

Eighth Annual Farm Machinery Number

FARM AND DAIRY & RURAL HOME

DEVOTED TO
BETTER FARMING
AND CANADIAN
COUNTRY LIFE

Peterboro, Ont., Jr. 1916



POWER FOR THE FARMS OF THE NORTHLAND.

Kakabeka Falls, on the C. N. R., Twenty Miles from Ft. William.

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Rural Publishing Co., Limited, Publishers

ONE DOLLAR A YEAR

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Dept. of Agri.
Jan. Comm. Dec. 16

War Prices

are being quoted our Dairy-men for their Dairy Products.

And with the increased demand and the higher prices you will all keep your "Milk Factories" working right up to the limit.

This, of course, doesn't necessarily mean that you, too, need be kept "on the jump" all the time.

Here's the point—Let a

B-L-K MECHANICAL MILKER AND A SIMPLEX CREAM SEPARATOR

help you take advantage of your opportunity.

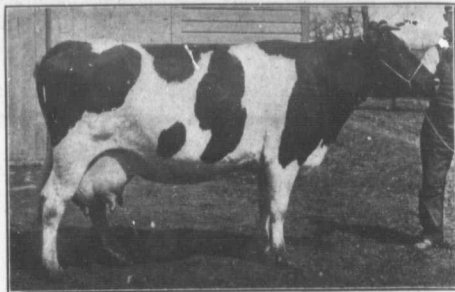
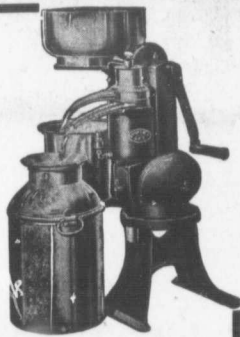
A 100-lb. SIMPLEX will separate your milk with less work than 500-lb. machines of other makes, and one of the many big things in favor of the B-L-K is that the dairyman can easily produce Clean and Sanitary Milk in the ordinary dairy barn. CLEAN MILK MEANS A CONSTANT DEMAND. We'll gladly give you an estimate of just what it will cost you to put in a B-L-K Milking Machine to save you all the old-time hard work of milking your cows. Send us rough plan of your stable and tell us how many cows you want to milk.

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Capacious Bredly Productive.

Keyes Segls Walker Pietertje as a 4 yr. old combines the ideal points of the Holstein. Her record—Milk, 1 day, 58.59 lbs.; 7 days, 431 lbs.; 30 days, 2,708 lbs. Butter, 7 days, 23 lbs.; 30 days, 98.31 lbs. Weighing 1,810 lbs. at 4 yrs., she is typical of the animals in the herd of Ed. B. Purdell, of Bloomfield, N. Y. Sires from such females are the ones that maintain the productive capacity of Holsteins. See notes elsewhere.

Electric Installation

Professor Chas. A. Wheeler, Connecticut Agricultural College

LIGHTING by electricity is practical on the farm and is also economical where power is available for charging a battery, as for example in connection with the pumping of water by a gasoline engine.

There are a number of batteries on the market. The most practical one, considering that a farm battery will not have skilled attendants, is in my judgment, the Edison Storage Battery. This battery is twice as expensive as some of the other makes but it is far more rugged and is guaranteed to operate efficiently for four years. The college has had a ten-cell battery on trial for three months and has found it excellent.

With the 10 cell battery the voltage of the system is 12 volts, each cell giving 1.2 volts. This low voltage would be economical only for very short distances as within one building. If distances up to say 300 feet are to be covered the voltage should be about 30, requiring 27 cells; for longer distances higher voltages would be economical, the ordinary city lighting systems using 110 volts. The recently invented nitrogen bulb, which is a tungsten bulb filled with nitrogen gas instead of being emptied of air, is suited to low voltage only and is twice as efficient as the ordinary tungsten lamp. Herein lies a big

economy in the low voltage farm lighting system.

Management Pointers.

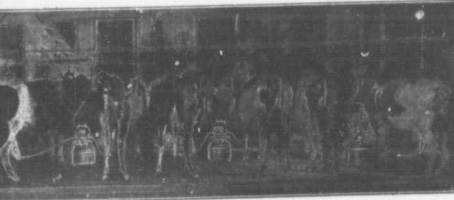
A battery stores the power which is put into it by an electrical generator, which of course is driven by a gasoline engine or otherwise, and gives out the power again in the form of light or in running small motors. Of the power put in about 75 per cent. is taken out, i. e., the battery is 75 per cent. efficient. The power necessary in charging varies from a half horsepower for ten cells to 15 horsepower for 100 cells of the largest size. An economical arrangement is to charge the cells at the same time that the engine is being run for pumping and to have the cells of such size that the tank and the storage battery will last about the same number of days before being refilled.

Figuring 1 1/2 pints of gasoline per horsepower hour and gasoline at 20 cents per gallon the cost per kilowatt hour is eight cents, two-thirds the amount usually paid for lighting in towns and cities. With a storage battery and a nitrogen bulb the farmer can get twice as much light for eight cents as most electricity users now get for 12 cents, so that farm lighting by electricity is economical in comparison with village or city lighting.



Machines Such as These On a Farm Ensure Dairy Profits.

A lineup on the farm of Ed. B. Purdell, Bloomfield, Ont.



CANADIAN

4-ROW SPRAYER

An Acre in 20 Minutes

Fully developed tubers grow on healthy plants. Keeping them healthy is done quickly and thoroughly—twenty minutes will do an acre with an O.K. 4-Row Sprayer.

No excuse for not spraying well and often. Four rows at once, thorough coating on leaves and stalk.

Can you afford to take the chance of losing your crop? Will you let bugs and blight get in their work again this year? Make your profits sure.

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We Welcome Practical Progressive Ideas

FARM AND DAIRY & RURAL HOME



The Recognized Exponent of Dairying in Canada

Trade increases the wealth and glory of a country; but its real strength and stamina are to be looked for among the cultivators of the land.—Lord Chatham

VOL. XXXV.

PETERBORO, ONT., JUNE 1, 1916

No. 21

The Small Sized Tractor for the Small Sized Farm

By F. E. ELLIS, B.S.A.

A YEAR or more ago a dairyman named Gilbert journeyed from his farm near Edmonton, Alberta, to the annual meeting of the Canadian Holstein-Friesian Association at Toronto. His talk was mainly of dairying in the great new west, of the difficulties of breeding pure-bred dairy cattle with scrub bulls running at large on the prairie and other problems directly connected with his business as a dairy farmer and breeder. He did find time, too, to talk about tractors. We of the East have been educated to think of the Western as the ideal home of tractor farming, and the opinion of our friend Gilbert was then "something new."

"The heavy tractor will not come into general use in the West any more than it will in the East," was the opinion of this Westerner. "In a ride of just 100 miles through the prairies, I counted no less than 20 big tractors standing idle, covered with rust and now useful only as scrap iron and a continual warning to their owners to look carefully before making another expensive and, in a measure, experimental venture. They were of all kinds—steam, gasoline and oil burning tractors. They were abandoned because they didn't pay. The horse is still the most economical farm power plant."

Mr. Gilbert expressed the opinion that few operators would now care to fully endorse the big tractor except under ideal conditions for its use. Since then, I have heard many other Westerners express the same opinion. Tractor experience in Western Canada seems to lend weight to the old contention that the horse will never be displaced on the farm. But how about the light tractor, the kind that costs under \$1,000, delivers six to ten horse power on the draw bar and twice as much on the belt, draws two or three plows with 14 inch bottoms, and is adaptable to all farm work from running the grindstone to filling the silo. This light tractor is the real competitor of the horse, and in Illinois to-day there is actually a horseless farm, which, if all reports are true, is being successfully operated with light tractors and the farm automobile. Manufacturers are redoubling their efforts to turn out a tractor suitable to the requirements of the 150 acre farm and hundreds of different makes have been put on the market. Many of these tractors have been absolute failures, others have given indifferent results, but a few have been so successful that the tractor question has become a live issue with every live farmer with what, in the East, we call a large farm, say, 200 acres or more.

The possibilities of the tractor as a farm power are well illustrated by the experiences of Mr. McIntosh on his 200 acre farm near Seaford, Ont. Mr. McIntosh can speak from the experience of a part of one season only, but so far his results have been satisfactory to the fullest degree. Each fall he plows about 100 acres of land with three teams. Last year the difficulties of harvest left his teams played out by fall and incapable of

doing the usual fall plowing; at least, with any dispatch. A tractor was ordered in mid-October and delivered a week later. The soil was wet, a heavy clay and in poor condition for plowing, but the fall plowing was all done, and done well, by the middle of November. "An impossibility with horses," writes Mr. McIntosh.

This tractor is designed to deliver 10 horse power on the draw bar, but seemed to deliver more. It hauled a three bottom plow cutting 42 inches wide each round; depth, seven inches. Mr. McIntosh kept track of his costs which for gasoline, oil, etc., were 70 cents an acre as contrasted with \$1.25 at least for horse plowing. It worked 10 hours a day and could have been worked 15 had the endurance of the operator been equal to that of the machine. Mr. McIntosh is fully convinced that the small tractor is the coming power

on Eastern farms as large or larger than his own.

But there is "a fly in the ointment." Every farmer who owns an automobile will appreciate just what it is. They know that the first year operating expenses were low—the gasoline and oil made the total. Next year there were new tires to buy. Also repairs were needed more frequently. Finally the car is sold and a new one replaces it. When all costs are figured it is found that gasoline and oil account for only about one-third of the mileage cost, and depreciation is the greatest item of all. It is the same with the tractor. The manufacturer may claim that his tractor will give service for ten years, and depreciation may be written off on a basis of 10 per cent, not more than we would charge against horses. A tractor may give service for ten years on the right farm and when operated by a mechanical genius. But five years is a safer estimate of the life of a tractor under average conditions. At least, such has been the experience of thousands of farmers in the middle Western States where tractors have been in general use for a period long enough to determine this point. On a \$900 tractor, therefore, the annual charge under the head of depreciation would be \$160; not an inconsiderable item. The United States Department of Agriculture has been working on this point, and one of its investigators has this to say in defence of the horse.

"While power produced by mechanical means costs less per unit than that produced by animals, the difficulties encountered in its efficient and economical application very frequently make the cost of performing mechanical operations considerably greater than when done with horses. Too often the average cost of work with horses is compared with the maximum possibilities of the tractor. If the maximum of tractor utility is used, the maximum of horse utility should also be used. Worked out on such a basis, it is my opinion that the horse would win."

The tractor as a farm power has been tried to a limited extent on the Dominion Experimental Farms, Ottawa, among the best. As a result of this early work at least, Mr. Griedale was very unfavorably impressed with tractor possibilities. He found that fuel cost per acre was low and labor cost more than cut in two, but that depreciation more than offset these advantages. And yet light tractors are being purchased in the East; several score were sold to Ontario farmers last season, and probably more will be sold this season. And the considerations affecting their purchase are not all concerned with cost per acre in operation. A difficult labor situation and the advantage of doing the right thing at the right time have been the factors determining the purchase.

For years manual labor has been hard to obtain in both East and West. The labor situation has now been rendered even more acute by war and the consequent drain on the manhood of the country. In all of the major operations of culti-



The Most Popular Model on the Dairy Farm.

Locating the Money-Makers

COMPARATIVE YIELDS.

Cow No.	Age.	Pounds of Milk.	Pounds of Fat.
1	7	18,773	401
2	10	10,625	351
3	6	8,880	197
4	6	10,360	342
5	2	2,810	291
6	2	7,294	282
7	4	10,995	427
8	4	8,433	396
9	4	10,580	317
10	3	7,225	382

These figures, tabulating 10 out of 16 cows in one Ontario herd, indicate the divergence bought at a sale, gave only 5,868 pounds of milk and 197 pounds of fat; another 6-year-old, bred on his own farm, gave this owner 10,360 pounds of milk and 342 pounds of fat. Between the best and the poorest cows there is a difference in yield of 6,908 pounds of milk and 204 pounds of fat. Assuredly cow testing discovers something.

