & SON, Port Burwell, Ont.

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Wanted—ton Seed Meal LINSEED MEAL AND FLAXSEED. Write for Booklet. LEIGH, Box 1, Forest, Ont.

Wanted—That Will Grow in-ground seed corn. Your yield back if not satisfied. Write for Booklet. LEIGH, RUTHVEN, ONT.

Wanted—ab-Davies Fertilizers Yield Big Results. Write for Booklet. FERTILIZERS, LTD. West Toronto

if it were not to please her, he would probably not have come in any case. Yet that thing behind us was skimming along too fast to be anything else save a motor-boat. What then was its errand in this wide, lake-like expanse of water, which did not lend itself to the encouragement of promiscuous motor-boats?

It was gaining on us now, for it had no fat "waterspin" to drag. One might almost think it was following, it came so straight, and—Suddenly my ears and the top of my head felt hot.

I got up, and went to Alb, who was standing silent at the wheel. Before I spoke to him I glanced at the others to see that they were all fully occupied in listening to Robert talk of the house, next door to his mother's in Rotterdam, which he had the intention of buying "as a wedding present for Phyllis."

"Alb," said I, "just throw a look over your shoulder, and say what manner of thing you think that is coming after us."

He threw the look. "I think," he answered slowly, "that it's by way of being Sir Alec MacNairne's 'Wilhelmina.'"

"Good heavens!" I exclaimed, "you take it pretty calmly." But even as I reproached him, I was conscious of an increase of speed. Alb can regulate this by means of a long lever which goes down through the deck to the motor.

"What makes you think it's Sir Alec?" I asked. "You can't tell yet what the thing looks like."

"Neither can you," said Alb. "You felt what it was. It's the same with me. I feel it's 'Wilhelmina,' and I'm going to try and give her the slip again, if I can. But honestly, if it's she, and she wants to overhaul us, we haven't got much chance weighted down by 'waterspin.' If it weren't for that, I'd guarantee to let 'Wilhelmina' see nothing but our heels."

"Let's cut 'waterspin' adrift," I whispered, glaring at poor Toon, who stood steering the squat little barge, with an irritatingly complacent look on his nice face.

"Impossible, my dear fellow. But you don't mean it, of course." "I'm capable of meaning anything," said I. "See here, old Alb, you've pulled me through a lot of things, since you tied yourself around my neck; pull me through this, and you shall be best man at my wedding."

"Who'll be the bride?" he asked, as I stared back at the following craft, which was now too big to be called a speck. It was a black blot upon the water, as upon my hopes.

"The bride?" I repeated. "Why, N—Oh, by Jove! wasn't she the one you wanted at one time? You never would tell which, you know, so you can't tell me."

"Are you engaged to her?" he asked, in a rather queer voice; and I realized how much I was at his mercy, as, fascinated, I watched his brown hand tighten on the wheel. If he liked, he could stop "Mascotte" in mid sea, and let me lie at the mercy of the enemy. I could do nothing. Hendrik would obey him, not me. Even Tibbe would not seize him by the throat to please me. Tibbe likes and respects Alb even more, strange to say, than he does me.

But, to do Alb justice, he was not slowing down. On the contrary, he was putting on speed, as much, I feared, as "Mascotte" was capable of making.

"I'm not engaged," I admitted; "but I was going to propose to her to-day, if this hadn't happened. For goodness' sake, hurry."

"I wonder you have the cheek to tell me that, and then ask me to hurry. Why should I help you to get her?" "Do you still want her?" I asked. "More than I ever wanted or shall want anything else."

"Then it's all up with me!" I groaned. "Do you mean—?"

"I only mean that you can make me lose her. If Alec MacNairne boards us like a pirate, and yells for his Fey, I shall be discovered as a perjured villain, just in the very hour when it's necessary for me to appear most virtuous. Heavens! If this could only have happened afterwards. Once I was sure of her, I'd have confessed anything, for I could have made her understand how it was all done for her sake—for love of her."

"And her stepsister," said Alb, bitter-

ly, as he did to the wheel what perhaps he would have liked to do to my throat.

"That was a mere boyish fancy," said I. "I love Nell Van Buren with a man's love. You can stop this boat if you choose to be a revengeful Albatross—"

"I shall not stop the boat," he said, in a grave, hard voice, which made my tone sound light, almost humorous. "I shall not rob you of your chance with her. If it depends upon me, you shall have it."

I really did admire Alb, as he stood there, not looking at me, but straight ahead, as if into a blank future.

"Do you care for her a lot?" I asked, half remorsefully.

"Only more than for the rest of the world put together. But I tell you honestly, I haven't had much hope lately. I suppose I was a conceited ass to make up my mind that nothing should stop me from winning the girl, in spite of herself. Well, she's punished me—shown me my folly. But for all that, I regret nothing. If it were to do over again, I'd come on board this boat and work for her as I have worked, even knowing as I know now that she'd end by disliking me as much as she did in the beginning. You're an attractive fellow to women, Starr."

"Phyllis preferred Robert," I said thoughtfully.

"Yes, I confess I hoped you and Miss Rivers would make a match; then I'd have had nothing to fear from you in the other direction. But it wasn't to be; and she and Bob van Buren will be perfectly happy. You needn't fear I'll turn against you. Depend on me to do my best with the boat—though of course you won't expect help in any other way."

"Of course not," I said.

"Nor need it, I suppose," he added, harshly.

"Perhaps we may be mistaken about the boat being Alec's," I said.

"We both know we're not," said he. "Still—there's my glass. Have a squint through it."

I took up the binocular which the skipper always keeps handy, and had the squint, as he recommended. It was not an encouraging squint, for, though our follower had not been gaining for the last few minutes, all I could see of her made me more confident than before that she was "Wilhelmina." Whether Alec MacNairne was actually in chase of us, or whether it merely happened that he had to-day made up his mind to try Zealand, in his quest remained to be seen; but be that as it might, we were in the greatest danger of being overtaken.

In my agitation and fear of losing all, I could not concentrate my mind upon the thinking out of any stratagem to outwit Alec if he came upon us, and I dared not interrupt Alb's task by imploring him to rack his brains. The thing for him to do, I told myself, was to keep ahead of "Wilhelmina" at any price, especially while we were in open water. Once we could gain the region of canals and narrow cross channels, we might slip around a water-corner and disappear. Anything, anything, then, to keep ahead!

"Run down and tell Hendrik to see that there's plenty of water," said Alb. "It won't do for the motor to get hot. Say to him that we're going to have a race."

"I can't make him understand," I wailed.

"I forgot. Well, take the wheel a minute, then—"

"I daren't. If I do, something's sure to go wrong; or I shall snap it short off on its stem."

"You are a helpless chap, I must say."

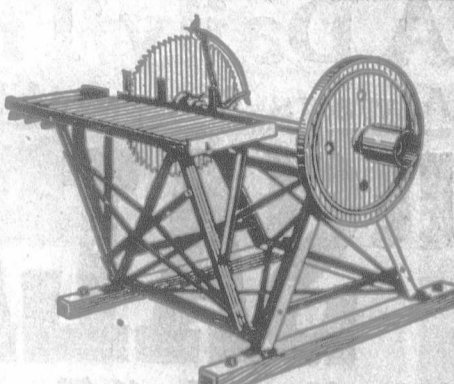
"So would you be, if I told you to finish one of my pictures, perhaps."

"That's true. Well, say this."

And he uttered useless-sounding words in Dutch, which I repeated after him until I knew them by heart. Then I went below and gabbled them to Hendrik, not more than half wrong, for he seemed to understand. But while the pink youth abandoned the operation of rubbing brass with cotton waste in favor of bailing up water, I stood gazing at the motor, praying it to do its best.

It was hot in the motor's den; so hot that it was no wonder the deck, which formed the roof, often felt warm under-

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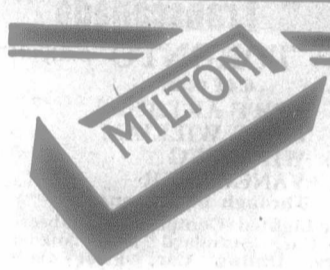
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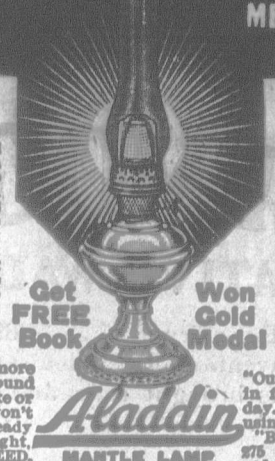


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foot. Chump, chump, went the engine, sounding stolid and Dutch and obstinate, as if nothing on earth or water could induce it to go faster than it chose. It even seemed to me as I gazed that it was slowing down, out of spite. I longed to feel its pulses with a stop-watch in the other hand, and make sure. Could it be that, after all, Alb had changed his mind, and meant to betray me? No, it must be a trick of my amateurish fancy.

I assured myself of this two or three times over; but when Hendrik came back with a big pail of water, I saw by his face that I had not been deceived. Something was wrong.

There was no use in trying to question him, since I have no Dutch, and he has no English, except "Thank you," and "Good day." He flew at the motor, his cheeks pinker than ever, and I flew up on deck to find Alb in the act of giving over the wheel to Nell.

He pushed past me with a quick, "Don't stop me. I've got to see what's wrong." And I joined Nell, who looked very proud of herself as skipper.

Every one on deck was alert now, knowing that something had happened, for the first time in all our peaceful watery weeks. They were not yet aware of the pirate in pursuit, or that this day was the one of all others when the motor ought not to fail us: but they knew that, after putting on a fine spurt of speed for some reason or other, the engine had turned suddenly sulky, and was threatening to stop.

"Have I the evil eye?" I asked myself. "Did I 'overlook' the beastly thing when I went below and stared at it?"

"What's the matter?" I inquired of Nell, feeling a certain relief in talking to her, she looked so beautiful and so dependable.

"Don't speak to the man at the wheel," she said, smiling, but keeping her eyes straight ahead.

"Jonkheer Brederode says it's nothing serious; we aren't to worry," remarked the L.C.P. from her deck-chair. "I think it's rather fun to have a nice little accident. It breaks the monotony. And it's really exciting, being out at sea."

"It is rather exciting," said I, signaling danger, with a glance that swept the water as far back as the now plainly visible pursuer.

She may or may not have caught my meaning; but Robert van Buren's eyes chanced at that instant to fall upon the distant craft.

"Ah!" he observed, in a tone of careless interest, for which I could have boxed his ears, "there is another motor-boat, I believe. It is coming as straight as if it were following us."

I saw the L.C.P. give a start. She looked at me, and our eyes would have met had it not been for the blue glasses. She understood, and knew just how exciting her "nice little accident" might turn out to be.

At this moment the motor gave a groan and stopped. As it's heart ceased to beat, I was astounded by the apparition of a totally new Alb.

Two minutes ago, at most he had disappeared in the garb of a self-respecting gentleman with a yachting turn of mind. He reappeared in a suit of Hendrik's blue overalls, and, apparently, nothing else, his feet being bare. In his hand were a hammer and a chisel.

"Motor's all right. It must be the propeller that's wrong. I'm going down to see," he explained, no trace of excitement on his face, no hint of flurry in his voice. Alb is a good placid one, and for presence of mind and savoir faire I've never met his equal.

As "Mascotte" had slowed down, and then stopped, "Waterspin" came lolling alongside. Toon, looking scarcely more flustered than his superior, kept the barge from hunting into her consort, fending her off with a pole. Alb, with a rope round his waist to keep him steady at his work under the water, slid over the side of the boat, and groped about with his free hand under the water-line.

"There's something around the screw shaft," he called up to Robert and me. "Queer thing! It feels like a coil of wire. We must have picked it up in the canal by Dordrecht, and ever since it's been slowly winding itself around the shaft, until now it's so tight that the propeller can't work."

"Then all hope's over," I said, with a meaning which he alone—or perhaps the L.C.P.—could understand. "We're caught in a trap."

"This hammer and chisel will gnaw our way out," he answered. "The game isn't up yet. Hood-by. I've got to work in Davy Jones's workshop."

Drawing a deep breath, he dropped down under water, which hid him from sight like a roof of thick gray glass. Then, in a few seconds, we heard a knocking, muffled, mysterious, somewhere below that glass roof.

After a time which seemed long to every one, and an age to me, up came Alb's head, wet, black, and glittering.

"Wish I had a diver's helmet," he said, when he had breathed; and promptly dipped out of sight again.

Once more the knocking came. Alb was working hard and loyally for my interests, and against his own, I couldn't help remembering; but meanwhile we were floating idly, losing precious time, while the pirate gained upon us. Fifteen minutes more of this inaction, and he would be on our backs. I almost wished that he were a true pirate, and that it might be a war of knives and cutlasses, instead of wits and tongues. I could be brave enough then; but as a fraudulent nephew detected with his false aunt, so to speak, in his mouth, what wonder if I felt my heart turn to water?