In general results, this dairyman, after two years of record work, has increased his average yield by 2,151 pounds of milk and 65 pounds of fat per cow, having done up average from 7,868 pounds of milk and 240 pounds of fat from each of 18 cows, to an average from 16 cows of 9,519 pounds milk year over and above the yield of two years ago, an additional weight of 41,784 pounds of milk worth at least four hundred and twenty-nine dollars, it pays handsomely to keep dairy records.—C. F. W.

A Few Machinery Suggestions

Larger Implements Save Money

The object of larger machines on the farm is to increase the production of each man by increasing the number of horses he drives. Formerly a man had to walk with most of the machines he was operating. Then it was discovered that he might as well ride as walk, and that the energy saved could be directed to driving more horses. The result was that wider machines could be used and the output per man increased, and that by this saving of time, men can be released for other work or for fighting.

There are also, other results obtained by the

vation—plowing, disking, etc.—the small tractor seems to offer a solution of the problem of farm help. Manufacturers are now designing special implements to work with the tractor and enlarge its field of usefulness. A Chicago concern, for instance, is designing and will soon manufacture a binder with special adjustments whereby the cutter-bar and elevators are operated by special shafting from the tractor, a mower working on the same principle, a three row cultivator, and so forth. They are doing their level best to make the horseless farm possible and solve the labor problem. They are almost as keen in their efforts to solve the labor problem as the farmers themselves, and both for the same reason—financial gain.

The possibility of doing seasonal operations at the right time is perhaps the greatest factor in favor of the tractor in the East, and, to scarcely a less degree in the West. Experiments at Guelph, for instance, have demonstrated that there is an advantage of several bushels of grain per acre for every week saved at seeding time. There is a strong argument for the light tractor in the certainty of getting the plowing for fall wheat and the regular fall plowing done up in good order.

Another factor must also be considered; while there are many farm operations that tractors can't do and horses can, there are many equally important operations that tractors can do and horses can't. Every farmer on an at all extensive scale nowadays has use for a good sized farm power. Cutting corn fodder and straw, grinding grain, filling the silo, running the wood saw and even turning the grindstone or cream separator all call for power. By a suitable arrangement of shafting and pulleys the tractor can be made to do all of these operations. If a grain separator is owned a farmer can do his own threshing with the aid of his tractor. It is as such an all-round power that the small tractor is making its appeal to the farmers of the East.

And because of its all-round usefulness the tractor will become popular and common on farms of moderate size in Eastern Canada. It will not eliminate hard work from farming; running a tractor is hard work. It will not altogether eliminate the horse, in this generation at least; but it will cut down the number of horses required, and every horse less represents a saving of \$70 to \$100 a year. Direct advice as to the size and style of tractor to buy cannot be given here; each farmer must study the problem as it applies to his own farm.

The most thorough investigation of the light tractor probably ever conducted, was recently completed by "The Country Gentleman." In concluding a series of articles giving the results of his investigations, this editorial investigator, Barton W. Currie, writes as follows:

"And the operator of that farm must in the nature of things be a skilful mechanic and a hard-headed bookkeeper. There is a new dignity, a new interest and a new zest to this sort of farming. It will tend to eliminate drudgery and it will also tend to raise the average of intelligence, but it will not in any sense make farming

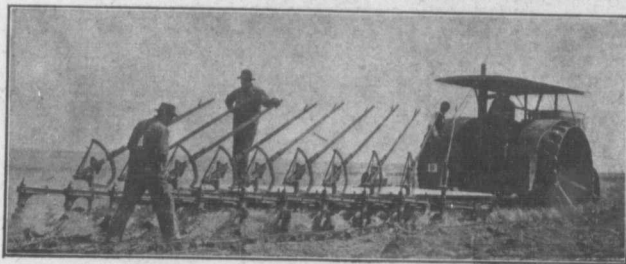
(Continued on page 5.)



A Small Sized Tractor on a Small Sized Farm.

use of wider implements. The cultivation is more thorough. The temptation to skimp is greater when a man's work is rushing him than when he is rushing it. Wide implements, therefore, mean better cultivation, better crops and more money. There is also a direct saving in the expense of cultivation. The following figures compiled at the Central Experimental Farm show the advantage of large over small machines in cost per acre:

1.—Ploughing with single plough \$2.00



A Powerful Tractor Pulling Ten Bottoms on Prairie Land.

Its greatest field of usefulness is in doing custom plowing on prairie land. From 15 to 20 acres in an average day's work.

Ploughing with two-furrow gang	1.55
2.—Discing with small disc (3 cuts necessary)	0.90
Discing with large disc (2 cuts necessary)	0.80
Discing with double cut-away disc (1 cut necessary)	0.45
3.—Seeding with two-horse seeder	0.22 1/2
Seeding with three-horse seeder	0.18
4.—Cutting grain with 6-ft. binder	0.28
Cutting grain with 8-ft. binder	0.20
5.—Cutting hay with 4 1/2 ft. cutting bar	0.31
Cutting hay with 6-ft cutting bar	0.20

Cutting hay with 7-ft. cutting bar	0.18
6.—Cultivating roots with single cultivator (once over)	0.65
Cultivating roots with double cultivator (once over)	0.45
7.—Harrowing with two-horse harrow	0.12
Harrowing with three-horse harrow	0.12

The Automobile Trailer

By "Liverman," Peterboro Co., Ont.

I AM not a farmer, being now engaged in the auto livery business, but I have bought a vehicle this spring that I believe would prove a boon to many farmers, especially those who market light and valuable products such as butter, eggs and fruit. The vehicle I refer to is the auto trailer. My summer business is derived mostly from the tourist traffic. Tourists come to our town and have to be driven out north to the lakes. They generally have lots of baggage and I used to have more trouble getting their trunks and grips out to the lakes than I had with the tourists themselves. It was generally a case of sending the baggage with a team while I took the people out with one of the cars. This was not satisfactory to people who are so hard to please as the general run of tourists, who want their trunks the last thing before they leave for a place, and the first thing after they get there. The car was too fast for the horses, and my customers were generally left waiting for their baggage, and, therefore, in bad humor, and that was not good for business.

This spring I believe I have solved the problem. I purchased an auto trailer. I have already made a couple of trips with it, and it works perfectly. The trunks and grips are placed in the trailer and arrive at their destination as soon as the passengers. The result that my customers are so pleased with the service that I am assured that when the time comes for them to come back from the lakes they will notify me and I shall have the job of fetching them to the station. A pleased customer always means more business.

For any farmer that has a car the trailer would be a good investment. It will carry five or six hundred pounds without difficulty. I have had five hundred pounds in my trailer and it handled the load without an effort. It would handle a great deal of the stuff that the average farmer has to market, and would be much easier on the car than if it were packed into the hind seat. If the road is not too hilly the usual number of persons can be taken in the car and taken along with the trailer can be taken along with little extra cost. If I were a farmer with a car this latest car accessory would be one of my first investments.

Farm Machinery Waste

By W. E. North, Renfrew Co., Ont.

WHEN making up our inventory of farm machinery, what percentage should we allow for depreciation? The consensus of opinion is that 10 per cent. at least should be allowed

as the cost according to receive during the open life would be more

While the full waste of plants. The binders, man from appea owner July year. Ar we under t waste, know vestment of for storing be large, as served its a little repa abed. The implement of the prop suitable hou willful negle doors. A s vestment, b

WHEN into they machine in have been a plow was u grain were the cradle. machinery s handicap. A time is lost total number counted it was wasted may per cent. of

One day of profitable an team around a loss. Where cross fences The time sa pay for movi stones to mo be portable s away when n in place.

Last spring tivator, hitch deeply. We very dry year to the deep boro Co., Ont



as the correct amount. But this will vary much according to the care which the implements receive during the year. If implements are left in the open field, or under a tree, the depreciation would be much greater than if properly stored.

While travelling through the country, one cannot help being convinced that there is much willful waste in this matter of handling farm implements. Plows, harrows, mowers, rakes, and even binders, may be seen in the fields, where, judging from appearances, they have been left by their owner just where he finished using them last year. Another question for us to consider is, can we under the present financial strain stand this waste, knowing that it can be avoided by the investment of a small amount in a suitable house for storing implements. This investment need not be large, as oftentimes an old building which has served its usefulness for other things, can, with a little repairing, be made over for an implement shed. There is another thing in connection with the implement shed and that is the willingness of the proprietor to spend enough time to bring the implements into it. There are cases where a suitable house has been provided, and yet through willful neglect, the implements still stand out of doors. A good implement house is a paying investment, but only when it is put to good use.

Larger Fields Necessary

By R. Y. Birkett.

WHEN the pioneers laid out the small fields into which most of our farms are divided they certainly had not the modern big machine in mind. These 8 or 10 acre fields may have been all right when the narrow walking plow was used exclusively and when hay and grain were cut with the scythe and the cradle. With the use of modern machinery such divisions are a great handicap. A considerable amount of time is lost each round, and when the total number of turns for the day is counted it will be found that the time wasted may amount to as much as 10 per cent. of the total day's work.

One day out of ten wasted in so unprofitable an occupation as turning a team around at the fence is too great a loss. Whenever it is possible the cross fences should be dispensed with. The time saved in two years would pay for moving a fence if there are no stones to move. Cross fences should be portable so that they can be moved away when not needed to keep cattle in place.

Last spring we put six-inch points on our cultivator, hitched on four horses and cultivated deeply. We had excellent crops in spite of a very dry year, and we attributed our good yields to the deep cultivation.—Chas. E. Moore, Peterboro Co., Ont.

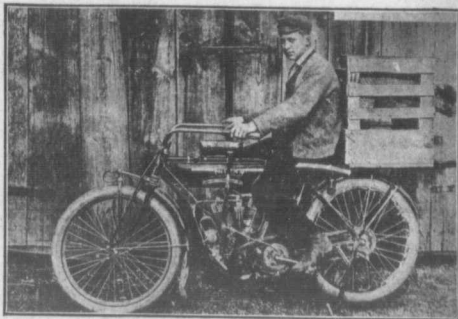
The Farm Boy and His Motorcycle

Give the Boy a Chance to Get Around and He Will be a More Willing Worker at Home

BY E. L. McCASKEY

MAN is a gregarious animal. Webster's International Dictionary defines gregarious as "tending to flock or herd together." Doesn't that describe man? And doesn't it describe boys? The gang spirit is a predominant characteristic of the boy whether his home be in city or country. Never is the farm boy so happy as when he can congregate with a select bunch of chums. If he can't get in touch easily with his boyish friends he will be discontented and inclined to view the farm as a most monotonous place in which to live; his vision will turn to the city where people are constantly brushing up against their fellow human beings; too much, perhaps, for their own good, but then the farm boy doesn't inquire too deeply into the sociological problems arising from city life. All he sees is "a chance to be with the fellows."

One of the most serious mistakes that parents



Ready for a Quick Trip to Market.

ask no questions, and be content with a little pocket money handed out now and then. But the chances are that the boy who has the pecuniary interest, whose father is considerate and makes his son feel like a partner, will spend the first money he makes on some means of communication.

Bicycle Dreams.

My own dream when a boy was to own a bicycle. The best thumbed page in T. Eaton's catalogue was the bicycle page. Wheels were more expensive then than now, and the best of them lacked the coaster brake, cushion frame and such conveniences as even the cheap wheels of to-day have. But I am sure that no purchase I have made before or since has given me the satisfaction that my wheel did. It gave me a chance to be with the fellows. Eventually I became tired of going out alone or even with the other fellows who had wheels. My wheel had no accommodations for two. My next purchase was a top buggy of my own. I already had first claim on one of the driving horses. I expect my next purchase will be an automobile for the family.

Here is the point I am trying to make: Facilities for rapid communication put the country boy and country people generally on a plane with the city dweller. Distances between (Continued on page 10.)



Still the Most Popular Source of Farm Power.

—Photo on Colony Farm, B.C.

have made in the past is the part they have played in trying to repress this spirit of "get-togetherness." It won't be repressed; it's natural. The boy who is given a direct pecuniary interest in the home farm will not be so desirous of getting away as the one who is supposed to do his chores,



"Made in Canada" Disc Harrows Clearing Grass and Scrub Land on the Lamut Rubber Estate, Dindings, S.S.

cars to so many practical uses as Mr. Marshall Haines, of Halton Co., Ont. Mr. Haines does not object to my using his name, as he is generous enough to want to give others the benefit of his experience. My friend is a large potato grower, with early potatoes a specialty. Tomatoes are also grown extensively. And both are marketed in Guelph, 17 miles away, with a Ford automobile. Mr. Haines frequently takes three trips a day, and it is a common sight along the old Brock road to see the Haines touring car, piled high with bags of potatoes or baskets of tomatoes, speeding on to Guelph. His car has opened a market to Mr. Haines that he could not easily reach in any other way.

Last fall Mr. Haines found a new use for his

car. He purchased an auto-power attachment for \$50. This device is fitted onto the car or removed in just a minute or two. It enables the car owner to develop up to 16 horse power and harness it to all the power requirements of the farm. Last fall Mr. Haines filled his silo with the power developed by his Ford car. He also cut his year's wood supply, and the neighbors who heaped assured him that it did the work more expeditiously than any gasoline engine they had seen in operation that season.

"But isn't it hard on the car harnessing it to such heavy loads?" I asked Haines, junior, who is also as great a car enthusiast as his father.

"We haven't noticed it," was the convincing

(Continued on page 10.)

Farm Machinery---25 Years Ago and Now

Not Much Improvement Has Been Made in Many of the Commonest Farm Implements

BY "A ROLLING STONE"

SINCE coming back to the land I have been very much struck with the small amount of improvement that has been made in most of our common implements during the last 25 years. It is just about that length of time since I left my father's farm to learn a trade in the city. I was then a full grown man, with plenty of experience in driving all the machines which my father had purchased. Nor had he been at all

wide, while in the West the eight-foot cut is common, but with the exception of a few minor details they are constructed on exactly the same principle as the binder which we purchased 25 years ago.

Previous to buying this machine we had, if I remember correctly, only one crop cut by a binder. It was owned by a neighbor, and it was one of the first binders in the neighborhood.

I remember what a curiosity it was. It had what was known as an Appleby knoter. In every sketch of the development of the binder appears the name of Appleby, one of the inventors who did much to perfect harvesting machinery. I suppose that this knoter was one of his inventions. Previous to the year in which we had our crop cut with this binder we used a reaper that was purchased before the time to which my memory goes back. It was known as the Harvest Queen, and was, I think, made by a firm in Alliston. I was very much interested while in Western Canada to see that they are still using reapers in cutting the flax crop. Upon closely investigating one of these new reapers I found that it was practically the same in principle as the old Harvest Queen.

Regarding grain drills, it must be over 30 years since my father purchased a drill which, I be-



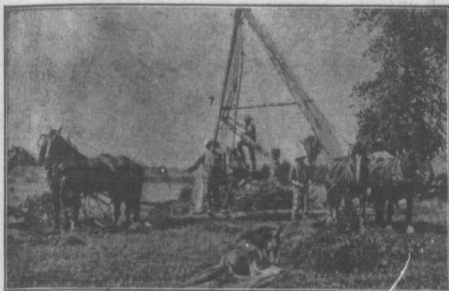
In the Hayfield.

Eunice Buchanan, a well known New Brunswick writer on agricultural topics, is here seen tending a helping hand in the busy season.

lieve, is still doing service in the neighborhood. It was made by a Brantford manufacturer named Wisner. It was a 16-hole drill and did its work just as satisfactorily as the drills the neighbors around here are using at the present time. Of course most of them now use disk drills. Most of them are wider than our old Wisner, but I doubt if there is very much to choose between them in the quality of the work done.

The hay fork in my father's barn, which I understand is still giving good service, was put in position 30 years ago this summer. I don't know who made it, but it has given practically no trouble in all those years. A couple of new ropes have been purchased, but that is practically all the expense that has been placed upon it. The track is a three-quarter inch round steel rod, without support except at the ends of the barn and at the gate, which is placed centrally over the threshing floor. Sling attachments have been much improved since this outfit was purchased, for with the slings that went with our outfit the load had to be built in two parts, and so they were not much used. The fork, however, handled hay and peas well. While speaking of hay forks, I might mention an old baron fork that used to hang in our implement shed, but which I never saw in use. It was purchased over 50 years ago. There was no track for it, the rope passing directly from the fork through a pulley on a beam at the back of the mow and then out through the side of the barn, where a board was taken off to allow

(Continued on page 21.)



Clearing the Way for the Use of Farm Machinery. Stump puller at work on the farm of Jas. Young, New Ontario.

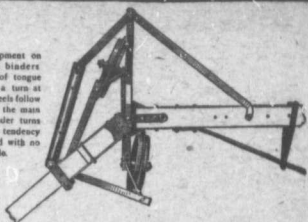
backward in keeping his farm well supplied with up to date equipment. He dabbled a little in the local implement trade, and as he was business man enough to see that he could scarcely hope to sell a machine which he did not possess for his own farm, he was usually supplied with the latest things in farm equipment that the manufacturers had to offer. Well, when I came back to work on the farm, I expected to find that a perfect revolution had been effected during the 25 years that I had been engaged in other pursuits. I found, however, that I could very well undertake to run a modern farm with the same implements that we had on my father's place 25 or 30 years ago.

Take binders for instance. The old Harris binder that we had was purchased about 25 years ago, and I understand that it served for 12 seasons before it was finally disposed of. The binder did just as good work in the season of 1915 as the most up to date machine I have seen in operation. A few changes had been made for the better, one of which is that our binders are now made open behind. The main tendency, however, seems to be to produce bigger machines. Our old binder cut a swath only five feet wide, but we could have had a six-foot make if we had known enough about binders to make so wise a choice. Now, of course, most of the binders in use are open feet



Side Delivery Rake and the Haylooper. Among the Latest Additions to the Farmer's Equipment.

Auto tongue truck equipment on Deering and McCormick binders. Illustration shows position of tongue truck wheels when making a turn at end of swath. Note that wheels follow a natural circular track with the main wheel as a pivot. The binder turns squarely and easily with no tendency of wheels to drag or lift and with no twisting stress on binder pole.



The New Auto Tongue Truck on Deering and McCormick Binders

THE announcement of a new auto tongue truck on Deering and McCormick grain binders this year is great news for Canadian farmers. It means less work and less expense for them at harvest time.

With this new auto tongue truck the binder pole is held in line with the truck pole. An 8-foot binder enters the grain and continues to cut as squarely as a 6-foot machine.

Equipped with this auto tongue truck, the binder cuts a full 8-foot swath without crowding the horses into the grain—a gain in the width of every swath, with far less work for the driver.

Auto tongue truck wheels are fitted with removable dust proof bushings, equipped with hard oil cups. When a bushing wears out, you put in a new one instead of throwing the whole wheel away.

This new tongue truck is one of the most important improvements made on binders in the last ten years. Do not fail to see it at the local agent's place of business next time you are in town, or write us at the nearest branch house for details.

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If you intend to put in some Fall wheat you want to fertilize with Sydney Basic Slag and you should arrange for your requirements at once. There is tremendous congestion on all railway lines and goods are taking longer in transit than usual. Many farmers who delayed ordering last Autumn were disappointed of supplies. Sydney Basic Slag will grow your crop at a lower cost than any other fertilizer. If you do not know our agent in your district drop us a line and our general Salesman will get into communication with you. If we are not represented perhaps you could distribute a car of 20 tons for us. You will be reasonably remunerated for your trouble.

Interesting descriptive literature will be sent on application.

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Two Western Dairy Conferences

Dairy Authorities of the Three Prairie Provinces Meet at Regina to Discuss the Grading of Creamery Butter. Pacific Northwest Milk Inspectors Meet at Victoria

AN important dairy conference was held in Regina, Sask., on May 19th for the purpose of securing greater uniformity in the grading of creamery butter in Alberta, Saskatchewan and Manitoba.

This conference was the first of its kind held in Canada, and the results were so satisfactory that all the delegates were strongly in favor of making it an annual affair. Geo. H. Starr, Chief, Dairy Division, Ottawa, and the leading dairy authorities of the Prairie Provinces were in attendance. The conference was held in the Regina Cold Storage, where 25 samples of butter were provided for scoring. Three of these samples were sent by the Merchants' Produce Association, Montreal, five came from Manitoba, eight from Alberta, and seven from Saskatchewan.

These samples were scored by the official graders according to the scale of points used in grading in each province at the present time, the minimum for flavor and total score being as follows:

Flavor.	Total Score.
First Grade—	
Alberta ... 39 out of 46	81 out of 100
Saskatchewan ... 39 " " "	82 " " "
Manitoba ... 40 " " "	83 " " "
Second Grade—	
Alberta ... 37 out of 45	87 out of 100
Saskatchewan ... 37 " " "	84 " " "
Manitoba ... 37 " " "	85 " " "

There was only one sample of third grade butter, and this was placed in third grade by all the graders.

The most interesting feature of the conference took place when the highest scoring samples of butter from each province and from Montreal were placed together for comparison. Although all the samples were first grade, the differences in color and flavor were sufficiently marked to provoke a long and valuable discussion. The pale color apparently so desirable for the coast trade was considered by some delegates too pale for the local markets in Manitoba and Montreal, and also difficult to secure during the summer months when the cows are on grass. This point is one which will require time to adjust. The general opinion of the conference was that the coast trade, if supplied with the finest flavored butter, might in time accept a slightly deeper shade than that which is at the present time so popular, and that the Eastern markets might very well accept a butter of a lighter shade in color than that usually made in the Eastern Provinces, thus eliminating the necessity of grading the butter specially for a certain market.

The main point of difference regarding the flavor of the highest scoring samples was their keeping quality. This point could only be decided by holding the samples, and, at the request of the delegates, the Dairy Division, Ottawa, decided to place five of the samples in cold storage in Montreal and have them a year from time to time for at least six months. Three of these samples were made from pasteurized cream and the other two from raw, sweet cream.

After the scoring and discussion on the quality of the butter, the conference settled down to discuss the question of uniform grades in the three provinces. It was finally decided to adopt the following uniform scale of points for the different grades: total score, 100; total score for flavor, 45. Alberta will continue to have a "special" grade, the minimum score for

which will be 42 points out of 46 for flavor and a total of 82 points out of 100. The minimum score for first grade will be 39 points for flavor and a total of 82 points. The minimum score for second grade will be 37 points for flavor and a total of 81 points.

INSPECTORS DISCUSS CITY MILK SUPPLY.

The Pacific Northwest Association of Dairy and Milk Inspectors met in Victoria, B.C., during the week ending May 13th to discuss the various problems involved in the city milk trade. This Association is international in character, the president for the past year being Prof. W. T. McDonald, of Victoria, who announced that next year the convention would meet at Tacoma, Wash.