Twice more Alb came up to breathe, and dived again. The last time all was still underneath the water, and a fear came over me that Alb had knocked his head against something, or got a cramp. But he appeared, spluttering, and announced that he had been cutting the wire through with the chisel. There it was in his hand, a thick, ugly coil, dangerous as an octopus.

"Start the motor, Hendrik," he called, even before he had clambered on deck. "Now, ladies, unless you go below you may get a shower bath, for we're going to have a race with the motor-boat that's coming along—just for the fun of the thing, you know—and I can't trust the wheel to any one while I run down and change."

"We shan't mind a wetting," said Nell, whose eyes were shining with something very like admiration. "We want to see the race."

"I would rather you saw it from the cabin windows," said Brederode; and I guessed at once that he had more than one object in hustling the women of the party below. The L.C.P. guessed also, and headed a reluctant procession.

Now the pursuing Vengeance was not five hundred yards behind, and if we had ever doubted that she was "Wilhelmina," we doubted no longer. I could distinctly see a man's figure in the bow, and would have felt safe in staking any sum that it was Sir Alec's.

Alb, dripping like a fountain-statue, stood at the wheel, and as I had never seen him look more attractive, perhaps it was as well for me that Nell had gone below.

"They'll think me a madman when we come to a lock," said he; "but who cares? I'm bound to get you out of this scrape if I can."

Never was sound more melodious in my ears than the quickening throb of the motor. I felt intimate and at home with it, as with the beating of my own heart. On we went, pounding along at recovered speed, and were well into the channel between North and South Beveland, but there also was "Wilhelmina." Oh, for some small side canal into which we could slip and somehow disappear!

As my eyes searched the waste of green water and the low coasts of Beveland, all unexpectedly to me we rounded a point, and there was a half-hidden town, one graceful spire seeming to beckon where safety lay.

"It's Veere," said Alb. "You're sure to have heard of it: all artists have. But the thing of importance to us now is the canal which begins here, crosses the island of Walcheren and goes to Middelburg and Vlissingen. If only we can get in, and shut 'Wilhelmina' out!"

"Can we?" I gasped.

"Look!" he answered. "What luck!"

I looked, and saw from afar two great sea-gates of a monster lock standing open, while into its jaws poured a train of barges, sailing-boats and small steamers, which had been biding their time outside.

"Joy!" I cried. "We're saved."

"Not yet," said Alb, as we dashed on,

"In all hope's over," I said, with a grin which he alone—or perhaps C.P.—could understand. "We're in a trap."

"The hammer and chisel will gnaw my way out," he answered. "The game is yet. Hood-by. I've got to go to Davy Jones' workshop."

"I took a deep breath, he dropped under water, which hid him from me like a roof of thick gray glass. In a few seconds, we heard a muffled, mysterious, somewhere that glass roof.

"A time which seemed long to me, and an age to me, up came dead, wet, black, and glittering.

"I had a diver's helmet," he said when he had breathed; and promptly he came out of sight again.

"More the knocking came. Alb was striking hard and loyally for my side, and against his own, I could not remember; but meanwhile we were eating idly, losing precious time, the pirate gained upon us. Fifteen more of this inaction, and he would be on our backs. I almost wished he were a true pirate, and that he were a war of knives and cut-throats instead of wits and tongues. I was brave enough then; but as a nephew detected with his false smile to speak, in his mouth, what I felt my heart turn to water?

"I felt my heart turn to water? Alb came up to breathe, and again. The last time all was beneath the water, and a fear crept over me that Alb had knocked his head against something, or got a cramp, and appeared, spluttering, and another that he had been cutting the rope with the chisel. There it was in his hand, a thick, ugly coil, as an octopus.

"The motor, Hendrik," he said when he had clambered on. "Now, ladies, unless you go before me, get a shower bath, for I am going to have a race with the boat that's coming along—just for the thing, you know—and I will get the wheel to any one while I can and change."

"I don't mind a wetting," said Nell, who was shining with something like admiration. "We want to see you rather you saw it from the clouds," said Brederode; and I once that he had more than in hustling the women of the crew. The L.C.P. guessed also, and a reluctant procession.

"I was pursuing Vengeance was not far yards behind, and if I ever doubted that she was a pirate, we doubted no longer. I distinctly see a man's figure in the water and would have felt safe in my sum that it was Sir Alec's. Hoping like a fountain-statue, he wheel, and as I had never look more attractive, perhaps well for me that Nell had

"I think me a madman when we were a lock," said he; "but who am I bound to get you out of if I can."

"I sound more melodious in the quickening throb of my heart, I felt intimate and at home with the beating of my own heart, we went, pounding along at a speed, and were well into the bay between North and South Beveridge, where also was "Wilhelmina."

"The small side canal into which I slipped and somehow disappear! I searched the waste of green for the low coasts of Beveland, and tediously to me we rounded a point there was a half-hidden graceful spire seeming to rise safely lay.

"I gasped. "You're sure of it: all artists have a sense of importance to us now which begins here, crosses the Walcheren and goes to Mid-Flissingen. If only we can shut 'Wilhelmina' out!"

"I gasped. "What luck!" he answered. "What luck!" he said and saw from afar two great eyes of a monster lock standing into its jaws poured a train of sailing-boats and small steam-boats had been bidding their time

"I cried. "We're saved," he said Alb, as we dashed on,

full speed ahead, going as we had never gone yet. "We may be too late. Quick, run forward, haul down the stars and stripes, and hoist the Club flag instead. That'll carry more power even than the whole Navy of the United States, and I mean to use it for all it's worth, right or no right."

I darted to the bow and changed the flags, fumbling in my haste; then, when the tallman was floating bravely, I hurried back to Alb, who was imperiously clanging our bell with one hand, and steering with the other.

I stood ready with the long boat-hook, not daring to look back and see what speed "Wilhelmina" might be making. Toon was alert on "Waterspin," with a coiled rope in his hand. All the boats were in the lock now, and the sound of our bell, and the colors of the Club flag alone kept the lock-keeper from closing the great gate-jaws. Time was up: we must make a spurt for it if we were not to exhaust his patience.

We could see him beckoning eagerly, and with a rush we were at the gates, in the tail of the long procession. It was only as I knew they were slowly, inexorably closing behind us that I could bring myself to look back. There was "Wilhelmina" just coming into sight round the point, Alec McNaime gesticulating wildly, a figurehead "come alive," and furious.

(To be continued.)

Questions and Answers.

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

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

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

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

Miscellaneous.

Trade In Clover Seed.

Please state in "The Farmer's Advocate" if it is against the law for one farmer to sell clover seed to another? SUBSCRIBER.

Ans.—We interpret The Seed Control Act to permit of farmers selling seed or seeds to other farmers, provided the purchaser comes to the place or farm and takes the seed himself from the seller. Section 5 of the Act reads thus: "Sections 6 and 7 of this Act shall not apply to the sale of seed that is grown, sold and delivered by any farmer on his own premises, for seeding by the purchaser himself, unless the purchaser of the said seed obtains from the seller at the time of the sale thereof a certificate that the said seed is supplied to him subject to the provisions of this Act."

We understand this to mean that a farmer may dispose of his seed or seeds to another farmer on his own place, and may make the sale not subject to the provisions of the Seed Control Act.

Tuberculosis.

What is wrong with my hens? They seem to get weak in the legs, stay on the roost in the morning, and when they do fly down, their legs are not strong enough to hold them up, fall forward on their breast; comb turns a little purple. On opening them, find the liver much enlarged, with some yellow spots, and lumps, the size of peas on the bowels leading to the rectum. They were affected in the summer time the same as now, and fed on oats and wheat, mostly oats. N. J. S.

Ans.—The symptoms indicate tuberculosis. The enlarged and spotted liver is almost an infallible indication. If the entire flock is affected, we would advise that you get rid of the birds and clean up the premises, disinfecting with some of the disinfectants advertised in this paper, or with a solution of carbolic acid and lime, the whitewash containing about five per cent of the carbolic. The birds should be destroyed either by fire or burying with lime. In case the disease is not very bad in the flock, you might save those birds not showing clinical symptoms by taking out the infected birds and thoroughly cleaning up the premises before putting those apparently healthy back in the pen. This is rather a difficult disease to deal with, and requires rather heroic methods.

Poultry Wanted—Buckwheat for Horses.

1. Could you tell me where I could get some South African geese and Scova ducks?

2. How can I feed buckwheat to horses to fatten them? J. I. S.

Ans.—1. We can only recommend our advertising columns as a means of obtaining this class of poultry.

2. We have had no experience in feeding buckwheat to horses, but believe it is sometimes practiced to fatten them quickly. In feeding, it should be mixed with oats in a very small proportion, say one to six or seven, at the start. If you find the horses take to the feed quickly, and gain on it, increase the amount of buckwheat if thought advisable.

Bad Seed.

I bought two kinds of Swede turnips last year from local seed dealer. From the two acres that I sowed I got about 150 bushels of Swede turnips, and the rest were Greystones, which I simply plowed down. Seed dealer admits mistake in seed. Can I claim damages for loss of crop? A SUBSCRIBER.

Ans.—Unless the seed dealer deliberately sold you the wrong seed, you might have rather a difficult task in collecting damages. We cannot say how the judge would pass upon such a question, but we will say this, that it would pay to buy package seed from reliable seedsmen, rather than take chances on other seed. The seed dealer should be responsible for his carelessness, and the judge might allow you something, but if he took it as simply a mistake, you might not get very much for your trouble.

Periodic Ophthalmia.

1. I have a mare which will be four years old in the spring. She worked all last year and was bothered with her teeth. In the fall her eyes started watering so badly that at times she could hardly see. I went to a veterinarian, and he said she would have several attacks, and said to give her salt-petre, which gave her relief, but it is bothering again. A little bit of white matter appears in the corner of the eye. Please tell what is the trouble, and cure. E. L.

Ans.—This is a constitutional disease, periodic ophthalmia. The attacks cannot be prevented, and all that can be done is to treat them when affected. It is very probable that after a few attacks, cataracts will form which will cause blindness. When affected, keep the animal in a partially-darkened stall. Bathe eyes three times daily with warm water, and after bathing put a few drops of the following lotion into each: Sulphate of zinc, 15 grains; fluid extract of belladonna, 20 drops; distilled water, 2 ounces. The trouble is hereditary.

2. The teeth would have to be in a bad condition before they would seriously affect the eyes.

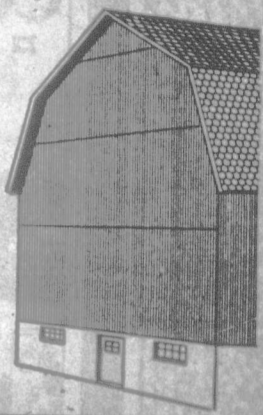
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you get every quality needed for land clearing—strength, power, speed. The Kirstin is the only stump puller with variable speeds. This gives you a big advantage—saves much time. To start the tough stumps, you have enormous power; then when the stump breaks loose, a turn of a wrench gives greater speed. Any and all kinds of stumps—big, little, green, dry, tough—also trees and hedges—are pulled quick and easy. The Kirstin holds the record for lowest cost of operation. Prove our claims by

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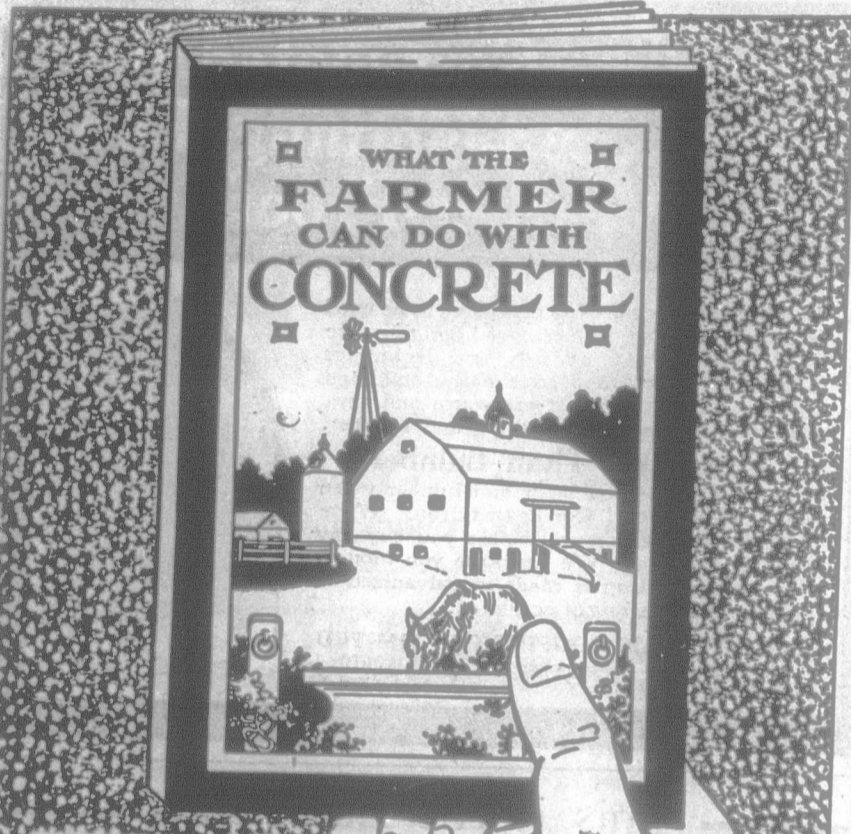
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Questions and Answers. Miscellaneous.