Prof. McDonald, in discussing bovine tuberculosis, stated that the indurated test was used almost exclusively in British Columbia and had been found most reliable. Practically every dairy animal in the province has been tested, and at the present time tubercular disease had been brought to an almost negligible percentage. In the Gulf Islands two recent tests failed to discover a single affected animal. J. E. Dorman, of Salt Lake City, Utah, emphasized the importance to the dairy industry of the ability of cows to produce butterfat at a low cost. He advised that complete records be kept of the cows in their dairy and that the poor producers should be eliminated. He also expressed the belief that more money would be made in the dairy business if the kept solely to that branch and did not consider the best producing qualities of the cattle. I. C. Burnham, of Seattle, referred to the cordial relationship existing between inspectors and dairymen, each of whom realized that their work and aims were reciprocal and complimentary, and that each were endeavoring to foster the best interests of the other and of the public. As time went on the duties of the inspector became more and more those of instructor and publicity agent. This point was also touched upon by E. Kelly, who made a special plea for educative work on the part of inspectors, who should play the role of advisor and teacher rather than that of cross-examiner.

Pasteurization of milk was fully considered by Dr. Ayres, an eminent United States authority on the subject, who stated that the value of pasteurization consisted in the destruction of pathogenic bacteria, such as germs of typhoid and the virus of foot-and-mouth disease, which were rendered innocuous at 145 degrees F. The retention of that temperature for 30 minutes or so killed the persistent lactic acid bacilli that induce souring and the penicillium that set up putrefaction. Chemically there was little or no change observable, and apparently no impairment of nutritive value or digestibility. The cost of pasteurization, about three-tenths of a cent a gallon, was easily offset by the saving in milk otherwise lost through souring. Speaking on the same subject Frank Flood, of Spokane, Wash., said that the day had gone by in which the prevailing view was that pasteurization was a crooked process for the preservation of dirty milk improperly handled. Pasteurization was, he thought, absolutely necessary to remove such germs as those of typhoid, scarlet fever, and diphtheria, which cause septic sore throat, which might have found their way into the milk.

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When a smelter buys gold ore he buys not merely two thousand pounds but he insists on knowing how much gold is in the ore, and you should know the amount of active nitrogen, which is the *end* of the fertilizer.

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I thrive on hard work—just "put it up" and it costs less a trailer to keep me hustling service because I am one of the business.

GILSON "Goes to the Sixty"

Before—the fact that equally made every man and with a high quality machine for less. It will get you to write for full particulars of Gilson "Goes to the Sixty".

Gilson Mfg. Co., Ltd., 147 York St., Quebec, Canada.

\$47.50

The Small Sized Tractor for the Small Sized Farm

(Continued from Page 4.)

a soft snap or a kid-glove avocation. The farmer's son who abhors dust and grime and sweat would better keep right on up the highway to the city. Neither electricity nor the internal-combustion engine will provide him with the comfort wrappings he yearns for. But for the farmer's son who is merely ambitious to become modern and progressive, to keep in touch with the live events of the times, the tractor will be an interest greater than any one thing that has been brought to agriculture since the days when barbarian slaves were shackled to the yoke of wooden plows. And the time is coming in the next decade or two when every farm in the United States that is a real farm will own its tractor, and its automobile too.

Mr. Currie's conclusions apply equally well to the farms of Canada. The medium powered, medium priced, simply constructed tractor of wide adaptability is destined to take a large place in Canadian agriculture in the near future, even if it does not cut costs as much as was at first anticipated.

Separator Milk for Calves

In writing of his experience in calf rearing and the value of separator skim-milk as calf food, in the "Jersey Bulletin," Prof. T. L. Haecker of the Minnesota experiment station says: "I have made calf rearing my business for over twenty years, and during the last fifteen years placed my reliance on skim-milk. For growing calves I consider separator skim-milk at least equal to whole milk, though calves will not lay on as much fat as they will when whole milk is fed; but they will make as good growth and be as thrifty on skim-milk. This is nothing in butter fat that a calf can use in building body tissue. Butter fat can be converted into body heat and body fat, and nutriment for this purpose can be supplied more cheaply with fax meal, which contains from 30 to 35 per cent. oil.

My system of feeding is very uniform. When the calf is dropped I let it suck once and then remove it from the dam. If it is removed in the morning I give it no feed until the following morning. I give from three to four pints of its mother's milk twice a day, immediately after milking the dam. A small calf gets three pints and a large calf four pints. This I continue for about one week. Then for one week I give it whole milk half and skim-milk half twice a day, giving it only from three to four pints. The third week I feed all separator skim-milk, but put in the milk a teaspoonful of ground fax. I gradually increase the skim-milk and fax meal so that, by the end of the fourth month, it is receiving a heaping tablespoonful of fax meal and ten pints of milk twice a day. After the first month it has access to a little early-cut hay and a little whole oats, or a mixture of whole oats and bran or shorts.

The important points are strict regularity in time of feeding, quantity and temperature of milk, which should be from 98 to 100 degrees F. From the first of June the skim-milk should be pasteurized so it will not get sour. It has been the general opinion among farmers that separator skim-milk was not a strong or nutritious food and that a large mass must be given to make up in quantity what they supposed it lacked in quality, and the result was that calves were overfed and indigestion was produced, which was followed by scours and bloats.

Rock and Brick Face "METALLIC" Siding

Gives an armour-clad building that defies time—weather—fire—storms.

PUT heavy, full gauge Galvanized "Metallic" Steel Siding plates on your building and you'll have a steel coat that simply laughs at old Father Time.

Needn't paint for years unless you want to—unlike inflammable wood that needs constant protection. "Metallic" plates are absolutely wind, snow, rain, fire and storm proof. "Metallic" patterns are masonry and clapboard being the most popular.

Send for price list today. We can save you money.

We also make "Roosters" Galvanized Shingles; "Empties" Corrugated Iron "Metallic" Outing Plates; Ventilators; Rooflights; Sill-roofs, etc.

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Free gasoline for thirty-three hundred miles—the Ford owner's saving in one year

The light, economical Ford with its smooth running engine averages about twenty-five miles on a gallon of gasoline.

Compare this with the gasoline consumption of the Sixteen-Miles-To-The-Gallon car.

Then figure the difference, having an eye on the present price of gasoline.

Six thousand miles is a fair season's travel. The Sixteen-Miles-To-The-Gallon car, going six thousand miles, burns up one hundred and thirty-five more gallons of gasoline than does the Ford going the same distance.

This means that the Ford owner saves enough during a single season to pay for his gasoline for an additional thirty-three hundred and seventy-five miles.

You can travel a year and a half in a Ford for what it costs you to travel one year in the Sixteen-Miles-To-The-Gallon car.

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Ford Runabout	\$420
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All cars completely equipped, including electric headlights. Equipment does not include speedometer.

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The heavy, hard steel top and bottom wires with intermediate laterals will hold a carload of rickled wagon or empty animal and immediately spring back into shape.

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It is the same book that has saved time, labor and money for more than 75,000 progressive Canadian farmers. Let it save money for you.

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The Farm Boy and His Motorcycle

(Continued from page 6.)

neighbors in the country are necessarily long. But if we can make good speed we are not at a disadvantage. This explains the popularity of the automobile with the town folks and the rapidly increasing popularity of the motorcycle with the farm boy. If I were a boy now I am sure that my ambition would not be a cow, a horse, or a tractor, but a bicycle, but a motorcycle. It is the first big idea I expect my youngsters to develop when they get to an age when the gang spirit makes itself felt. And I will give them a chance to earn one of their own, just as my dad gave me the chance to earn my bicycle.

Motorcycle Sows Content.

The motorcycle sows the seed of contentment on the farm; it furnishes the get-away for a little while. The young man can get astride his motor-bike after the toll of the day is done and hike himself down to a friend's house 10 miles away without trouble, make merry for an hour or two and get home again in a reasonable hour. Without this ready little speeder he might have taken his supper moodily, found fault with the biscuits, kicked the dog, and sat down on the porch steps, feet sprawling, and inwardly damning the monotony of the farm until bed time; but having a motorcycle gives him something to think about, trips to look forward to. He learns to love his machine; to take it apart, and put it together again; to fess, to oil, to clean, to prepare! Oh, the joys of "inkeridial"! Who knows them, save the proud owner of a machine? And the long wet days when outside work is impossible, how many happy hours spent with wrench and screw-driver, which would otherwise have given rise to the blue-devils, and the old time yearning for, "Oh, if there was only something done around this place!"

There is only one motorcycle in my neighborhood. It is owned by a young fellow of 18 years. He is just about the best pleased youngster in the range of my acquaintance. Some of my ideas have been derived from his enthusiastic talk. His father is as pleased with the machine as is his son. The other day he broke two or three sections of the canvas top of his binder. Town was just twelve miles away. He had the repairs in a little over an hour. The boy got them with his motor-bike. Father himself has taken to riding the bike and is, just debating in his own mind whether he will buy a motor-bike of his own or an automobile. Frequently I have noticed him speeding off to town on business that would otherwise have been neglected.

A Motor-bike Retail Trade.

This same boy has plans for making his motorcycle a profitable investment. Poultry is his hobby, and it was the profits of the boy that contributed somewhat largely to the purchase of the cycle. He now plans to sell direct to customers. He is going to buy a side car, or make one, he doesn't know which, and carry his eggs to market with his motor-bike. He tells me that he will help dispose of his mother's butter in the same way. That motor-bike promises to make a good business man of that youngster.

"Hold on!" I hear some one say, "aren't you going to have the boys eternally away from the farm when they are wanted there?" I do not think so. Give the boy a motorcycle and he will know when his work is done there is a chance of change and recreation; and this youth needs. All those who are versed in scriptural lore know my authority for the statement that it is the "forbidden fruit" we hanker after and it causes our unrest.

If the boy knows he can get away when he wants to he will be more contented to stay when we need him. Make the boy earn his own bike. In making youngsters earn their own money, we give them everything, save the love of clothing. They appreciate them more, learn the value of money and how to spend money. Give the boy a chance with a cow, a horse, or a tractor, and allow him to spend the money he makes out of them as he sees fit.

Farm Uses for the Automobile

(Continued from page 7.)

answer. "Of course a fly wheel would have helped to steady the engine for cutting wood and the same draft, on the car might seem heavy, but as hard on the engine as the severe jerk it often gets in driving over bad roads."

Mr. Haines, I may add, delivers cream to the railway station, three and a half miles distance, two or three times a week, yet loses little time from farm work.

To come back again to Oxford county, a man near Springfield has found that he can jack up the rear end of his car and use one of the drive wheels to run his grindstone, and emery wheel. I am not sure that this same farmer has saved wood in the same manner.

The effect of the car on the farm is to speed up business and make the management more efficient. The business transactions, necessary to the operation of any farm, are not so apt to be neglected, time is made available for the study of managerial and marketing problems, and the better ownership of a car in itself, tends to promote pride in our industry and greater effort for its advancement.

Just across from the ideal farm's riding, heavy wagon to market crops and the light buggy for driving. Finally we evolved the democrat as a happy combination of the two, and it is one of the most useful and best appreciated conveyances in America to-day. Similarly we have the auto truck and the touring car. Both were originally designed to meet the demands of city people. Manufacturers are now studying the farm field more closely, but, to my mind, they have not yet gotten the ideal farm car. What we want is an auto-democrat; one adapted to marketing the crops and yet capable of use as a pleasure vehicle. My ideal car is one that can be used as a truck when needed and also carry a couple of people comfortably, as when business and via go to market on Saturday, and then with a few easily managed changes, converted into a presentable touring body. When we have this we will have the ideal farm car and there will be who will then dare to characterize the automobile as an "extraneous." I do not wish to see the farmer's car destroyed by the farmer's Sabath as it has destroyed the city's Sunday, but I do want to see it take its place as the farmer's assistant in his business and as an abettor to his social life and the happiness of his whole family.

General farmers are also dairymen to some extent. They keep cheap cows, feed them cheaply, care for them with cheap labor, and thus keep the price of all dairy products at a lower level than they would otherwise be—E. S. Letch, O. A. C. Guelph.

Many careful calculators have estimated that there are a greater percentage of successful farmers among dairymen than among those who follow any other branch of agriculture.