Mangles and Turnips for Cows—Millet.

1. Which has the greater milk-producing properties, turnips or mangels? Have there ever been, to your knowledge, any tests made with turnips and mangels fed for producing milk? If you know of any such tests, kindly let me know the results.

2. Are Hungarian and Japanese millets good milk-producing feeds? Which is the more profitable to grow and cure for hay?

Ans.—We have not at hand the results of definite tests in feeding dairy cows turnips and mangels, but they are generally considered to be very nearly equal in feeding value for stock generally. Of course, good mangels would be better feed than white or soft turnips, but it is just possible that Swede turnips might give a little better results than mangels. However, there is one thing you should consider, and that is the flavor of the milk. Turnips are very often blamed for giving the milk an off flavor, while mangels have not this drawback.

2. Millet is a fair feed for milk production. Japanese should outyield Hungarian. Of course, millet is generally considered a catch crop. By this is meant a crop put in when hay fails, and it is necessary to substitute some other crop for feed. If you have good clover or alfalfa in abundance, millet will not be found a very profitable crop.

Fitting Horse For Market—Lymphangitis—Inflamed Udder.

1. I have a young horse which I wish to fit for market. He worked hard last fall, and does not look as well as I would like. He is in good fettle, but his hair does not seem right. What would you advise giving him? Does he require a purgative?

2. A twelve-year-old mare had lymphangitis a few years ago. Since that, one of her hind legs still swells in the winter. She does some work and driving. This winter, when she urinates, she groans as though in pain. She is not in foal. I give her saltpetre, about one ounce once a week. What can I do for her?

3. I have a young Holstein cow which I stopped milking about a month ago. She is springing now, and her udder is sore and inflamed.

Ans.—1. It might be well at the outset to give the animal a mild purgative. Follow this with a good ration of oats and hay. A little corn also would have a splendid effect in a case where more flesh is required. Give a few roots and some bran. A handful of oil cake twice a day will give the hair a sleek and glossy appearance. It would be well to examine the horse's teeth and see that they are all right. We cannot state definite amounts of grain and hay. It is necessary to pamper the animal, giving him plenty of good grain and hay, with a few roots, bran and oil cake in addition. Do not neglect to give regular exercise.

2. The lymphangitis is liable to recur each winter, and the animal should have regular exercise each day. Treatment consists in giving a purgative of 6 to 8 drams aloes and 2 drams ginger, and following up with two-dram doses of saltpetre three times daily. Local treatment consists in long and repeated bathing with warm water, applying a liniment after bathing, and excluding all drafts. When bathing with warm water it is extremely necessary to fortify against drafts else the results will be bad indeed. While under the influence of the purgative the mare should not be worked. Afterwards, regular exercise tends to dissipate the swelling. The fact that the mare groans when urinating should not cause any anxiety. If the urine does not pass too frequently, or does not contain blood or puss, it is possible that the trouble is not serious.

3. It would be wise to bathe the udder with warm water, and rub twice daily with a mixture of seven ounces camphorated oil to one ounce fluid extract of belladonna.

Spraying on Whitewash.

Kindly give me recipe for mixing whitewash, to be applied with a spray pump. In using lime, although I mix it thick, it does not seem to show up white when finished.

Ans.—Take one-half bushel of good lump or unslaked lime and slake with boiling water. Cover it during the process to keep in the steam. Add enough water to bring to the consistency of milk, and strain through a fine sieve. Add one-half pound or more of Spanish whiting and five gallons of hot water. One application from a spray pump does not often give a satisfactory coloring. After drying, the application should be repeated.

Cows Losing Milk.

Last year one of our cows commenced losing her milk at odd times, and even after we dried her off a couple of months she would leak some. This year, two more, along with her, have freshened, and in the morning when they get up there is quite a quantity of milk in the trench. It does not happen often; sometimes two or three times in one week, and then not again for nearly a month. They are not too free to milk. What is the cause of it? We have been told it is a germ, and will affect the whole herd, and then again that it is because they are lying on a cement floor. They are always well bedded with clean straw, and are in a warm stable.

Ans.—The fact that the cows leak milk does not indicate that they have a germ disease, neither does it indicate that the cement floor has anything to do with it. Doubtless you have some heavy-milking cows, and cows which milk easily. We can only advise that you keep them well bedded and milk them regularly.

Augmenting Pasture—Paid Note—Feeding Silage.

1. I have a field which I intend to sow with buckwheat next summer, and as I expect to be short of pasture for the cows, I thought of sowing oats and barley in the ordinary way in the spring, and some time in June turn the cows in for a time. Would you approve of my plan?

2. Would some other kind of grain be better?

3. Would it hurt the crop of buckwheat?

4. Last November I paid a note at a certain bank and received the note. The note was for a roller, and was given to a certain company and became due in November, and, as is customary, was sent to this bank for collection. The company have been asking me ever since to call at the bank and settle.

5. About a month ago I opened a silo. At first, cattle became very loose, but since they have become accustomed to the silage they have become somewhat constipated. They are getting a few turnips.

Ans.—1, 2 and 3. We cannot see that it would be profitable to manage the field in the way we understand our correspondent's plan. We interpret his meaning to the effect that oats and barley will be sown in the spring. The cows will be pastured for a time in June, and buckwheat will be sown early in July. The oats will probably not be ready for pasturing until the tenth or fifteenth of June. To ensure a good crop of buckwheat, it should be sown during the first week of July, so one can expect only about two weeks' pasture. It will not harm the land for buckwheat, but we doubt if the plan would result profitably. We can think of no better variety of grain, however, than oats, if the plan is to be given a trial.

4. If the note has been paid, and our enquirer holds the original note as a receipt, all that is necessary for him to do, and, in fact, it is not absolutely necessary, is to inform the company to that effect. The mistake has evidently been made at the bank, and when the company and bank are acquainted with the circumstances, the matter will no doubt be adjusted satisfactorily.

5. If the cattle are getting between twenty and forty pounds of silage per day, and a few turnips, it is altogether likely that no trouble will be experienced in any way. Silage has a loosening influence, and when the animals become accustomed to it they should benefit by its laxative effects.

Spraying on Whitewash.
 Give me recipe for mixing white wash to be applied with a spray pump. I have used lime, although I mix it thick, but it does not seem to show up white when dry.
 A. J. R.

Take one-half bushel of good slaked lime and slake with water. Cover it during the night to keep in the steam. Add water to bring to the consistency of milk, and strain through a fine sieve. One-half pound or more of Spanish fly and five gallons of hot water. Application from a spray pump does not give a satisfactory coloring. Drying, the application should be made.

Cows Losing Milk.
 One of our cows commenced losing her milk at odd times, and even dried her off a couple of months ago. This year, two cows along with her, have freshened the morning when they get up quite a quantity of milk in the morning. It does not happen often; some two or three times in one week, and not again for nearly a month. What is the cause of this? We have been told it is because they are on a cement floor. They are well bedded with clean straw, in a warm stable.
 K. E. C.

The fact that the cows leak milk indicates that they have a germ which neither does it indicate that the floor has anything to do with it. If you have some heavy-milking cows which milk easily. We advise that you keep them well and milk them regularly.

Planting Pasture—Paid Note—Feeding Silage.

I have a field which I intend to plant with buckwheat next summer, and I expect to be short of pasture for the ordinary way in the spring, and time in June turn the cows in. Would you approve of my

planting some other kind of grain? Would it hurt the crop of buck-

November I paid a note at a bank and received the note. The note was for a roller, and was given to the company and became due in June, and, as is customary, was taken to the bank for collection. The bank has been asking me ever since to pay the note and settle.

At a month ago I opened a silage first, cattle became very loose, they have become accustomed to silage they have become somewhat tipsy. They are getting a little tipsy.
 PUZZLED.

2 and 3. We cannot see that the plan is profitable to manage the way we understand our corn plan. We interpret his plan as the effect that oats and barley are sown in the spring. The corn is pastured for a time in June, and the corn will probably not be pastured until the tenth or eleventh of June. To ensure a good crop of buckwheat, it should be sown the first week of July, so one can have about two weeks' pasture. It will not harm the land for buckwheat. We doubt if the plan would be profitable. We can think of no other plan is to be given a trial. The note has been paid, and our original note as a result is necessary for him to get the fact, it is not absolutely necessary to inform the company to the mistake has evidently been made at the bank, and when the bank are acquainted with the circumstances, the matter will be adjusted satisfactorily.

Cattle are getting between forty pounds of silage per acre. A few turnips, it is altogether no trouble will be experienced in silage. Silage has a loosening effect when the animals become tipsy. It they should benefit by effects.

Questions and Answers.
 Miscellaneous.

Planting Carrots for Seed—Pruning—Water Melons and Septic Tank

1. I saved six choice carrots last fall to plant for seed this year, and would like to know when and how to plant them.
2. What time of year should I prune apple trees?
3. What is the best variety of watermelon to plant in this climate?
4. Explain how to construct a septic tank.

W. M.

Ans.—1. Plant carrots two feet apart, in rows about three feet apart. This may appear rather close in the row, but at this distance the plants will, to a certain extent, support each other. When planted farther apart the heavily-seeded tops will bear down the branches. Have the ground thoroughly cultivated and loose, and place the carrots so deep that the crown will barely reach the surface.

2. Any time during the spring months will be a satisfactory season for pruning. Sunshiny days in March make very good pruning weather. Previous to that time it is rather uncomfortable working in high trees. Young trees might be conveniently pruned any time between now and June.

3. The varieties of watermelon that vegetable experts recommend for these districts are Cole's, Early, and Peerless.

4. A full treatise on the construction of a septic tank would require considerable space. The subject was fully discussed and illustrated in our issue of March 25, 1915. However, we can here give a few of the essential details in connection with the work. There should be at least two compartments in the tank, and the last compartment, where the valve is placed, should not be more than three feet, nor less than two and one-half feet deep. For every occupant of the dwelling there should be at least three cubic feet of space in each compartment, and for every cubic foot of space in one compartment, or in one half of the tank, there should be thirteen feet of four-inch field tile laid. The soil-pipe from the house carries the disposal to the first compartment. Here, through the efforts of bacteria, decomposition takes place and liquids result, which are carried over by an overflow pipe to the second compartment. In this part an automatic valve is installed, which trips at the proper time, allowing the liquid to flow off into the line of field tile. It is necessary to have the tile laid on a level, so one part of the area in which the tile is placed may not become saturated when the upper part is dry. In order to accomplish this, the tank should be so located that the bottom of the valve in the second compartment will be on a level with the main tile leading to the system of field tile. The overflow pipe which connects the two compartments should start ten or twelve inches from the bottom of the first. As a safeguard, the opening in the first compartment should be protected by a wire screen the size of a bucket, with a mesh not exceeding three-quarters of an inch. Into the second compartment at the top, a pipe should admit fresh air, which should pass freely over the partition space being left between it and the roof of the tank, and out through the soil pipe. The automatic valve is caulked into a four-inch cast-iron bend as ordinarily used by plumbers, and which is securely built into the bottom of the tank during construction. The main line of this tile connecting the valve and the system of field tile, is often constructed of sewer pipe, but in any case, ordinary field tile should be laid for laterals. All laterals may lead from one side of the main, or they may branch from the two sides. Local conditions and field levels will govern this to a large extent. The field tile should not be laid deeper than one foot from the surface, and not closer together than two feet, in light soil, and a greater distance in heavy soil. The tank itself could be constructed of brick or stone, and made impervious to water. Concrete work answers the purpose very well where care is taken to wash the surface of the walls with a cement wash and make the structure water-tight.

Lice on Cattle.

Would you kindly publish in your paper something that will destroy blue lice on cattle? I have tried several things with very little success. Young cattle are affected the worst. Do you think they stay on the cattle all summer?

R. H. P.

Ans.—Try the cement and hellebore mixture mentioned elsewhere in these columns. Some lice probably remain on the cattle the year round if remedial measures are not taken.

For Lice On Cattle.

Please publish in "The Farmer's Advocate" a cure for lice on cattle.

E. V.

Ans.—There are several preparations on the market that will rid cattle of vermin very successfully. In some stables which we have visited this winter, stockmen have claimed to have gotten good results from trimming the cattle along the back and tail and sprinkling them with sulphur. A mixture which we know to be effective, and one popular with a number of stockmen is, four parts of cement to one part hellebore. This is mixed thoroughly and sprinkled on the backs and sides of the cattle. Any small tin box or can, with a few holes punched in the top, will serve as a shaker. The cattle should not be turned out in the rain for a short time after this mixture has been applied.