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Hints for June

Nearly everyone can keep hens, but not everyone can make the hens keep them.

The poultry like fresh straw now and then, just as well as the cow like to be well bedded.

The hens that are yarded should be given the lawn clippings. The daily ration is not complete without animal food in some form. Skim milk fed separately or with the mash furnishes a partial substitute for the meat ration.

Keeping too many breeds is a poor way to succeed. One or two varieties gives the best of care is best.

A poultryman who is too careless to keep the henhouse free from vermin, does not deserve to succeed.

Poultry should be kept off feed 24 hours before being killed and dressed for market.

Have some way of telling the oldest eggs, then sell them.

Be sure to provide some shade in the pens, or it will be found that some of the chicks will not feather.

Chicks that have been drowned in watering tanks that someone forgot to empty, would make a good-sized flock. A hen is not lazy by nature, and will surprise you in what she can do if given the right chance.

It costs but the merest trifle more to feed a hen that lays 150 eggs a year than one that lays 50.

If one does not like the breed, change as soon as possible, for no one will be successful with a breed he does not like. Do plenty of good thinking before making the change, as it is expensive not only in money, but in the experience already gained with the breed one has. Give the flock a square deal, and be sure that the fault lies with them before making the change.

Poultry raising is what one makes it. Lots of people make it drudgery by the attitude of mind rather than the amount of work they do.

Pointers for Turkey Raisers

Lack of vitality and hardiness in the stock is one of the greatest difficulties in successfully handling turkeys. Bronze turkeys are the largest and hardest of all domestic varieties.

Here are some pointers for turkey raisers:

1. Lice cause great loss in turkeys. Kill them on the hens and on the young turkeys with insect powder, applying once a week when cooped up.

2. Turkeys do best when kept separate from chickens. If the two are kept together the turkeys are likely to take chicken diseases.

3. The growth of turkeys is rapid. Give plenty of nutritious and easily digested food. For the first five days, feed four parts of bread crumbs and one part of boiled eggs. Feed one meal a day of rolled oats and give all the sour milk they will drink. Change gradually and in three weeks feed six parts of wheat and two parts of corn, with rolled oats once a day. From the time the birds are ten weeks old until maturity, give: Wheat, 10 parts; whole oats, 2 parts—increasing to 10 parts in two weeks; cracked corn, 10 parts.

4. Access to fine gravel, crushed shells and broken charcoal is necessary.

5. Give plenty of green food. It prevents digestive troubles.

6. Black or red pepper and ginger in

food or drinking water aids in overcoming chills and prevents bowel troubles, especially on cold, damp days. Plenty of grit and oyster shells, together with well-selected, wholesome food, eliminates this necessity in most cases.

7. If young turkeys get wet, take them to a warm room until thoroughly warm and dry.

8. The more exercise the better. Always give free range in dry weather if possible.

9. Dampness, lice and filth are deadly foes of young turkeys.

The Cackle of a Hen

LISTEN for the cackle of your hen. It has a money value to you.

When the winter season advances, when the price of eggs will advance and the cackle will become of even greater significance to you.

Plan for the cackle, feed the hens in accordance with the demands of nature as propounded by the experts who have spent their life in the work.

If the cackle is not heard with sufficient frequency ask yourself why. Dig down and study the subject, for the more you study the oftener the hen will cackle, and cackling means more eggs and a bigger bank account.

It is the law of nature that a hen should lay, and cackle. She should lay often and do much cackling, for that, too, is nature's law.

But she will not lay unless she receives proper food and care, and therein lies the wisdom of the man who thinks before he acts.

Get hold of some good literature, read up on the subject of egg production, apply the knowledge you thus obtain, and in the end you will learn to experience a keen delight in every cackle of your hens.

Your hen wants to cackle—she will cackle, if you give her a chance. And there's money in the cackle of a hen.

Keeping the Premises Clean

By Michael K. Boyer.

PROBABLY no subject in poultry lore has been treated in the press so much as that of cleanliness. Its importance is so great that neither too much can be said of it, nor can it be too rigidly enforced. The health of the flocks and the success of the farm depends largely upon the enforcement of the rule.

The houses must be kept clean. This does not refer to dust, as that cannot be avoided, inasmuch as the fowls must scurry all winter and get wallow in the dust bath to keep themselves clean. But there is no reason for allowing the cobwebs to accumulate, hanging down from the ceiling so that the tiny chains entangle one's face as he enters the pen. Neither is that any excuse for allowing the manure to accumulate on the dropping boards, or the floor of the pen allowed to become filthy.

A discarded house broom will be just the thing for keeping the place look more tidy. Sweep the ceilings and walls of these unsightly cobwebs, and gather up the accumulation of dirt on the floors.

Old hens are the cause of low averages in egg-production. The pullets work regularly, a Chicago farm paper says, but the old hens lay about a dozen eggs and rest the remainder of the year.

Unless you are raising a particular stock of chickens of which you have only a few hens, you can not afford to keep the old hens as layers. A hen is not profitable after her third summer's laying, and she is better used as a layer. Selling the old hens and using the incubator for hatching is the best plan for the small poultryman.

Send for new "Money Saver" Booklet

Barrett Money Savers for Farmers
Made in Canada

BARRETT Money Savers will solve many of your problems, and save you time and money. Good dealers almost everywhere carry them in stock.

EVERLASTIC ROOFING

EVERLASTIC is a splendid "rubber roofing". It is just what you need. Tough, durable, weather-proof and inexpensive. No better "rubber roofing" could be made at the price. Very easily laid. It will solve your roofing troubles. Made in one, two and three ply weights. Be sure to ask for it the next time you go to your dealer's.

EVERJET ELASTIC PAINT

THEN there is Everjet Elastic Paint—the best carbon paint ever made. Everjet has saved many a dollar by keeping "ready roofings" in first class condition. It is elastic and expands or contracts to meet temperature changes. It never peels, scales or cracks. And as a roof paint Everjet stands alone. It has great covering capacity—therefore, it is not expensive to use. Absolutely waterproof—therefore, protects against leaks and weather. You should never be without Everjet.

AMATITE ROOFING

AMATITE Roofing is distinctive for two reasons—its bright, attractive, sparkling appearance and its great durability. It has wide fame, too, as the roofing that needs no paint. Its mineral surface is waterproof and fire-resisting. Amatite is made in rolls, each roll containing enough to cover 100 square feet with a 3 inch lap.

CARBONOL

THE most necessary thing you could have around the house is a bottle of Carbonol. It is the best disinfectant, healer and cleanser ever made. Removes germs, germs and odors. Therefore, put some in the water with which you clean house. Heals cuts and wounds; prevents blood poisoning. Wonderful in the sick room because it prevents contagion. It will keep your stable or hen house clean and drive flies away from garbage pails or cattle pens.

The best thing you could have for a hundred different uses. Get a bottle today.

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CREONOID is the most effective lice destroyer and cow spray ever made. Spray your live stock with Creonoid and they will be happy and healthy. Creonoid makes care-free horses—cows that give a generous yield of milk—and clean, good-looking hens. A little Creonoid sprayed in the piggery helps make profitable porkers. Follow directions carefully.

GRADE-ONE CREOSOTE OIL

NOW those fence posts of yours would not have rotted if you had used Grade-One Creosote Oil. It has been proved that this wonderful wood preservative will keep fence posts and timbers rot-proof for twenty years. Don't think of putting wood into the ground without treating it with Grade-One Creosote Oil. It penetrates farther into the wood than any other preservative. It also lasts longer. It is so easily applied. Use it wherever wood is exposed to dampness, earth or weather. It saves you money.

ELASTIGUM WATERPROOF CEMENT

MANY a leak in your purse is caused by neglecting the little everyday repairs or else by paying too much to make them. Play safe. Have Elastigum—the wonderful, waterproof cement. It makes those little necessary repairs easy and cheap. And they are permanent too. It's just what you want for joining and relining gutters of metal or wood. It seals leaks and joints. The best thing you can use for chimney flashings. Elastigum is waterproof so that any joint sealed with it stays sealed.

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MONTREAL TORONTO WINNIPEG VANCOUVER
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It Kills Lice on Cattle, Pigs, Sheep, Poultry.
THE GREAT OAT TAR DISINFECTANT
ZENOLOX
ZenoLox is recommended by Veterinarians, Agricultural Colleges, Breeders, Stockmen and Professors of Poultry and Swine Husbandry. It is a powerful, abundant and best of gericides. One quart of ZenoLox will kill lice on a cow, sheep, pig, chicken, or will kill sheep parasites, such as, the scab, and will kill lice on a pig. For FLEA Lice, use ZenoLox on the dog. ZENOLOX MANUFACTURED BY WEDGWOOD, Ont. Southwick Street



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THE best cream separators often fall below expectation simply because they are not properly lubricated. The separator is your most delicate farm machine. It suits it an oil especially made to do it.

Standard Hand Separator Oil

Is just such an oil. It is made for separators and it is of just the right body to quickly reach those finely adjusted, close-fitting bearings. It protects them from all wear. It enables your separator to deliver all the butter fat. There is, no better oil made for your separator. Ask your dealer for it.

THE IMPERIAL OIL COMPANY
Limited
BRANCHES IN ALL CITIES

HORTICULTURE

Sprays for Potatoes

W. T. MAQUIN, Dominion Horticulturist, Ottawa.

The Colorado potato beetle and the cucumber beetle are the commonest insects which injure the potato tops. The former can be readily killed with Paris green in the proportion of eight ounces to 12 ounces to a 40-gallon barrel of water, or with arsenic of lead in the proportion of two to three pounds or 40 gallons of water. Paris green kills quicker than arsenic of lead but the latter adheres better than Paris green, hence a mixture of both in the proportion of eight ounces of Paris green and one and a half pounds of arsenic of lead to 40 gallons of water will kill quickly and adhere well to the foliage.

The poisons mentioned will, to some extent, check the cucumber flea beetle, but in addition to them, a better preventive is a covering of Bordeaux mixture on the foliage. The Bordeaux mixture should also be used to control the early and late blights of potatoes, the latter disease causing rot. These are two of the commonest diseases.

Spraying With Bordeaux.
To control the early and late blight of potatoes spraying with Bordeaux mixture should be begun before the disease appears and the plants kept covered until autumn. It is safer to start spraying with Bordeaux mixture when spraying for the potato beetles. The poison of the latter may be mixed with the Bordeaux. From three to four sprayings or more will be required, the number depending on the weather. Taking the average of three years, the increase of yield from spraying with Bordeaux mixture was at the rate of 94 bushels an acre. In some years it is much larger.

The importance of keeping plants growing as late as possible is well illustrated in an experiment where the total crop of marketable potatoes per acre when dug on September 1st was 234 bushels per acre, whereas in the same field the same variety yielded 353 bushels marketable potatoes per acre when left undug until September 22nd, or in three weeks the crop had increased by 119 bushels per acre of marketable potatoes. Bordeaux mixture is made in the proportion of six pounds bluestone, four pounds lime and 40 gallons of water. Spraying mixtures should be used the proper time and thoroughly, if good results are to be expected.

Summer Cultivation in the Orchard

By W. F. KIDD.

I HAVE seen some orchards where they are not cultivating all the ground under the trees, and they are making a great success of apple growing. One such orchard is owned by Mr. Kenneth Cameron, Lucknow. He has very little cultivation in his orchard, not more than the width of two cultivators. I do not know any one in Northwestern Ontario who has such crops of apples. Mr. W. H. Gibson, Newcastle, operates his orchard in very much the same way, but does not leave quite so much land in sod as Mr. Cameron. Mr. Gibson grows beautiful apples, and I do not think he sees any reason to change his methods.