Ration For Cow.

Having silage, straw, oat chop, and oil cake, what quantity should be fed to a cow to give the most milk? Would it pay to add bran?

N. F.

Ans.—A bushel, or forty pounds, of silage per day per cow is considered good average feeding of that material. Many cattle, however, will consume more than that amount. As for the oat chop and oil cake, we would advise not feeding more than two or three pounds of the latter, and making the total meal ration up to such an amount that one pound of meal will be fed for each four pounds of milk given in the cow. This is simply a guide which any dairyman may follow. It is impossible for one to state the definite amount that should be fed to individual animals. The advantage in feeding bran also would be simply to add variety to the ration. Protein would be supplied through the oil cake, and the succulency of the silage would obviate the necessity of feeding bran for any laxative effect.

Silo With Small Diameter.

I wish to thank you for the answer to my question, which appeared on page 65, in the issue of January 13, entitled "Small Silo." I should still like to know, however, the smallest diameter of silo that would be practicable, and how many cows would be needed to consume at least one inch of surface of same per day?

G. J. F.

Ans.—Our enquirer, in his former question, spoke of a silo for two cows, or large enough to hold the corn crop of one acre. A cubic foot of silage from a silo 20 feet high would average about 33.3 lbs. in weight, according to good authority. We consider that it would not be advisable to build a silo with any less height, as the weight of the corn would not be sufficient to insure a good product. Allowing cows 40 lbs. of silage each per day, the silo should be six feet in diameter so that one inch would be consumed each day from the surface and thus prevent spoilage. We would not consider a silo six feet in diameter as practicable. There is too much silage exposed to the walls in a structure of these dimensions in proportion to the total contents. To feed at least one inch per day from the surface of the contents in a silo 20 feet high and 8 feet in diameter, there should be four cows when each receives 40 lbs. per day. Four cows getting 40 lbs. per day would take slightly more than one inch, but three cows would not take the required amount. We do not care to recommend silos of these dimensions. They are not practicable from a farm viewpoint, they would be expensive, and they would not preserve the corn so well as would larger silos. A silo 10 feet in diameter is more in keeping with good farm practice, and if 20 feet high, five or six cows would be required to consume one inch from the surface each day.

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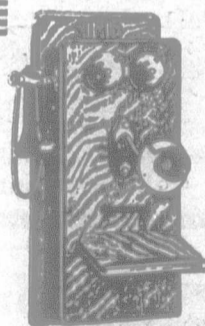
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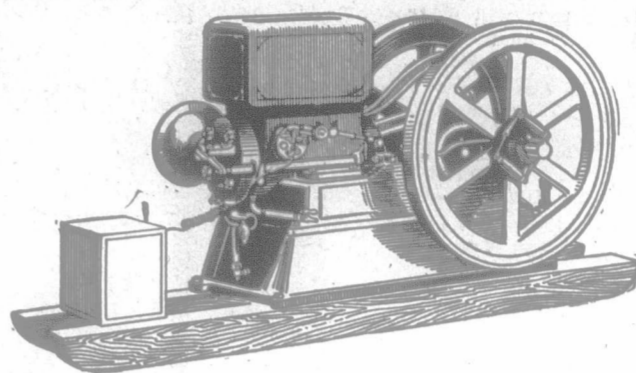
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Questions and Answers. Miscellaneous.

Abortion in the Herd.

1. Three of my cows have aborted. Does the Government allow anything for loss sustained by a contagious disease such as is in my herd?
2. Can I get any redress from the person from whose place I am sure the disease came?
3. Is hyposulphite of soda any good to combat the disease?
4. Would my bull get it, not being used yet on any of my cows?
5. Would washing his sheath with mercury tablets dissolved in water, prevent him from transmitting the disease?
6. Can anybody sue me for damages if their cows get the disease by using the bull prior to three weeks ago? I have stopped his services since.
7. Methylene blue is quoted by our druggist at \$11.25 per four ounces, wholesale, which is expensive. Would it pay to buy it at that price, or let the disease run its course and buy a new herd? None of my cows cost me more than \$102. Would average \$90 each.

D. M. W.

- Ans.—1. No.
2. We think not.
3. We have had no experience with it, but from the nature of the disease, we doubt its being of much value.
4. It is probable that the bull has not yet become infected.
5. It is well to cleanse the sheath of the bull before and after service. Corrosive sublimate would be effective, but is dangerous to use.
6. Any stockman would be innocent in a case like this if he did not know the bull was infected.
7. Such a price for methylene blue is out of the question. Unless it can be bought for about \$3 per pound, we doubt the advisability of using it. By taking every precaution regarding the disinfecting of both the stable and herd, it is possible to control the disease. An article on Contagious Abortion appeared in "The Farmer's Advocate," on page 1697, of the issue of Oct. 28, 1915. Several new ideas and opinions regarding contagious abortion were enunciated in that article, and we would refer our readers to it.

Gossip.

SHORTHORNS AT PLEASANT VIEW FARM.

Geo. Morden & Son, owners of the noted Pleasant View herd of Scotch Shorthorns at Oakville, Ont., report trade during the past year as most satisfactory. This herd is a large one, and many there are among them whose splendid thickness and balance of flesh about fill the eye. Others there are again whose good milking qualities prevent the accumulation of heavy flesh, and it is that kind that usually are the most profitable. Along tribal lines, the Nonpareils, English Ladys, Lady Brants, and Jealousys, are principally represented, the balance going back to Imp. Beauty, by Snowball, and a few are of Booth blood. The majority of the younger things are the get of that beautifully-balanced bull, Mountaineer. Others are the get of the Booth-bred bull, Royal Albert, a red four-year-old son of Imp. Prince Albert. This bull is for sale, and breeders of milking Shorthorns would be doing themselves a good turn by looking after this bull. His type is perfect for a dairy-bred Shorthorn, and he cannot fail to be a success. In younger bulls, one is a roan English Lady-bred son of Gainford Ideal, a son of Gainford Marquis (imp.). Another is a seven-months-old Beauty-bred, another a Cruickshank Nonpareil, and one that has been used to quite an extent in the herd is a red two-year-old Lady Brant-bred son of Diamond Mine. He is a nicely-fleshed bull from end to end, low-down and thick; the right kind of herd-header for any herd. There are several other young bulls, and all of them are for sale, as well as cows and heifers.

Questions and Answers.
Miscellaneous.

Abortion in the Herd.

Three of my cows have aborted. Can the Government allow anything for sustained by a contagious disease as is in my herd?
Can I get any redress from the person whose place I am sure the disease came from?
Is hyposulphite of soda any good against the disease?
Would my bull get it, not being wet on any of my cows?
Would washing his sheath with tablets dissolved in water, prevent him from transmitting the disease?
Can anybody sue me for damages if my cows get the disease by using him prior to three weeks ago? I stopped his services since.
Methylene blue is quoted by our agent at \$11.25 per four ounces, which is expensive. Would it buy it at that price, or let the run its course and buy a new one? None of my cows cost me more than \$102. Would average \$90 each.
D. M. W.

1. No.
I think not.
I have had no experience with it, but from the nature of the disease, we think being of much value.

It is probable that the bull has not become infected.
It is well to cleanse the sheath of the bull before and after service. Corrosive sublimate would be effective, but dangerous to use.

A stockman would be innocent in not knowing this if he did not know the disease.

The price for methylene blue is the question. Unless it can be had for about \$3 per pound, we do not think it advisable of using it. By every precaution regarding the disease of both the stable and herd, it is possible to control the disease. An article in the Farmer's Advocate, on page 102, the issue of Oct. 28, 1915, contains new ideas and opinions regarding contagious abortion were enunciated in that article, and we would refer our readers to it.

Gossip.

AT PLEASANT VIEW FARM.

Mr. J. H. Gordon and Son, owners of the Pleasant View herd of Scotch Friesians at Oakville, Ont., report that the past year as most satisfactory. This herd is a large one, and are among them whose splendor and balance of flesh about the eye. Others there are again of milking qualities prevent the production of heavy flesh, and it is that usually are the most desirable. Along tribal lines, the Non-English Ladies, Lady Brants, and others, are principally representative balance going back to Imp. Snowball, and a few are of the blood. The majority of the herdings are the get of that beautiful bull, Mountaineer. Others of the Booth-bred bull, Royal, and a four-year-old son of Imp. Nonpareil. This bull is for sale, and his milking Shorthorns would be a good turn by looking for a bull. His type is perfect for a Shorthorn, and he cannot be a success. In younger bulls, an English Lady-bred son of Royal, a son of Gainford Marston. Another is a seven-year-old Beauty-bred, another a Nonpareil, and one that has quite an extent in the herd of two-year-old Lady Brant-bred and Mine. He is a nicely-bred from end to end, low-down the right kind of herd-header.

70-Year Clocks

ACCORDING to Dr. Holmes, the human body is a clock wound up to run for three score years and ten, "barring accidents."

But we find that out of one hundred and twenty-seven thousand born, only thirty-eight thousand reach the age of seventy.

Eighty-nine thousand of the human clocks stop at earlier ages, only one in three surviving to hear the seventieth year ticked off.

What does this mean? That life is in the highest degree uncertain. It may fail at an age, and consequently life insurance is a practical every day necessity.

Mutual Life policies are not luxuries. They are necessities. Our life policies protect your dependents in case of your death. Our Endowments are payable to yourself should you reach old age.

The aim of the Company is to give as large an amount of protection as possible for the least possible outlay.

The Mutual Life Assurance Company of Canada
Waterloo, Ontario

Questions and Answers.
Veterinary.

Result of Nail Puncture.

Horse punctured his foot Oct. 1st. My veterinarian treated him. In about two weeks a swelling appeared under his abdomen. The veterinarian said it was blood poisoning, and has been treating him ever since, but the swelling has not all disappeared. L. D. C.

Ans.—No doubt your veterinarian understands the case, and is doing all that can be done. He is in a much better position to treat than a man who has not seen the case. It will be wise to continue treatment under his directions. V.

Skin Trouble.

I bought a pair of mares that had been in a lumber camp. Sores break out on legs, breast and navel, and sometimes they go lame. The sores do not heal, and are always very itchy. They are Clydesdale mares.

Ans.—The mares have no doubt been highly fed for several months, or probably years, and the skin trouble is a result. Purge each with 9 drams aloes and 2 drams ginger. Follow up with 2 ounces Fowler's Solution of Arsenic sprinkled on feed twice daily for a week. Then give a dessertspoonful of sulphur three times daily. Make a solution of corrosive sublimate 20 grains to a quart of water, and rub the parts well with this twice daily. V.

Miscellaneous.

Grade Stallions and the Ontario Act.

Please give a brief synopsis of the Ontario Stallion Act, especially the part dealing with grade stallions; when it comes into force, and to what districts it will apply? FARMER.

Ans.—The Ontario Stallion Act as amended by the Act of 1914, includes two clauses regarding grade stallions. They read as follows:—

"On and after the first day of August, 1916, no grade stallion having any of the diseases or malformations mentioned in the regulations passed in pursuance of this Act shall be allowed to stand, travel, or be offered for service in the Province, and, from and after that day, no fees shall be collectible for the services of such stallion."

"On and after the first day of August, 1918, no 'grade stallion' as defined in

High-Class Clydesdale Mares and Fillies

a big selection of stallions.

SMITH & RICHARDSON

Columbus, Ont.,

Myrtle, Brooklin and Oshawa Stations

Clydesdale Stallions and Mares

stallions, and mares in foal. Write or call on

JOHN A. BOAG & SON, Queensville, Ontario.

ABERDEEN ANGUS Calves Sired by Prince Bravo imp. 4503

We are offering at reasonable prices a few Bull Calves up to one year old, sired by Prince Bravo, Imp. 4503 the Champion Bull of the breed at the Canadian National Exhibition, 1914, and sire of the Grand Champion Bull 1915. These calves are out of Imported Dams. Also a few Heifers and Calves.

Come and make your own selection from a large herd. Correspondence solicited. CLYDESDALE TEAMS LARKIN FARMS QUEENSTON ONTARIO Prices Reasonable



The Maples Herefords.

For this season we are offering, without a doubt, the best bunch of young stuff we ever handled, both sexes, including our imported herd bull, 3 years old, undefeated this year, and a sure stock-getter. Prices right.

W. H. & J. S. HUNTER,

Orangeville, Ontario

ORCHARD GROVE HEREFORDS

Have several young bulls and heifers for sale. Satisfaction guaranteed.

L. O. CLIFFORD,

Oshawa, Ont.

ELM PARK FARM

Aberdeen-Angus Cattle, Suffolk Down Sheep. Present offering: Young bulls and some useful heifers and young cows, bred to our prize-winning bulls. Ram lambs from our Champion flock.

JAMES BOWMAN

Box 14

GUELPH, ONT.

MAPLE SHADE FARM SHORTHORNS

The products of this herd have been in very strong demand. There's a reason. Can always supply a good young bull at a price which will make him well worth the money. Not many females for sale but can show a few which should interest you.

W. A. DRYDEN,

Maple Shade Farm, Brooklin, Ont.

Brooklin, G. T. R., C. N. R. Myrtle, C. P. R.

Spring Valley Shorthorns

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

KYLE BROS., Drumbo Ont. Phone and Telegraph via Ayr.

Shorthorns

RICH IN BREEDING, HIGH IN QUALITY My herd of Scotch and Scotch-topped Shorthorns was never stronger in number nor in quality than now. I have the most fashionable blood of the breed in pure Scotch, as well as the greatest milking blood strains. Visit the herd. Also some right choice Yorkshires, both sexes. A. J. Howden, Myrtle, C. P. R.; Brooklin, G. T. R.; Columbus, R. M. D.

SHORTHORNS YORKSHIRES SHROPSHIRE

We have a choice selection in young shorthorn bulls. Young Yorkshires of both sexes, shearing ewes ram and ewe lambs. We aim to please by shipping quality. Write us your wants.

RICHARDSON BROS.

Columbus, Ont.

Horse Vacations Cost You Money

You have to feed your horses whether they work or not. The galled horse, the horse with a chafed, sore or bruised neck or shoulders is a constant expense. He either loaf entirely or doesn't do a full day's work.

Stop this useless waste of horse power on your farm. Pad your horses. It helps them and helps your pocket book.

A Tapatco Padded Horse Earns You Money



This pad prevents bruises, chafed spots and sores. When your horses begin to lose flesh under spring work, your collars instead of hanging loosely and chafing will fit snugly if they are Tapatco padded.

They will prevent galls and sores. You'll get more work from your horses because they'll feel more like working.

Fit Any Collar

No special adjustment necessary. Tapatco pads are padded with our own specially prepared composite stuffing. Soft, springy and very comfortable. Very porous. Ask your dealer for the Tapatco free book of emergency horse remedies.

THE AMERICAN PAD & TEXTILE CO. Chatham, Ont.

We also make a full line of riding saddle pads.

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

the said regulations shall be allowed to stand, travel, or be offered for service in the Province, and, on and after such day, no fees shall be collectible for the services thereof."

The Act applies to Ontario, and no mention is made therein that any districts are exempted.

Horses Have Worms—Horse has Cold.

1. I have eight horses, and they are all troubled with pinworms. What should I do for such?

2. I have a driving horse that has a very bad cold. Please publish a treatment for same. G. B.

Ans.—1. Pinworms lodge in the last intestine, and treatment consists in an injection per rectum that will expel them. Take 1/2 lb. of quassia chips and add 2 gallons of water in a pot. Put on the stove and fetch to a boil. Then allow to almost boil for four or five hours, adding a little water if necessary. Next strain off and add sufficient warm water to make a gallon. Inject the rectum with warm water first to remove faeces. When this is done, inject the decoction and hold the tail down for at least half an hour to prevent expulsion of the liquid. The worms, if any be present, will be expelled with the fluid when the restraining influences are removed. This treatment is for pinworms. There are worms (stomach worms) which inhabit the stomach and small intestines. They should be treated as follows: Take three ounces each of sulphate of iron, sulphate of copper, calomel, and tartar emetic. Mix and make into 24 powders. Give a powder every night and morning, and after the last one has been given, administer a purgative of 8 drams aloes and 2 drams ginger. Feed bran only for 12 hours before and 24 hours after giving the purgative, and do not work until the bowels have become normal.

2. The value of pure, fresh air, for such a case cannot be over-estimated. Blanket the horse well, and provide plenty of fresh air. Steaming is often practiced when the animal's head is badly congested. Particular attention should be paid to the diet. Give bran mash and scalded oats. If feed of this nature is not relished by the patient, provide plenty of good hay, oats, corn, etc. If the cold hangs on, mix 1/2 pound of saltpetre, 1/2 pound of sulphur, and 1/2 pound of gentian root, and give a teaspoonful morning, noon and night.

Horse Owners! Use GOMBAULT'S Caustic Balsam

A Safe, Speedy, and Positive Cure
The safest, Best BLISTERS ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FILING. Impossible to produce scar or Blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
The Lawrence-Williams Co., Toronto, Ont.

ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.
Removes Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from any Bruise or Strain; Stops Spavin Lameness. Allays pain. Does not blister, remove the hair or lay up the horse. \$2.00 a bottle, delivered. Book 1 K free.
ABSORBINE, JR., the antiseptic liniment for mankind. For Synovitis, Strains, Gouty or Rheumatic deposits, Swollen, Painful Varicose Veins. Will tell you more if you write. \$1 and \$2 per bottle at dealers or delivered. Manufactured only by W. F. YOUNG, P.D.F. 258 Lyman St., Montreal, Can.

CATTLE FATTEN QUICKER.
Dehorned cattle herd together quieter and take on flesh quicker. Their meat is tender and firmer and they bring a higher price. The KEYSTONE DEHORNER is used at the Government Agricultural Colleges. Write for booklet.
S. H. MCKENNA, 219 Robert St., Toronto.

ALLOWAY LODGE STOCK FARM Angus, Southdowns, Collies

Special this month:
Southdown Prize Rams
ROBT. McEWEN, R.R. 4, London Ont.

REGISTERED HEREFORDS FOR SALE
Have two good bulls and a few females of good breeding at very moderate prices. Write, or better, come and see them. E. W. GORSLINE, Lake View Farm, Demorestville, Ont.

Middlebrook A. Angus—For Sale are several choice prize-winning sons of my 1915 gr. champion bull, Black Abbot Prince, and his Toronto and London 1st prize 1/2 brother, also winning daughters of the same. John Lowe, Elora, Ont., R. M. D.

Aberdeen-Angus—I have a grand bunch of calves six months old, both sexes. Price very reasonable. Write:
D. M. KEAN, Orillia, Ont.

Tweedhill—Aberdeen-Angus. Choice also females. If you want anything in this line write:
James Sharp, R. R. 1, Terra Cotta, Ontario Cheltenham, C.P.R. & G.T.R.

Balmedie Aberdeen Angus
Get a high-class Angus bull and breed the champion steers. I have show-ring quality bulls from 10 to 24 mths. of age, also choice 1 and 2-year-old heifers.
T. B. BROADFOOT, FERGUS, ONT.

Aberdeen-Angus The cattle now in demand. So me choice heifers and a few young bulls from the imported sire, "Prada- mere." Apply to: A. DINSMORE, Manager "Grape Grange" Farm, Clarksburg, Ontario

1854—Maple Lodge Stock Farm—1915 SHORTHORNS AND LEICESTERS
We have now for sale one Red bull eleven months from one of our record cows. Also some younger ones, very desirable stock. Two ram lambs and four ewe lambs remain for sale. Choice ones at very moderate prices.
MISS C. SMITH, Clandeboye, R. R. 1, Ont. Lucan Crossing one mile east of farm

For Sale The Imp. Shorthorn bull Bandsman =73729=, Also 2 young bulls, a Princess Royal, and a Fair Maid.
WM. GRAINGER & SON, R.R. No. 1, Auburn, Ont. Blyth Phone 3810.

Scotch Shorthorns—Bred direct from imp. stock. Six dams, cows and heifers due to calve in March and April, at prices that will please the buyer.
L. K. WEBER, Hawkesville, Ontario

Shorthorns for sale; a few bulls one year and over, reds and roans. Choice quality with first-class pedigree. Write for particulars at once. N. A. McFarlane, R. No. 2, Dutton, Ont. Elgin Co.

Shorthorns and 40 females. Shropshire and Cotswold ewes for sale at prices within the reach of all.

10 Shorthorn Bulls and 40 females. Shropshire and Cotswold ewes for sale at prices within the reach of all.

OAKLAND SHORTHORNS 67 males and females (milk strains) grand choice of bulls from \$125 to \$175. Young cows and heifers from \$100 to \$200, nearly all sired by one of Ontario's best bulls (still at head of herd). All good individuals. Write or come and see JOHN ELDER & SONS, HENSALL, ONT.

Woodholme Shorthorns For Sale—Four bulls sired by imp. Lord Gordon, fit to head good herds, and a number of cheap bulls for graded herds. Also a few good heifers in nice condition that I can sell worth the money. Mail orders filled with greatest care. Write your wants.
G. M. FORSYTH, Clarendon, Ontario

SHORTHORNS AND SHIRES
For Sale—a few choice young bulls, cows and heifers, of high-class quality, choice breeding and from splendid milking dams. Also two young stallions and a few mares and fillies. Prices reasonable.
JOHN GARDHOUSE & SONS, Weston, Ont. C.P.R., G.T.R. & Electric Railway L-D Phone.

Herd Books Recently Published.

The sixty-first volume of Coates' Herdbook is one of those recently received at this office. This volume records bulls numbering from 123759 to 128995, and cows to December 31, 1914. In addition to the excellent index system embodied in the volume is a resume of what previous volumes contain. Applications for the Herdbook, or any particulars respecting the work, should be addressed to the Secretary, Shorthorn Society of Great Britain and Ireland, 12 Hanover Square, London, W., (Eng.).

The Holstein-Friesian Association of America have published their thirty-third Herdbook, and a copy has been received at this office through the courtesy of the Secretary and Editor, Frederick L. Houghton, Battleboro, Vermont. The mention of bulls from 132640 to 155860 is found within its covers, and cows numbering from 239855 to 278175, are also included. This is compiled up to May 1, 1915, but it includes a report of the Annual Meeting held on June 2, 1915, besides much other interesting reading. Requests for the volume or any particulars, should be addressed to the Secretary.

Volume 25 of the Dominion Swine Breeders' Record is now ready for distribution. It was edited and compiled in the office of the Canadian National Live Stock Records, Ottawa, and includes such breeds as Yorkshires, Berkshires, Chester Whites, Tamworths, Hampshires, Poland Chinas, and Duroc Jerseys. Rules of entry, pedigrees, animal index, and breeders and owners index, are all to be found within the covers of Volume 25. Address correspondence to Accountant, National Live Stock Records, Ottawa.

The Holstein-Friesian Association of Canada have placed in circulation Volume 18 of the Herdbook, and in it are the records of bulls numbering from 18426 to 21840; also cows numbering from 27401 to 32520. The list of officers, members, animals, constitution and by-laws are all excellently set forth in good, clear type. The work was edited and compiled by W. A. Clemons, St. George, Ont., Secretary-Treasurer of the Association, to whom applications for copies should be addressed.

The Canadian Hereford Herdbook, Volume 8, has been issued from the press, and a copy received at this office. Pedigrees from 15101 to 19150 are included. The volume was edited and compiled in the office of the Canadian National Live Stock Records, Ottawa, by the Registrar, A. R. Dawson. In addition to the pedigrees recorded, there is much useful and interesting information for Hereford breeders included in this work. Address correspondence to Accountant, National Live Stock Records, Ottawa.

Gossip.

R. M. Holtby, of Port Perry, writes "The Farmer's Advocate" that he has sold the bull with 29-lb. breeding, advertised in these columns, to Howard E. Tarrant, Wolfe Island.

Again we wish to remind you, that the Great Annual Sale of Shorthorns, is announced for February 2 at the Union Stock Yards in Toronto. Good breeders who have for many years been in the business in Canada, are furnishing the cattle, they cannot afford to lower the standard of the cattle that go in this sale, and we are assured that this lot is strong as ever, in both quality and breeding. Every animal has been sold in former sales; they will be sold this time, and some of them will sell at splendid value, they always do in a big sale like this. Catalogues are ready and many of them mailed, if there is time for you to get one, write to Robt. Miller, Stouffville, Ont., if not you are safe to go to the sale, the day after the Annual Shorthorn Meeting.

An Even Match.—"Here comes Blinkers. He's got a new baby, and he'll talk us to death."
"Well, here comes a neighbor of mine who has a new setter dog. Let's introduce them and leave them to their fate."—Life.

GREAT AUCTION SALE

45 Head of Scotch Shorthorns 45

By Public Auction without reserve on
Friday, at 1 p. m., February 18th, 1916

AT UNION STOCK YARDS, WEST TORONTO, ONT.

Having recently purchased the entire herd of Shorthorns from Mr. John Milton, of Brantford, Ont. I have decided to sell, without reserve, a number of these animals, and a selection from the Rosedale Farm herd. The offering includes four imp. cows and one imp. bull, and many from imp. sire and dams of the best families obtainable. A number of these were bred by H. Cargill & Son, Cargill, Ont.

THERE ARE 15 BULLS AND 30 FEMALES

cows in calf and cows with calves at foot, together with a choice lot of young heifers and bulls. These animals are in good breeding condition, and not specially fitted for a sale, but there are some show animals of high order. There will be one of the best young bull calves, sired by the great champion and sire of champions, Gainford Marquis, and also the dam of this calf, being one of the best cows offered to the public in recent years. Also heifers by such well-known show and breeding bulls as "Browdale" and "Frout Creek Wonder." This will be a great opportunity to secure a show animal, a herd header, some money makers or foundation stock.