During the last year or so we have been carrying on experiments in orchard work, and we have put part of the orchards into sod entirely. Last year we started with a seven feet square of sod around the trees. Mr. Gibson has not quite seven feet one way, but he has far more the other way. The past season was so very

wet that it did not matter much what you did, but we hope to be able to give you some results next year. There is not much use in cultivating within five feet of the trees. None of you would put manure any closer than five or six feet to a bearing apple tree, because there is no such thing as a feed root as close as that to the trunk of the tree. This refers to bearing trees only.

Clover Between the Trees

By W. H. GIBSON.

WE try to cheapen the cost of production as much as possible. We cultivated the orchard and then sowed a strip of clover, about ten feet wide in each row, and left it there and cut it with a mower the last part of June. It saves a great amount of labor in cultivating. We find that in a dry year the trees will not bear as large apples as they would if we cultivated, but in an ordinary year the size is good enough and the trees make plenty of wood. The feed roots are out beyond this strip with the rows 15 to 35 feet apart, that gives 25 feet of working ground in the center, and we sow cover crops in that. One year we sowed a cover crop of clover and then broke it up the following spring. We also manure with manure. Our orchards are near the lake and have a deep clay loam. Until this cover crop was used we could not get a good color in the fruit. We tried it in an ordinary year and it would not get as good color as we had been getting.

Taking Advantage of an Opportunity

THE war has made many changes in our industrial world. Factories that were used to manufacture staple articles of food, clothing and machinery, are now turning out munitions and a host of different kinds. Mr. R. J. Graham, Belleville, Ont., made a bold and successful venture upon the opportunities thus provided and is utilizing his evaporators in the manufacture of canned soup to be used by the allied armies. Such vegetables as potatoes, carrots, onions and turnips have been purchased and the evaporated products are then shipped to a central factory where they are blended into a definite compound that is then canned and packed for shipment.

In certain districts where these vegetables could be best grown quite an extensive market has been developed. Farmers have found it profitable to grow turnips, onions and other things to supply this market, and at the same time made to feel that they were doing something to assist in supplying food stuffs for our army.

Such credit is due to Mr. Graham in that he was able to see this opportunity, and that he has sufficient confidence in the possibilities of the industry to persevere until he brought it to such a successful issue. After the war is over there, no doubt, will be more or less demand for canned soups. The industry is, therefore, likely to be more or less permanent.

Substitute for Pipe Wrench

IT frequently happens that a pipe wrench is needed to turn a pipe and none is handy. A fair substitute is to break off a short piece of an old file, and use this as the jaw of a flat wrench. The file will grip the pipe, preventing the wrench from slipping. Of course, this is not equal to a good pipe wrench, but may serve to tighten or loosen a pipe or bolt when nothing else at hand will answer to the trick. A little "mother wit" will help one out of a difficulty.

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Sealed tight
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When
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When Old Sol gets to sizzling—just then's the time to tear open a sweet, cool, clean and refreshing package of—



My, but
it's good!

So soothing—so long-lastingly delicious! Aids appetite and digestion. Makes the next pipe or cigar taste better. Cleanses the teeth.

Write for quaint "Mother Goose" book in colors, free. Wm. Wrigley Jr. Co. Ltd., Wrigley Bldg., Toronto, Ont.

Chew it after every meal

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Dairy Legislation

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Instruction in Testing to be Given

Geo. A. Putnam, Director of Dairying.

THE Dairy Standards Act, passed at the 1916 session of the Ontario Legislature, which comes into force March 31, 1917, provides that:

"All milk and cream received at a factory shall be paid for—

(a) on the basis of its fat content as determined by the Babcock test; or (b) on the basis of its fat content as determined by the Babcock test, plus the factor 2."

A conference was recently held in the office of the Minister of Agriculture for the purpose of discussing the best way of meeting the situation which will arise when this Act comes into force. Mr. Frank Hesse, London, and Mr. G. G. Puijow, Kingston, Chief Dairy Inspectors for Eastern and Western Ontario, as well as other officials of the Department, were in attendance. It was the general opinion that the testing of the milk would be the greatest problem.

At the present time about one-seventh of the factories in Western Ontario and one-twelfth of those in Eastern Ontario are paying for milk upon quality basis, as determined by the Babcock test. In Western Ontario the maker is, in nearly all instances, held directly responsible for the testing of the milk, and, in most cases, receives additional pay for this test. In Eastern Ontario a number of the makers are doing the testing, while in some districts a special man is employed for the work at so much per visit, the amount paid depending upon the number of patrons in the factory.

No doubt a number of makers are not at present qualified to do the testing, while others who are qualified would prefer not to accept the responsibility. An independent person will, no doubt, have to be employed to do the testing in a number of factories, and the Department will be prepared to assume the responsibility of seeing that such persons are qualified for the work in hand. The factories concerned will, of course, pay for the services of this man on the basis of actual cost, as is done at the present time where payment is being made on the butter-fat basis. Experience has shown that from \$1 to \$1.50 per patron for the season will cover the outlay. Information will be collected throughout the summer as to the number of makers who will be qualified and willing to undertake the work of testing next year, and as to the various other phases of the work, so that final conclusions based on reasonably complete information may be reached in the fall.

As One Maker Sees It

EDITOR Farm and Dairy: I have seen most of my patrons, and they are not in favor of milk testing. I have made cheese for 25 years, and it is hard work for me to get enough money out of the cheese to pay one man. Supplies are very high, and so are wages. Patrons don't want to pay any more to the cheese-maker than they did a few years ago. That is the way I look at it.—Maker.

Dairy Legislation in Quebec

THERE is nothing on the statute books of Quebec about milk being paid for on a quality basis; J. D. Leclair, Inspector of Creameries, the grading of the cream with a separator a letter of better in the object of our dairy legislation. This is not of such a nature as to create a revolution, nor is it a matter of serious discussion amongst the producers of milk. Those limited in their object it has not been received with great kindness but the objections, all

based upon abuses introduced with the home-made cream system, are very easily overcome when the farmers look at it with coolness from the point of view of their interest.

Our principle has been, and is still, to have the law enforced without having any recourse to the law. It is really surprising how much improvement is being accomplished by continuous moral pressure. The storm is now abating, and there will be clear sunshine in our sky before long.

Wayside Cleanings

By W. G. Orvis, Field Representative, Farm and Dairy.

The Dairy Act

An Eastern cheesemaker expressed his views regarding the new dairy act when interviewed by a staff representative as follows: "We do not want to pay by test. For several years we have discussed the matter at our annual meeting and the patron are not in favor of payment by test. As to the makers, we have more work now than we can properly do. Besides, a number of our patrons do not have the necessary equipment for making curd tests. If the government intends to enforce this act, it will be necessary for them to appoint competent men to do the test work."

Need of Education

A man high up in the Canadian dairy world states that he thought the government should carry out some plan of general education before putting the act in force. He further stated that the dairy department's car had done much good, and might be used in the present case to advantage. Demonstrations held at the factories by competent men would be another means of education. The appointing of specially qualified men to visit the patrons of cheese factories in their homes and discuss with them the matter of testing, explaining the process and the advantages of it, should be valuable. His reasons for making this statement were that few farmers understood the exact nature or value of the test and consequently are averse to it. If the good likely to come from it in the way of doing justice to each herd were better understood, and people understood that it would result in the raising of higher producing animals, many of the objections would disappear.

MR. FROGQ enjoys a warm drink; so does the calf. To make the food for the calf appetizing, add salt in generous quantity. We would not fancy our porridge without salt, nor our soup neither. And whatever mixture it may be for the calf, whether cream equivalent, ground oil cake, linseed meal or the same thing—ground flax, a generous helping of salt added is a relish. Is there any special virtue in heating the milk for the calf by means of red-hot irons? Is the scorched milk more wholesome? We tried it one winter, but could not say it was an improvement on other methods.—A. A. F.

EXPERIENCE.

ANOTED agriculturist was travelling through one of the Southern States when a letter from one evening, after delivering his lecture, he approached a grinning farmer with the intention of starting a conversation on the betterment of crop conditions.

"Good evening," said the agriculturist.

"The farmer regarded him doubtfully for a moment, then he smiled broadly. "You can't learn no nothin'. I've done 'wore out' two farms already."



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Is guaranteed to contain at least 33 per cent. protein and 4 per cent. fat. We guarantee that you will get better results from smaller quantities of "Purina" than you would have to use of any other calf meal. Ask your dealer about the special introductory price. "Purina" is put up only in Scientific Feeding Chart sent free upon request, checkerboard basis.

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Toronto Economy Silos are fitted for you to set up without carpentry. Staves are 2-inch spruce, all wood parts are creosoted against weather and decay, also making them proof against acid, warp and shrinkage; double-tongued and grooved, with steel splines in ends; special steel loops have malleable feet—open legs; doors straight with three sealing surfaces, get very easy to open. Roof has three supporting iron struts, covered by waterproof roofing, and has galvanized, protected ventilator at top. This is the real ECONOMY Silo, and the real service Silo, too.

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Besides our complete silo, remember that we can sell you a Cutter and Blower, possessing important exclusive features. Our machine cuts the silage and fills the silo at the same time.



Our "TORONTO" Feed Grinder is another essential on every farm where there are cattle.

Gives Plenty of Power

Our Chapman Engine for farms has the timing device, ignition, governor, and valve control all in one case, which protects them from injury. Our Engine catalog explains fully. The engine not only cuts your ensilage and fills your silo, but at other times it grinds feed, runs water, saves wood—does the hard chores, quick and well, at a cost of only a few cents an hour. The Chapman Engine is a farmer to do more work, and undertake dairying and beef raising on a larger scale. You can move this engine from place to place, if need be, and it will give steady, smooth power in any kind of weather.



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Sworn detailed statements of circulation of the paper, showing its distribution by counties and provinces, will be made free on request.

OUR GUARANTEE

We guarantee that every advertisement in this issue is reliable. We are able to do this because the advertising columns of Farm and Dairy are carefully edited as the reading columns, and because to protect our readers, we turn away all unscrupulous advertisers. Should any advertiser herein deal dishonestly with you as one of our paid-in-advance subscribers, we will make good the amount of your loss. Should such transaction occurs within one month from date of this issue, that it is reported to us within a week of its occurrence, and that we find the facts to be as stated, it is a condition of this contract that in writing to advertising agencies: "I saw your advertisement in Farm and Dairy."

Agencies shall not ply their trade at the expense of our subscribers; we are our readers' friends through the medium of these columns; but we shall not attempt to adjust trifling differences between subscribers and honorable business men who advertise, nor pay the debts of honest bankrupts.

The Rural Publishing Company, Ltd.

PETERBORO, ONT.

"Head not to contradict and to confute, nor to believe and take for granted, but to weigh and consider."—Bacon.

Relief for the Rennet Situation

SINCE our last issue went to press, we have received two important communications, one from J. A. Ruddle, Commissioner of Dairy-farming for Canada, and the other from Prof. H. H. Egan, of the O. A. C., regarding the rennet situation. These authorities agree that though for a short time considerable inconvenience may be experienced by cheese makers in securing sufficient rennet to meet their requirements, there does not appear to be any cause for apprehension that the cheese industry will be seriously damaged later in the season, owing to a failure of the rennet supply.

As is usual in such cases, the relief is due to several causes. The release of half a million rennets through the port of Archangel will result in a considerable increase in the supply of extract as soon as it can be manufactured. The establishment of a factory in Toronto to manufacture extract from Canadian rennets, most of which have hitherto been wasted, helps to relieve the situation. The use of pepsin is also important, not only in that it assists in meeting the present condition, but also in the possibilities that it holds for the future. The high prices at present prevailing will be an inducement to companies to strive for the discovery of satisfactory substitutes for rennet, and it is possible that the present shortage will result in the perfecting of a coagulating substance that will free us from such complete dependence on the rennet supply.