Write for catalogue.

J. K. McEwen } Auctioneers J. M. Gardhouse, Weston, Ont.
Capt. T. E. Robson }

Ontario Corn Exhibition

CURLING RINK, CHATHAM

February 1, 2, 3, 4, 1916

\$2,500.00 PAID IN PRIZE MONEY

Reduced Rates on all railroads. Entries close Jan. 29th.
Prof. R. A. Moore, Wisconsin, Judge.

For prize list and further particulars, write Secretary.

R. W. KNISTER, President
Comber, Ont.

J. W. NOBLE, Sec.
Essex, Ont.

Escana Farm Shorthorns

For Sale—15 bulls 8 to 14 months old, several of them prize-winners at Toronto and London, sired by the noted imported bulls Right Sort and Raphael. Also for sale—20 heifers and cows of choice pedigree and prices. Mail orders a specialty, satisfaction guaranteed.
MITCHELL BROS., Burlington P.O., Ontario
Jos. McCrudden, Manager. Farm 1/4 mile from Burlington Jct.

SHORTHORNS AND CLYDESDALES

10 Bulls serviceable age, all good ones (some herd headers) and are offering females of all ages. Have a choice lot of heifers bred to Clansman =87809=; also four choice fillies all from imported stock A. B. & T. W. DOUGLAS Long-Distance Phone STRATHROY, ONTARIO

GLENGOW SHORTHORNS AND COTSWOLDS
Pure Scotch in breeding, we have an exceptionally choice lot of bulls for this season's trade, ranging in age from 8 to 15 months; big mellow fellows and bred in the purple. Also Ram and Ewe lambs of first quality.
Wm. Smith & Son, Columbus, Ont. Myrtle C.P.R., Brooklin, G.T.R., Oshawa, C.N.R.

H. SMITH HAY P. O., ONT.

21 SHORTHORN BULLS and as many heifers for sale. Write your wants.
You know the Harry Smith Standard.

The Salem Shorthorns

J. A. WATT, ELORA, ONT.

10 Shorthorn Bulls

JOHN MILLER, Ashburn, Ont. Myrtle Sta., C.P.R. & G.T.R.

OAKLAND SHORTHORNS

For Sale—Four bulls sired by imp. Lord Gordon, fit to head good herds, and a number of cheap bulls for graded herds. Also a few good heifers in nice condition that I can sell worth the money. Mail orders filled with greatest care. Write your wants.
G. M. FORSYTH, Clarendon, Ontario

SHORTHORNS AND SHIRES

For Sale—a few choice young bulls, cows and heifers, of high-class quality, choice breeding and from splendid milking dams. Also two young stallions and a few mares and fillies. Prices reasonable.
JOHN GARDHOUSE & SONS, Weston, Ont. C.P.R., G.T.R. & Electric Railway L-D Phone.

Mention Advocate.

ION SALE

Shorthorns 45

reserve on
y 18th, 1916
ST TORONTO, ONT.

of Shorthorns from Mr. John
sell, without reserve, a num-
the Rosedale Farm herd. The
bull, and many from imp. sire
number of these were bred by
l, Ont.

ND 30 FEMALES

together with a choice lot of
good breeding condition, and
e show animals of high order.
sired by the great champion
nd also the dam of this calf,
public in recent years. Also
bulls as "Browndale" and
opportunity to secure a show
foundation stock.

house, Weston, Ont.

Exhibition

ATHAM
4, 1916

IZE MONEY

ries close Jan. 29th.
sin, Judge.

s, write Secretary.
J. W. NOBLE, Sec.
Essex, Ont.

Shorthorns

ers at Toronto and London, sired by
sale—20 heifers and cows of choice
our wants and we will send copy of
ated.

Burlington P.O., Ontario
om Burlington Jct.

YDESDALES

re offering females of all ages. Have
ice fillies all from imported stock
STRATHROY, ONTARIO

AND COTSWOLDS

choice lot of bulls for this season's
ow fellows and bred in the purple.

, Brooklin, G.T.R., Oshawa, C.N.R.

. O., ONT.

for sale. Write your wants.
standard.

of the largest collections of Scotch
horns in America. Can suit you
her sex, at prices you can afford
y.

NT.

40 females. Shropshire and Cots-
ewes for sale at prices within the
of all.

Sta., C.P.R. & G.T.R.

ilk strains) grand choice of bulls
ng cows and heifers from \$100 to
e of Ontario's best bulls (still at
individuals. Write or come and see
HENSALL, ONT-

by imp. Lord Gordon, fit to head
of cheap bulls for graded herds,
ndition that I can sell worth the

SYTH, Claremont, Ontario

IRES

quality, choice breeding and from
s and fillies. Prices reasonable.
& Electric Railway L-D Phone.

Gossip.

LAKEVIEW HOLSTEINS.

In the foundation of a herd of pure-
bred cattle too much attention cannot be
given to the ancestral history of the
animals selected, whether it be for beef
or milk production, for with proper care
and feeding the history will surely re-
peat itself. This was the cardinal prin-
ciple that actuated E. F. Osler, of
Bronte, Ont., when selecting the founda-
tion for his now famous Lakeview herd
of high-testing and high-producing Hol-
steins. Knowing as he did that the
influence of the sire used was more than
half the influence on the offspring, he
spared no expense when selecting his
herd-headers. First, was the intensely-
bred Count Hengerveld Fayne De Kol, a
brother to the ex-world's champion,
Grace Fayne 2nd's Homestead. Then,
on his daughters, was used Dutchland
Colantha Sir Mona, whose sire's dam's
milk and butter records for the year
have only been equalled by three
cows in the world. She is the only cow
in the world that has ever held all the
world's records in every division, from
one day to one year. This bull is also
a brother to the world's champion
junior two-year-old and the world's cham-
pion junior three-year-old. Again, to his
daughters, is being bred King Canary
Segis, a grandson of King of the
Pontiacs, and out of the Canadian cham-
pion three-year-old thirty-day butter
cow. Mention of some of the founda-
tion cows at this stage will give a bet-
ter knowledge of the grand results at-
tained. Queen Inka De Kol, as a junior
four-year-old, made in seven days 27.53
lbs., which for three years was the Cana-
dian record for the age. Then, eight
months after calving, in another test,
she made within a fraction of 21 lbs.;
a world's record for that period. Her
R. O. P. test is 24,277 lbs. milk and
1,013 lbs. butter. Pet Canary Countess
2nd, as a three-year-old, made in thirty
days 2,273 lbs. milk and 110 lbs. but-
ter, and eight months after calving made
311.9 lbs. milk and 17.55 lbs. butter.
Lakeview Rattler, as a junior four-year-
old, in thirty days, made 2,645 lbs. milk
and 101.2 lbs. butter. This year, in a
seven-day test, she made 28.10 lbs. but-
ter, and eight months after calving she
made a fourteen-day test of 666.9 lbs.
milk and 32.27 lbs. butter. Following
on to a thirty-day test she made 1,409.7
lbs. milk and 61.20 lbs. butter. Both
these latter records are Canadian cham-
pion records. Emma Pauline De Kol, as
a junior four-year-old, made in seven
days 567.6 lbs. milk and 26.66 lbs. but-
ter, and in thirty days 2,553.5 lbs. milk
and 106.33 lbs. butter. Lakeview Daisy,
in seven days, made 696 lbs. milk and
28.30 lbs. of butter, and in thirty days,
2,924 lbs. milk and 114.14 lbs. butter.
G. & B. Calamity Wayne Rose was the
1913 Canadian champion junior three-
year-old, making in thirty days 1,964.5
lbs. milk and 100.47 lbs. butter. The
results of the crossing of the bulls men-
tioned above with such cows as these,
and their daughters, are two-year-old
heifers at first calving making records
ranging from 18.16 to 21.05 lbs. in seven
days. To attain such results requires
the most careful attention to selection
and development, and certainly should be
of vital importance to breeders wanting
new blood. In the several young bulls
and heifers for sale is this kind of pro-
ducing blood:

Trade Topic.

HARD-WOOD FLOORS FOR FARM HOUSES.

It is necessary no longer to conceal or
cover soft-wood floors with carpets.
Hard-wood floors can be laid in the old
house as easily as in the new one. Any
man, handy with a hammer, can lay
them on top of the old, soft-wood floor.
Maple, birch or oak floors can be laid
during the slack season, and the house
will be bright and cheery before spring.
Write for "Beaver Brand" Hard-wood
Flooring Booklet, A-1, to the Seaman
Kent Co., Ltd., either at Meaford, Ont.,
or Fort Wilham, Ont., where their two
factories are situated. See their adver-
tisement in this issue.

At Last—A Barn of Definite Strength

AT LAST—a barn that brings you unyielding strength just at the points you need it most. Naturally, you look for strength in steel barn construction. There are other essentials of course. But just as you need four wheels to a cart, so you want definite strength at every point where strain is greatest.

PEDLAR'S STEEL BRACE BARN

are making history in the Canadian farming world. They have set aside, for all time, the day of heavy wooden beams and posts. They have made unnecessary the loss of space from steel posts jutting far out from the walls, or projecting to the hips. They bring to the farmer of to-day the barn of to-morrow. They bring him ALL the room—ALL the strength—ALL the protection and convenience the science of steel construction has evolved.

PEDLAR'S Steel Brace "Wardle Patent"

See for yourself the clear, open space and greater roominess in all parts of the Pedlar Barn, made possible by Pedlar's Steel Brace "Wardle Patent"—not a new idea, but a brace that has proved its value through the test of ten years' usage. Notice how it sets up close to every post, entirely out of the way.

Double Hip and Ridge Braces Lock Each Separate Rafter

Safety in steel construction rests on a positive hold at the ridge and hip. So at these points in the Pedlar Barn you will find a double set of steel braces on each separate rafter. Think of it!—Each Separate Rafter. These powerful braces, placed right at the points of strain, mean as much to you as a solid steel beam from wall to ridge—and without excessive cost. No wonder the Pedlar Barn is stronger! No wonder you can expect to find it as firm and rigid fifty years from now as it is to-day!

An Advantage you Have Never Been Offered Before

An advantage found only in Pedlar's Steel Brace "Wardle Patent" Barn is the fact that you can operate your hayfork in the ridge or in either of the hips. An exclusive convenience that points still further to the scientific thoughtfulness called forth in Pedlar construction.

Tear Off and Mail the Coupon Now

THE PEDLAR PEOPLE, Limited, Oshawa, Ont. L. F.
Send me, without delay, Plans, Working Drawings and Cost Complete, of a Pedlar Steel Brace "Wardle Patent" Barn. It is understood this will put me under no obligation to you whatever.

Size of barn Name _____
x Address _____
Height of post ft. _____

THE PEDLAR PEOPLE, Limited
(Established 1861)
Executive Office & Factories: Oshawa, Ont.
Branches: Montreal, Ottawa, Toronto,
London, Winnipeg.

20 IMPORTED BULLS

These imported bulls, along with 10 home bred bulls may now be seen at our farms. There are some choice ones among them. We also imported four cows and a heifer, all of which are forward in calf. An invitation is extended to anyone interested in this class of stock to visit us at any time. Correspondence will receive our most careful attention.

Burlington Jct. G. T. R.
Burlington phone or telegraph.

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

Robert Miller Still Pays the Freight—And he is offering in Shorthorns some of the best young bulls and heifers that can be produced. Young bulls fit for service, some younger still; heifers fit for service and younger, and some in calf. They are of the best Scotch families, and some of them from great milking families. They are in good condition and made right, just what you want to make a proper foundation for a good herd, and suitable to improve any herd in the land. They will be priced so that you can afford to buy, if you will tell me what you want. Our business has been established 79 years, and still it grows. There is a reason.

SHORTHORNS OF SHOW-RING QUALITY

from the famous sire, Mildreds Royal, Sr. Calves, Matchless and Emmelines, they are all of showing calibre.

GEO. GIER & SON, R.M.D. WALDEMAR, ONT., P.O. AND STATION

PLEASANT VALLEY FARM SHORTHORNS

Your opportunity to buy a good shorthorn bull as a herd header or to raise better steers is right now. We have ten good ones for either purpose by imp. Loyal Scot, also several cows and heifers. Write us before buying. GEO. AMOS & SONS, Moffat Station, Ont., C.P.R. (11 miles east of Guelph.)

SHORTHORNS and SHROPSHIRE

With 125 head to select from, we can supply young cows in calf, heifers from calves up and young bulls from 9 to 18 mos. of age, richly bred and well fleshed. In Shropshires we have a large number of ram and ewe lambs by a Toronto 1st prize ram, a high-class lot.

Lynnore Stock Farm

Imported Dairy Shorthorn Stock. Im-
ported English Berkshires, Young
pigs now on hand for sale.

F. W. Cockshutt, Brantford, Ont.

Shorthorns

high class young bulls from 7 to
18 months, 15 young cows and
heifers, straight, smooth big kinds of choicest breed-
ing including several families that have produced
dairy test winners. I never was in a better position
to supply you with a good young bull at a more
reasonable price. Write me or come and see
them.

Stewart M. Graham
Long distance Phone, Lindsay, Ont.

Shorthorns—bulls, females, reds, roans, size, quality. Breeding milkers over 40 years. Cows milking 50 lbs. a day. Big, fleshy cows that will nurse calves right. Prices easy, write: Thomas Graham, R. R. 3, Port Perry, Ont.

FLETCHER'S SHORTHORNS

Our herd of pure Scotch Shorthorns are mostly direct from imp. stock. Three very choice bulls for sale, also females. GEO. D. FLETCHER, R. R. 1, Erin, Ont. L.-D. Phone, Erin Sta. C.P.R.

SEAFOAM ELECTRIC



ITS ADAPTABILITY

There is no combination power washer and wringer on the market that adapts itself to such varied conditions in the home. Whether you are in the city or on a farm, you can use your Seafoam. It is designed to be operated by gas, gasoline, steam engine, electric or wind mill power. Full information on request.

Cumner-Dowdell, Ltd.
Hamilton, Ont. 20-14

MADE IN CANADA.

Boo Spavin

Cure the lameness and remove the hunch without scarring the horse—the hunch part looking just as it did before the hunch came.

FLEMING'S SPAVIN CURE (Liquid) is a special remedy for soft and semi-solid bladders—Big Spavin, Thoroughpin, Splint, Curb, Capped Hock, etc. It is neither a liniment nor a simple blister, but a remedy unlike any other—doesn't irritate and can't be imitated. 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, Ont.

Do Not Forget

The Important Dispersion Sale (as announced last issue) of

Holsteins, Jerseys, Etc.
Thursday, February 10th, 1916

PROPERTY OF
C. E. TREBILCOCK, R. R. No. 6,
London Ont.
T. MERRIT MOORE, Auctioneer,
Springfield, Ont.

See full announcement again next week.

HOLSTEINS

Two bulls over a year old, three more fit for service. Two grandsons of "Rag Apple Korndyke 8th" (May), and several sons of "King Segis Pontiac Duplicate," one of the best.

R. M. Holtby, R. R. 4, Port Perry, Ont.

Insist on "GOOD LUCK" Brand COTTON SEED MEAL

41 to 48 per cent. Protein
IT MAKES RICH MILK
Write for feeding directions and prices to
Crampsey & Kelly Dovercourt Road Toronto

Lakeside Ayrshires

A few young bulls for sale from Record of Performance dams, imported and Canadian-bred, sired by Auchinbrain Sea Foam (Imp.) 35758, grand champion at both Quebec and Sherbrooke. Write for Catalogue.
GEO. H. MONTGOMERY, Proprietor
Dominion Express Bldg. Montreal, Que.
D. McArthur, Mgr., Phillipsburg, Que.

STOCKWOOD AYRSHIRES
Sired by my royally bred and prizewinning bull, Whitehall King of Hearts, Imp., for sale are, in calf heifers and young bulls, out of Imp. and big producing cows.
D. M. Watt, St. Louis St. P. O., Quebec

High-Class Ayrshires If you are richly-bred young bull out of a 50-lb.-a-day and over cow, imported or Canadian-bred dam or sire, write me. Females all ages. Prices are easy.
D. A. MacFARLANE, KELSO, QUEBEC

Aid to Agricultural Colleges and Schools.

The grants under The Agricultural Instruction Act, being supplemental to those from Provincial and other sources, make many things possible that otherwise would be considered impracticable by reason of the expense involved. In particular are they valuable in the prosecution of the higher education in agriculture. By the help of these grants, not only are agricultural colleges and schools made more efficient in equipment, but it is made possible to pay men of first-class information and experience salaries becoming to their station. Further, graduates who have passed with honors, and obtained degrees in our own colleges and universities, are induced to stay in their own country rather than to go abroad in search of remuneration to which their ability entitles them. Indeed, several good men have already been repatriated, and have accepted lucrative engagements in the land of their birth. How far the funds are being used in this direction is indicated by the following appropriations made from their allotments for 1915-16 by the different Provinces immediately for schools and colleges, apart from extension work, short courses, demonstrations, etc.:

Prince Edward Island.....	\$10,050
Nova Scotia.....	27,500
New Brunswick.....	16,500
Quebec.....	60,000
Ontario.....	93,813
Saskatchewan.....	22,800
Alberta.....	38,000

Manitoba and British Columbia apply portions of the fund in a similar way, but through the public, normal and high schools, and thus the grants appear under another heading than agricultural schools and agricultural colleges.

Gossip.

BRAMPTON JERSEYS.

The 300 head that now make up the Canadian champion Jersey herd of B. H. Bull & Son, of Brampton, Ont., are certainly good to look upon. Whether it was exceptionally good judgment, or simply luck, that prompted the Messrs. Bull to purchase Bright Prince (imp.) as chief sire in service we do not know, but it was certainly a most fortunate purchase. He is not only a sire of showing calibre, but a sire of remarkable producing ability. Here are a few of his daughters sired on the Island and imported by the Messrs. Bull: Osaba (imp.), at four years, made 10,009 lbs. milk and 478 lbs. butter-fat; Brampton Bright Kathleen (imp.), junior two-year-old, made 9,295 lbs. milk and 442 lbs. of butter-fat; Brampton Bright Betty (imp.), three years old, made 9,709 lbs. milk and 550 lbs. butter-fat; Brampton Bright Princess (imp.), junior two-year-old, made 7,714 lbs. milk and 395 lbs. butter-fat; Bright Draconis (imp.) last year, as a four-year-old, won the breed's dairy test at Guelph, with the highest test ever made by a Jersey cow. Her yearly milk was 11,951 lbs., and her day's milk 55 lbs; butter-fat test, 5.02 per cent. The Canadian-bred daughters of this bull are just now coming to milk and give great promise. On his daughters is being used the three-times Toronto champion, Sultan's Rolla (imp.). A still higher standard of showing merit must result from this cross. Among the younger things are 125 heifers under one year of age. Certainly the best lot ever seen in these famous Jersey stables. Among the dozens of young bulls are a number imported in dam, a number of others are sons of Bright Prince (imp.), and a lot of Official Record dams. The Messrs. Bull report 1915 as a record year for sales, and they intend making another importation in the spring.

Finding a lady reading "Twelfth Night," a facetious doctor asked, "When Shakespeare wrote about 'Patience on a monument,' did he mean doctors' patients?" "No," said the lady, "you find them under the monuments, not on them."

Schoolmistress—"Well, Freddie, dear, what did you learn yesterday?"
New Boy (after deep thought)—"You ought to know—you taught me."

Hardwood Floors for Farm Houses

If your house has been up for years, that is no reason why you should not have the modern conveniences. Carpets were formerly the only way of covering softwood floors, but they have now given way to the simple, bright Hardwood Floors, which can be put in the old house as easily as in the new one. Any man handy with a hammer can lay them.

Why not put in Maple, Birch or Oak Floors during the quiet season—have the house bright and cheery before spring. There'll be no further house cleaning time—a clean house all the year around.

Costs less than carpet all laid and finished in any farm house any where in Canada. May we prove it?

Write for "BEAVER BRAND" Hardwood Flooring Booklet, A-1.
THE SEAMAN, KENT CO., LIMITED
Eastern Factory—MEAFORD, ONT.
Western Factory—FORT WILLIAM, ONT.
Flooring delivered to any point in Canada.

RIVERSIDE HOLSTEINS

Herd headed by King Johanna Pontiac Korndyke, a grandson of Pontiac Korndyke, and a brother of Pontiac Lady Korndyke, 38.02 lbs. butter in 7 days, 156.92 lbs. in 30 days—world's record when made.

J. W. Richardson, R. R. No. 2, Caledonia, Ontario

HOLSTEIN CATTLE

Canary Mercedes Pierte Hartog 7th heads our herd. His dam gave 116 lbs. milk in one day and 6,197 in sixty days and made 34.60 lbs. butter in 7 days. There are more cows in our herd giving over one hundred lbs. of milk a day than any other in Ontario. We have both bulls and heifers for sale.

D. C. FLATT & SON, R. R. No. 2, HAMILTON, ONTARIO
Long-Distance Telephone

Ourvillia Holstein Herd If you are starting a herd, or wanting to improve one, look at these young sires for sale, from Homestead Susie Ormsby, 22.14 at three years; Homestead Helon Abbecker, at three years 26.02; Ourvillia Calamity Also come and make a selection in choice females from our herd of 100 head.
LAIDLAW BROS., Aylmer, Ont.

HOLSTEIN CATTLE Pure-bred cows, heifers and heifer calves. 66 HEAD MUST BE SOLD, having disposed of my two stock farms. Come and make your selection. Price and terms to suit. Cattle will be in good working shape, not forced or fitted for sale purposes.
HAMILTON FARMS, Telegraph and Phone Niagara Falls. Farm 10 minutes trolley from Niagara Falls. **SOUTHEND P.O., ONT.**

Clover Bar Holsteins My special offering just now are some choice young bulls Ormsby, whose dam has 3-30 lb. sister, and a 24 lb. 4-year-old and a 21.06 lb. 3-year-old daughter, and his sire was the great Sir Admiral Ormsby. Also a few females.
PETER SMITH, R. R. No. 3, Stratford, Ont. Stratford or Sebringville, Stations.

Lakeview Stock Farm Bronte, Ont. BREEDERS OF HIGH TESTING HOLSTEIN-FRIESIAN CATTLE OFFER FOR SALE A FOUNDATION HERD consisting of 1 male and 3 females all bred in the purple and backed by officially tested dams. Terms to suit purchasers.
T. A. DAWSON, Manager

Evergreen Stock Farm—REGISTERED HOLSTEINS Present offering: Several bull and heifer calves, also a few yearling heifers bred and ready to breed. Write for prices and descriptions Bell 'phone.
A. E. Hulet, Norwich, Ont.

QUEEN CITY HOLSTEINS Present Offering is 10 young bulls, from 6 to 14 months of age, the records of whose dams, Hengerveld Segis, and her full sister, range from 28 to 32 lbs. They are sons of King Lyons
R. F. HICKS Newtonbrook, Ont. On T. & Y. Railroad Line

Cloverlea Dairy Farm offers for sale a choice 23 lb. bull ready for immediate service. Write us for price and particulars. We have also a limited number of choice young bulls from our herd Sire Pontiac Norine Korndyke, from R. O. M. dams which will be priced right. L. D. Phone.
GRIESBACH BROS., Collingwood, Ontario.

For Sale---Sons of King Segis Walker From high-testing dams of Pontiac Korndyke. Photo and pedigree sent on application.
A. A. FAREWELL OSHAWA, ONTARIO

30-lb. Bred Holsteins 30-lb. The home of Sir Segis De Kol Korndyke, who is the sire of the 4-yr-old, 40-lb. cow, dam, Sadie Cornucopia Mignone, who has two 30-lb. records. We have some of his bull calves for sale out of cows with records up to 28 lbs. Write for extended pedigrees or come to see them. D. B. Tracy, Cobourg, Ont.

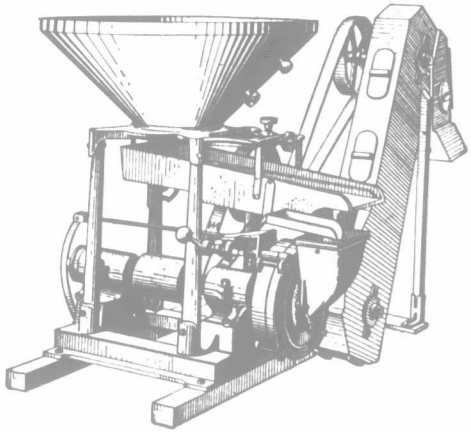
QUALITY AND PRODUCTION are combined in the dams of the young bulls all ages for sale.
M. L. HALEY SPRINGFORD, ONT. **M. H. HALEY**

HOSPITAL FOR INSANE, Hamilton, Ont. For Sale—Holstein Bulls, months from Record of Performance or Record of Merit dams, varying in age from 1 to 11 Wayne Dekol, grandson of Pontiac Korndyke, or Lakeview Dughland Le Strange, a grandson of Count Hengerveld Fayne Dekol. Prices right. APPLY TO SUPERINTENDENT.

CITY VIEW AYRSHIRES Every cow qualified in Record of Performance with an average of 4.5 per cent. fat. Do you want a young bull from one of them? All ages up to 18 months. Write:
JAMES BEGG & SON R. R. 1, St. Thomas, Ont.