Reimbursement for Sheep Losses

IMPORTANT changes were made during the last session of the Ontario Legislature in the act under which sheep owners are reimbursed for losses due to the dog nuisance. Municipal councils were empowered to indemnify such owners to

the full value of the sheep destroyed instead of to two-thirds of the value as formerly. It was made compulsory under a penalty of a fine of ten dollars for assessors to include all dogs in the assessment roll. Municipalities were also given the power to increase the dog tax, if this was found necessary to meet the increased demand for money to cover sheep losses.

These changes in the act met with no opposition in the legislature, and should be regarded with approval throughout Ontario. "The pestiferous dog" is acknowledged to be the chief cause of the rapid decline of the sheep industry in the province. The danger of having the result of years of painstaking and careful breeding in building up a flock destroyed in a night by a band of useless, roving curs, has prevented many farmers from keeping sheep. By taking advantage of their power to reimburse farmers in full for sheep killed by dogs municipalities can do much toward encouraging the sheep industry. If this necessitates an increase in the dog tax the result should be that the number of useless or ownerless dogs would be decreased, and the damage to flocks from this source materially lessened.

Depreciation Charges

DEPRECIATION is one of the heaviest charges against the farm machinery account. It is usual to write off ten per cent. annually from the value of farm equipment to meet this charge alone, whereas the interest rate is seven per cent. or less in most districts. Ten per cent., however, may be a rather excessive charge for depreciation. Investigations conducted in Minnesota, where the care bestowed on machinery is presumably not greater than in Canada, showed the depreciation to be about seven per cent., but since this was the average it may be safe to assume that on many farms the equipment decreases at least ten per cent. in value annually owing to ordinary wear and tear.

Since the loss by depreciation is variable there is an opportunity of effecting a considerable saving by keeping it down to the minimum. Such an opportunity is not afforded in all divisions of the farmer's expense account. Take interest, for example. He has little to do with fixing the rate that he has to pay. Governments have frequently tried to do that with but indifferent success. But by giving his equipment proper care a farmer greatly prolongs its usefulness and reduces the annual loss due to depreciation.

Of the factors that enter into the proper care of machinery shelter is the most important and the one most frequently neglected. Our field representative reports that almost everywhere he goes he sees evidence of this neglect. On one trip by rail of only twenty-five miles he counted nearly a dozen machines standing where their owners had finished using them last season. The list included two binders and several mowers. There was no lack of buildings on the farms where they could have been run in out of the sun and rain. It is safe to say that on such farms the depreciation losses are well above the average as found by the Minnesota investigation. Good care would keep the loss below instead of above the average.

Making the Railways Pay

THE annual deficits that two of our three great railways are facing, are due largely to the fact that they have laid thousands of miles of steel across vacant land, held from production for speculative purposes. As long as such lands remain unoccupied, the deficits will recur with the regularity of the seasons. It is an agricultural impossibility with the land at present under cultivation to furnish business enough to make the roads pay expenses. If it were, they would be paying now after the abnormal acreage and the abnormal yield of last year. If with the largest crop in the history of the west to move, they

require a \$23,000,000 loan to avoid falling into the receiver's hands it is probable that they will require still greater annual contributions until the vacant quarter sections are filled up.

But the quarter sections will not begin to fill up until after the war. European immigration has ceased. The movement from the United States, checked by the war prosperity that exists in Canada, is now almost negligible. Western Canada has contributed more than her share of the troops for overseas service. The question now is not how to increase production and acreage, but how to maintain them while the war lasts. Until the war is over, therefore, the country will in all likelihood be called upon annually to meet constantly increasing deficits for the railway companies involved.

After the war, what? When emigration is again established, probably in greater volume than ever before, will the land already served by the railways be available to those who wish to settle on the land? Under our present land policy it cannot be available to many of them. The vast majority of them will be in an impoverished condition. The price that speculators will demand for the land will be a sufficient barrier to keep most of the immigrants from settling upon it. If they are forced, in order to secure available land, to go still further back into the wilderness, the cry will come for more railways. We will have a repetition of our railway blundering of the past, and our railway problem will still remain unsolved. If the land already served by the railways is made available, the situation will soon be relieved. Our railway problem is the result of our land policy in the past. Its solution depends on our land policy of the future. The clue to the solution is the taxation of land values such as has already been done to some extent in Alberta, and which has the effect of prying the speculator free from the land and making it available to those who want to use it for productive purposes.

The well-read town dweller has more to learn about the social problems of the farm than the well-read farmer has to learn about the problems of the town. Each, however, ought to know the other's problems, for the problems of each are the problems of the other. They are all problems of the nation. As long as all men, however, derive their living from the soil, so long will the problem of the farmer be the fundamental problem of the nation. Until recently, on account of the great development in industrial conditions, the problems of the town and the city have seemed most insistent; but now the more fundamental problems—the problems of the agriculturist—are making themselves heard.—The Outlook.

A very strong, self-reliant people neither easily learns to act in concert nor easily brings itself to regard any middling good, any good short of the best, as an object ardently to be coveted and striven for. It keeps its eye on the grand prize, and these are to be won only by distancing competitors, by getting before one's comrade, by succeeding all by one's self; and so long as a people works thus individually, it does not work democratically.—Matthew Arnold ("Mixed Essays").

The first and greatest essential to a better social life is a common interest—whatever that be makes little difference—which shall lead to cooperation of all in a true spirit of service for a better welfare. All rural social arrangements should cut across class lines and command the interest of the whole rural population.—Report of address of Prof. T. N. Carver, of Harvard, at Bangor Seminary.

He who is unable to live in society, or who has no need because he is sufficient for himself, must be either a beast or a god; he is no part of the state.—Jovett ("The Politics of Aristotle").

O.A.C. No. 72 Oats Purloined

PROF. C. A. Zavits, of the O.A.C., who originated the famous O.A.C. No. 72 variety of oats some 32 years ago, has issued a warning to the farmers of the province in which he says that a seed firm of New York state secured in 1914, some 600 bushels of this variety, apparently for seed purposes and that they are now being placed on the market under the name of "Imperial." In order that such a popular variety of a bogus name, the college records have been appropriated and the reported yield increased six per cent. because the standard weight of a bushel of oats in the United States is 32 instead of 34 lbs. These oats, under the name of Imperial, have been advertised extensively in catalogues and numerous agents have been traveling from farm to farm over Ontario and elsewhere selling the now-named variety at \$3.18 and upwards a bushel. Pointing out that exactly the same oats can be purchased in abundance from Ontario farmers at \$1 or less per bushel, will be sufficient to prevent any more of the so-called Imperial oats from being purchased at such fabulous prices.

Among Ourselves

"No dollars are so well spent as those paid to assist better family comfort, convenience and health."
"To sweeten and improve life—that's what dollars are for."

After all, the real life in struggling for dollars is that we may secure something for them—something that someone else has struggled and sweated to produce. And in these days the high cost of products is still going higher. In other words, we've got to work harder and longer to attain our needs. Nearly every one of us goes about it in a different way. But we all aim to accomplish any particular object with the least amount of expended energy. It is right that we should. That adds one step in the advancement of our age.

Not only through the editorial columns of Farm and Dairy do we endeavor to point out better methods of carrying on our farm work, but also through the advertising columns from week to week. No man would think of attempting to harvest his summer's crop with the old fashioned cradle to-day. We use the binder that minimizes the amount of energy required for the harvesting. It enables us to accomplish more. In other words, to earn more in order that we may better afford the comforts and conveniences that are available. A few years ago the man on the farm thought that the automobile was entirely beyond his reach, that it couldn't be anything but a luxury to him. On hundreds of farms we have discovered this theory; the automobile is not only a luxury, but in many ways it saves more than its real cost.

It is the purpose of our advertising columns in Farm and Dairy to get our readers closely acquainted with the most modern improvements and the most up-to-date labor saving machinery which exists. And in doing this we endeavor to select for the acquaintance of our readers those firms in whom we have every confidence. If you are in need of farm machinery, Farm and Dairy is the only publication that we will be glad to send you information on their equipment. Mention Farm and Dairy in writing them. If you do not find the address of any firm you desire, or the manufacturer of some particular implement you need, we shall endeavor to give you the address

If you send a note to our Advertising Department here at Peterboro.

Depreciation in Farm Machinery

SOME interesting work has been done in Minnesota in securing reliable statistics relating to the depreciation of farm machinery. The statistics show that while for the years 1902 to 1907 the average depreciation of all machines was approximately 7.3 per cent, for the years 1908 to 1912, 6.7 per cent, was the annual depreciation. The difference is accounted for by the fact that the farmers have taken better care of their machinery during the latter period. The investigation also brought out the fact that as machines grow older, the rate of depreciation becomes less. A grain binder for instance, may depreciate at the rate of 10 to 12 per cent for a few years, but if this rate continues to be allowed, the total value of the machines is finally accounted for in the depreciation account, while it is still capable of rendering considerable service. On the farm, 30,000, many machines from 12 to 16 years old were found in use and apparently capable of considerable usefulness.

Estimates were also made of the amount of machinery values consumed in producing crops. These values are made up of depreciation, labor, cash repairs, and interest on the average annual investment. The following table clearly shows the results of the information secured. In the first column is found the annual depreciation of farm machinery expressed in percentages, while in the second column is found the value in farm machinery consumed annually per 100 acres.

Machine	Average Annual Depreciation	Values Consumed Per 100 Acres
Grain binders	6.54%	\$16.80
Grain drills	6.06	7.20
Corn binder	7.97	60.40
Corn planters	6.41	5.80
Corn cultivators	5.23	22.50
Mowers	6.08	18.70
Hay tedders	4.31	6.20
Hay loaders	7.87	9.60
Hay rakes	6.03	7.90
Walking plows	8.24	9.60
Wagons	3.89	...
Harrow	6.58	3.70
Discs	5.29	7.70
Manure spreaders	10.37	33.70
Shage cutters	7.48	121.60
Cream separator	7.92	...
Gas engines	6.69	...

An interesting feature of the investigation was that on a 1620-acre farm the charges for depreciation were on an average about one-third less than on a 640-acre farm. This was probably due to the fact that on larger farms the annual acreage that each machine has to work is greater than on the smaller ones.

Milking Machine Does It All

J. M. Dolson, Peel Co., Ont.

WE are using the Calveiny milker on our herd of pure bred Jerseys. We commenced using it about January 20th, being at that time rather sceptical about milking machines. It has worked pretty closely for shrinkage in the milk flow and also for udder troubles that might be caused by the use of the machine. I am pleased to state, however, that our cows have not fallen off in their milk flow and that we have not had udder trouble in any cow. I feel quite satisfied that this machine will not injure any cow.

We are milking about 35 head and need a cream separator. To-day, our cream separator is driven by the same power—a gasoline engine—which drives the milker. We skim the milk as it is drawn from the cows

30% Of the World's Creameries Separate their cream with a DE LAVAL

TEN YEARS AGO THERE WERE A DOZEN DIFFERENT MAKES of creamery or factory separators in use. Today over 98 per cent of the world's creameries use De Laval Separators exclusively.

IT MEANS A DIFFERENCE OF SEVERAL THOUSAND DOLLARS a year whether a De Laval or some other make of separator is used in a creamery.

EXACTLY THE SAME DIFFERENCES EXIST, on a SMALLER scale, in the use of farm separators. Owing to the fact, however, that most farm users do not keep as accurate records as the creameryman, or test their skim-milk with the Babcock tester, they do not appreciate just what the difference between a good and a poor separator means to them in dollars and cents.

NOW IF YOU WERE IN NEED OF LEGAL ADVICE, YOU WOULD go to a lawyer. If you were sick you would consult a doctor. If you had the toothache you would call on a dentist. Why? Because these men are all specialists in their line, and you rely upon their judgment and skill.