Please Mention "Farmer's Advocate"

McCormick



of all compliments is being paid to grinding plates—imitations are now... We appreciate the compliment, and our customers will appreciate the... to protect our customers as well as... to mark every genuine Vessot grinding... "SV" showing plainly in the face of the... It will, therefore, be easy for you, hereafter, to be sure you are using a Vessot feed grinder. If it's there, you are buying a plate guaranteed to be guaranteed when you bought it. We guarantee the performance of Vessot grinders unless gen-

the genuine Vessot plate will do better work when driven by the steady power of a Mogul than when you are not fully informed on the... of feed grinder, with its two sieve spout and... they are imitated, and with the kerosene-Mogul engine, see the McCormick local agent, nearest branch house. It will pay you.

Harvester Company of Canada, Ltd.
BRANCH HOUSES
Edmonton, Estevan, Hamilton, Lethbridge,
Regina, St. John, Winnipeg, Yorkton

TRADE YOU WANT—WE CAN SUPPLY IT

Quality Cotton Seed Meal
(NUT AND PEA SIZE) COTTON SEED HULLS
@ CO., Inc., Memphis, Tenn.
Quarters for Cotton Seed Products
GOOD FOR

...d., Distributors, West Toronto, Ont.

Large English Berkshires!
ready for service; younger stock, both sexes, pairs not akin.
J. Lang, Burketon, Ont. R. R. 3.

ES Our offering never better. Champion hog winner of 12 firsts, 5 championships, 2 years showing, still at the head. Boars and sows all ages, same breeding as... at Toronto in 1915.

WOODVILLE, ONT.
...ck Farm—Shorthorns and Leicester Sheep
...ew choice heifers and bulls from good milking families, in... lot we ever offered in shearlings and ram lambs and ewe and... e imported rams.
R. R. No. 2 Caledonia, Ont.

SWINE, JERSEY CATTLE
...y desired age, bred from winners and champions for gener... cows in calf, and young bulls, high in quality and high in... MAC, CAMPBELL & SONS, Northwood Ont.

My Berkshires for many years have won the leading prizes at Toronto, London and Guelph. Highcleres and Sallys, the best strain of the breed, both sexes, any age.
R. R. No. 1, STRATFORD, ONT.
Shakespeare Station, G. T. R.

...d Shorthorns Boars ready for service. Sows due to farrow, others bred and ready to... Descendants of imp. and championship stock. Several... s, recently dropped: grand milking strain, 2 bulls, 5 and 8...
ARIO Long-Distance Telephone

LARGE ENGLISH BERKSHIRES
...n of sows, together with the stock boar, Suddon Torredor, ...ng stock, all ages. Satisfaction and safe delivery guaranteed. ...der and Importer, R. R. 1, Brantford, Ontario
...ation on Brantford and Hamilton Radial.

PIRES We are offering a choice lot of young sows in pig, also young sows and boars of various ages. Our Yorkshires are the quick maturing kind.
J. E. BRETHOUR & NEPHEWS, Burford, Ont.

Clover Seeds

(Government Standard)

	Per Bus.
No. 1 Red Clover.....	\$17.00
No. 2 Red Clover.....	16.00
No. 1 Alsike.....	13.00
No. 2 Alsike.....	12.00
No. 1 Alfalfa.....	16.00
(Northern grown)	
No. 2 Timothy.....	5.50
(This seed grades No. 1 Purity).	
No. 3 Timothy.....	5.00
White Blossom Sweet Clover..	14.00

Terms cash with order. Bags extra at 25c. each. On all orders east of Manitoba of \$25 or over we pay the freight.

We guarantee seeds to satisfy or ship back at our expense. Ask for samples if necessary.

TODD & COOK
Seed Merchants
Stouffville Ontario



made of carefully selected fabrics—woven to order and chosen for their wear-resisting qualities. They are perfect fitting—made in all sizes—being made for the oversize man as well as the average man.
They are made to fit men and boys of all sizes, and to give perfect satisfaction or money refunded. If you are over weight or size ask your Dealer for the "Big Deacon" shirt.

DEACON SHIRT COMPANY
BELLEVILLE - CANADA 1

RAW FURS

We are in the market to pay the very best prices. Honest assortments and prompt returns assured. Write for free price list NOW.

NORTHERN RAW FUR CO.
77 Front St. E., Toronto

We give free, one bottle of our Northern Brand Animal Attractor with every shipment of \$10.00 or over.

HIGHEST PRICES PAID FOR
FURS - HIDES - WOOL
PRICE LIST, SPORTSMEN'S CATALOG AND TRAPPERS GUIDE, FREE FOR THE ASKING
JOHN HALLAM, LIMITED
NO. 3 HALLAM BUILDING - TORONTO

RAW FURS
Highest cash price paid for raw furs. Old cost in trade. Write for price list and tags—FREE.
C. H. ROGERS, WALKERTON, ONT.

Ear Tags
FOR STOCK
Tag your stock—best and cheapest means of identification for Hogs, Sheep and Cattle. Name, address and number stamped on tags. Catalog and samples free on request.
P. S. Burch & Co., 172 W. Huron St. Chicago

PATENTS AND LEGAL
FREDERICKSON & CO., PATENTERS
The Old Established Firm, Head Office: 100 King Building, Toronto, and 5 Elgin St., and other principal cities.

Gossip.

Have you heard of the great auction sale of Scotch Shorthorns to be held on February 18? On that day, at the Union Stock Yards, West Toronto, J. M. Gardhouse will sell by auction, without reserve, 45 head, and among them are four imported cows, one imported bull, and many from imported sires and dams of the best families obtainable. Individuals from the famous herds of H. Cargill & Son and John Milton, will be offered. Mr. Gardhouse purchased the entire herd from the latter-mentioned breeder just recently, while the Cargill herd was bought some time ago. At the sale, 15 bulls and 30 females will be offered. There is a choice lot of heifers and cows in calf and with calves at foot. Young stock from such well-known show bulls as Gainford Marquis, Broudale and Trout Creek Wonder, are included in the sale. Good breeding females and herd-headers of show calibre, will be obtainable at the bidder's price. See the advertisement in this issue, and write to J. M. Gardhouse, Weston, Ont., for a catalogue.

THE ONTARIO CORN SHOW.

The Ontario Corn Growers' Annual Show is again announced, and prize lists are before the public. This year the show and convention is to be held in Chatham Curling Ring on February 1, 2, 3 and 4. Of special interest is the list of speakers for the coming event. Prof. R. A. Moore, of Madison, Wis., has been secured as judge and special lecturer. His name is well known throughout the corn belt as the originator of several of the leading varieties of corn. Other speakers will be Prof. C. A. Zavitz, T. G. Raynor, W. J. W. Lennox, W. B. Roadhouse, C. F. Bailey, and L. H. Newman. John T. Miner, better known as "Jack Miner," is also on the program. The Junior Department of the exhibition is stronger than ever, which makes the show of interest to the boys and girls. Small grains are again included. The Counties of Lambton, Middlesex and Elgin, are each given a special class this year in corn, to take the place of the former semi-Provincial class. For prize lists and further information, write the Secretary, J. W. Noble, Essex, Ont.

FIFTY HOLSTEINS ON SALE.

Holstein breeders cannot afford to miss the dispersion auction sale, to be held at Maple Lodge Farm, Lot 6, Con. 2, London Township, on Thursday, February 10, 1916. The owner of this herd, C. E. Trebilcock, R. R. No. 6, London, will on that day dispose of 50 head of registered Holstein cattle, and three registered Jersey cows. The farm has been leased, and everything will be sold without reserve. Included in the sale is the yearling bull, King Lyons Korndyke, whose dam and sire's dam and grandam averaged 28 pounds of butter in 7 days. This is an indication of the quality of the stock offered. Write to Mr. Trebilcock and obtain a catalogue, which is now ready, and which describes the breeding of the individuals very exhaustively. The sale of implements and farm equipment will start at 10 a. m. The sale of cattle will start at 1 p. m. Those coming to London should take a Dundas-street car going east, and they will be met at the Asylum sideroad and conveyed to the farm. The G. T. R. train from Stratford will be met at Pottersburg. Write to C. E. Trebilcock, R. R. No. 6, London, for further particulars.

A gentleman farmer tells of a city lad who once worked for him.
The lad was called one winter morning before dawn and told to harness the mule.
The lad was too lazy to light a lantern, and in the dark he didn't notice that one of the cows was in the stable with the mule. The farmer, impatient at the long delay, shouted from the house:
"Billy! Billy! What are you doing?"
"I can't get the collar over the mule's head," yelled back the boy. "His ears are frozen."

Lister
POWER ON THE FARM BRINGS PROSPERITY TO THE FARMER

Lister Gasoline Engine
The best grade of material and workmanship employed in the manufacture of the Lister Engine, its superior construction, simplicity and finish, combined with its great durability, render it the most economical and reliable power available for the use of the Canadian farmer.

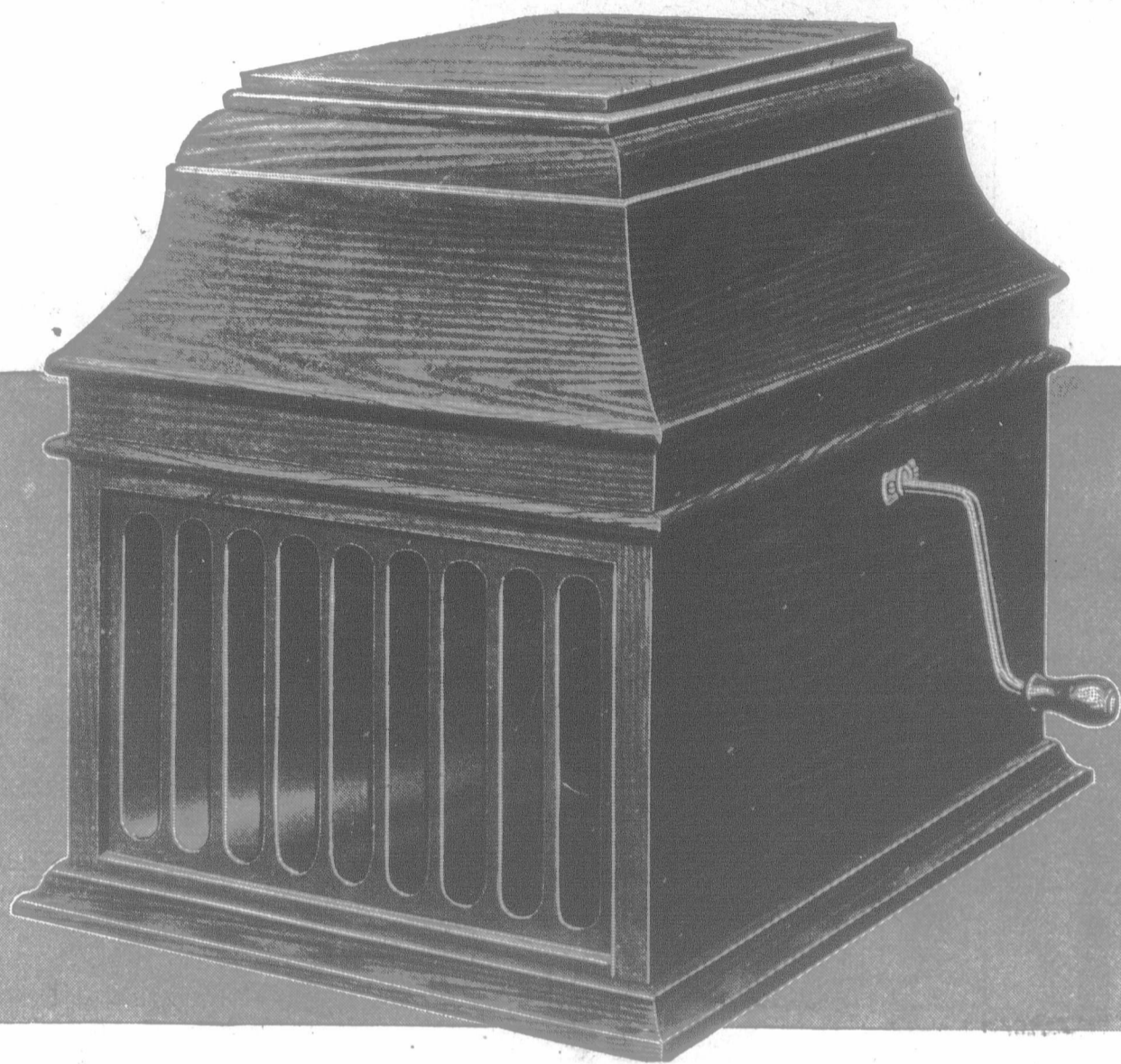
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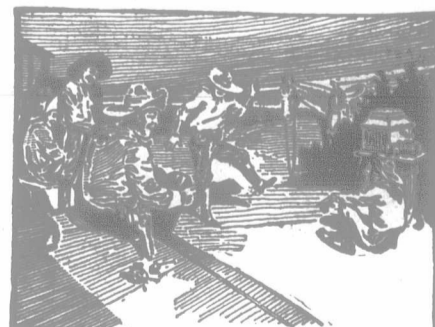
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