WHEN IT COMES TO BUYING A SEPARATOR WHY NOT profit by the experience of the creameryman which qualifies him to advise you correctly? He knows which separator will give you the best service and be the most economical for you to buy. That's why 98 per cent of the world's creameries and milk dealers use the De Laval exclusively.



THERE CAN BE NO BETTER RECOMMENDATION for the De Laval than the fact that the men who make the separation of milk a business use the De Laval to the practical exclusion of all other makes of cream separators.

Your local De Laval agent will be glad to let you try a De Laval for yourself on your own place. If you don't know the nearest De Laval agent simply write the nearest main office, as below.

DE LAVAL DAIRY SUPPLY CO., Ltd.

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 Cream Feed Silos. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER 50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

and in this way can skim closer than when the milk is allowed to stand and get cool. As to the speed of the operation, we have noted the time taken to milk each individual cow in the herd and have found it to range from four to seven minutes. We do not pull stripping. The machine does it all and we are satisfied with the results.

Feeding an Orphan Foal

OCASIONALLY one has the misfortune to lose a mare that has brought a young foal and has to bring the foal up by hand on cow's milk. It should be remembered in a case of this kind that mare's milk is normally sweeter than cow's milk, but has only about half the amount of fat and other solids that is found in the average cow's milk consequently it is usual to add sugar to diluted cow's milk for feeding orphan foals.

A method of feeding is suggested by J. H. S. Johnson, of "Breeder's Gazette," which is about as follows: Use an old teapot for feeding, with the thumb of an old kid glove, having

a few holes punched in it, fastened over the spout. For a very young foal, feed not more than a cupful of milk five times a day. A dessert spoon of sugar to a pint of milk is about the right proportion. Three tablespoonfuls of lime water added to this ration will correct acidity in the stomach. The milk should be perfectly sweet, uteritis should be kept clean, and the milk should be fed at normal body temperature. It should be obtained from a somewhat fresh cow that does not test too high in butter fat. The milk may be diluted with warm water or skim milk. After it is two months old, the foal will do very well on skim milk alone to which may be added a tablespoonful of linseed meal. The foal should have comfortable quarters, pasture and fresh water. As soon as it is willing to eat, it should have a grain ration put in front of it, a little at a time, consisting of possibly one part of wheat bran to one part crushed oats, corn chop or crushed barley. A little alfalfa hay will also be of benefit, especially if the colic does not have much pasture.



AN effort made for the happiness of others, lifts us above ourselves.
—L. M. Child.

God's Country and the Woman

(Continued from last week.)

AS the blows of his axe cut deep into the birch, Philip knew that so long as there is life and freedom and a sun above it is impossible for hope to become a thing of char and ash. He did not use logic. He simply lived! He was alive, and he loved Josephine.

The muscles of his arms were like sinews of rawhide. Every fibre in his body was strung with a splendid strength. His brain was as clear as the unpolluted air that drifted over the cedar and spruce. And now to these tremendous forces had come the added strength of the most wonderful thing in the world: love of a woman. In spite of all that Josephine and Jean had said, in spite of all the odds that might be against him, he was confident of winning whatever fight might be ahead of him.

He not only felt confident, but cheerful. He did not try to make Jean understand what it meant to be in camp with the company of a woman for the first time in two years. Long after the tents were up and the birch-fire was crackling cheerfully in the darkness Josephine still remained in her tent. But the mere fact that she was there lifted Philip's soul to the skies.

And Josephine, with a blanket drawn about her shoulders, lay in the thick gloom of her tent and listened to him. His far-reaching, exuberant whistling seemed to warm her. She heard him laughing and talking with Jean, whose voice never came to her; farther back, where he was cutting down another birch, she heard him shout out the words of a song between blows; and once, sotto voce, and close to her tent, she quite distinctly heard him say "Damn!" She knew that he had stumbled with an armful of wood, and for the first time in that darkness and her misery she smiled. That one word alone Philip had not intended that she should hear. But when it was out he picked himself up and laughed.

He did not meddle with Jean's cook-fire, but he built a second fire where the cheer of it would light up Josephine's tent, and piled dry logs on it until the flame of it lighted up the gloom about them for a hundred feet. And then, with a pan in one hand and a stick in the other, he came close and beat a tin that could have been heard a quarter of a mile away.

Josephine came out full in the floodlight of the fire, and he saw that she was not crying. Even now there was a tremble of her lips as she smiled her gratitude. He dropped his pan and stick, and went to her. It seemed as if this last hour in the darkness of camp had brought her nearer to him, and he gently took her hands in his own and held them for a moment close to him. They were cold and trembling, and one of them

that had rested under her cheek was damp with tears.

"You mustn't do this any more," he whispered.

"I'll try not to," she promised. "Please let me stand a little in the warmth of the fire. I'm cold."

He led her close to the flaming birch logs and the heat soon brought a warm flush into her cheeks. Then they went to where Jean had spread out their supper on the ground. When she had seated herself on the pile of blankets they had arranged for her, Josephine looked across at Philip, squatted Indian-fashion opposite her, and smiled apologetically.

"I'm afraid your opinion of me isn't getting better," she said. "I'm not good of a—a sport—to let you men get supper by yourselves, am I? You see—I'm taking advantage of my birthday."

"Oui, ma belle princesse," laughed Jean softly, a tender look coming into his thin, dark face. "And do you remember that other birthday, years and years ago, when you took advantage of Jean Croisset while he was sleeping? Non, you do not remember?"

"Yes, I remember." "She was six, M'sieur," explained Jean, "and while I slept, dreaming of one grand paradise she cut off my moustaches. They were splendid, those moustaches, but they would never grow right after that, and so I have gone shaven."

In spite of her efforts to appear cheerful, Philip could see that Josephine was glad when the meal was over, and that she was forcing herself to sip at a second cup of tea on

their account. He accompanied her back to the tent after she had bade Jean good-night, and as they stood for a moment before the open flap there filled the girl's face a look that was partly of self-reproach and partly of wistful entreaty for his understanding and forgiveness.

"You have been good to me," she said. "No one can ever know how good you have been to me, what it has meant to me, and I thank you."

She bowed her head, and again he restrained the impulse to gather her close in his arms. When she looked up he was holding something toward her in the palm of his hand. It was a little Bible, worn and frayed at the edges, pathetic in its raggedness.

"A long time ago, my mother gave me this Bible," he said. "She told me that as long as I carried it, and believed in it, no harm could come to me, and I guess she was right. It was her first Bible, and mine. It's grown old and ragged with me, and the water and snow have faded it. I've come to sort of believe that mother is always near this Book. I'd like you to have it, Josephine. It's the only thing I've got to offer you on your birthday."

While he was speaking he had taken one of her hands and thrust his precious gift into it. Slowly Josephine raised the little Bible to her breast. She did not speak, but for a moment Philip saw in her eyes the look for which he would have sacrificed the world: a look that told him more than all the volumes of the earth could have told of a woman's trust and faith.

He bent his head lower and whispered: "To-night, my Josephine—just this night—may I wish you all the hope and happiness that God and my Mother can bring you, and kiss you once—"

In that moment's silence he heard the throbbing of her heart. She seemed to have ceased breathing, and then, slowly, looking straight into his eyes, she lifted her lips to him, and as one who meets a soul of a thing too sanctified to touch with hands, he kissed her. Scarcely had the warm sweetness of her lips thrilled his own than she had turned from him, and was gone.

CHAPTER SEVEN.

For a time after they had cleared up the supper things Philip sat with Jean close to the fire and smoked. When he had finished his pipe he rose and went to the tent which he was to share with Jean. At last he found himself not unwilling to be alone. He closed the flap to shut out the still

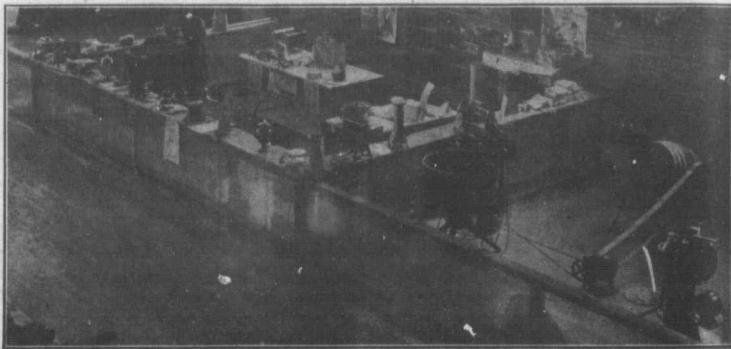
brilliant illumination of the fire, drew a blanket about him, and stretched himself out on the top of his sleeping bag. He wanted to think.

He closed his eyes to bring back more vividly the picture of Josephine as she had given him her lips to kiss. This, of all the unusual happenings of that afternoon seemed most like a dream of his yet his brain was afire with the reality of it. His mind struggled again with the hundred questions which he had asked himself that day and in the end Josephine remained as completely enshrouded in mystery as ever. Yet of one thing was he convinced. The oppression of the thing under which Jean and the girl were fighting had become more acute with the turning of their faces homeward. At Adare House lay the cause of their hopelessness of Josephine's grief and of the gloom under which the half-breed had fallen so completely that night. Until they reached Adare House he could guess at nothing. And there—what would he find?

In spite of himself he felt creeping slowly over him a shuddering fear that he had not acknowledged before. The darkness deepening as the fire died away, the stillness of the night, the low wailing of a wind growing out of the north roused in him the unrest and doubt that sunshine and day had dispelled. An uneasy slumber came at last with this quiet. His mind was filled with fitful dreams. Again he was back with Radisson and MacTavish, listening to the foxes out on the barrens. He heard the Scotchman's moaning madness and listened to the blast of a storm. And then he heard a cry—a cry like that which MacTavish fancied he had heard in the wind an hour before he died. It was this dream-cry that roused him.

He sat up, and his face and hands were damp. It was black in the tent. Outside even the bit of wind had died away. He reached out a hand, groping for Jean. The half-breed's blankets had not been disturbed. Then for a few moments he sat very still, listening, and wondering if the cry had been real. As he sat tense and still in the half daze of the sleep it came again. It was the shrill laughing carnival of a loon out on the lake. More than once he had laughed at comrades who had shivered at that sound and covered until its echoes had died away in moaning walls. He understood now. He knew why the Indians called it moakwa—"the mad thing." He thought of MacTavish, and threw the blanket from his shoulders, and crawled out of the tent.

(To be continued.)



A Taste of Glorified Housekeeping—Part of the Exhibit of household appliances shown by the Hydro Electric at the Markdale Fair, Grey Co., Ont., in 1915.

The Upward Look

Travel Thought No. 34

Guidance.

TRACE me "Thy path, -O Lord, and lead me in a plain path," Psalm 27:11.

The trip through the Arrow and Kootenay Lakes was a rare and unexpected treat, combining as it did grandeur, beauty and interest. To reach them a boat was taken down the Okanagan Lake. Then came a railway trip through the Kettle Valley. That wonderful road rose up four thousand feet, from which heights we looked down on the Lake below. All day we wound in and out of and around gorges, canyons, peaks; sometimes the road was on the edge of these precipices. At sunset, we looked down four thousand feet on the wonderful blue-green waters of Arrow Lake, the mountains towering far above, and over all the glory of the sunset sky.

Next day we sailed through the Kootenay Lake, a grand study in blue; blue was the water, blue the sky; and blue, the distant lofty mountains. Over and over, and again and again on that day and on the day before both by boat and train, we could not see the lake ahead, so hemmed in were we on all sides, by those majestic heights. When we looked back, neither could we see the way by which we had come.

So many times those days I was reminded of the wonderful plan in life, in which God opens the way. Whenever we seem so hemmed in by difficulties that we cannot see what we are to do, always, in a blessed manner, a way is shown us.

Often, those days, I would think the outlet would be totally different from what it proved to be. So in life, God's plan for the outlet from our difficulties is so different from what we could possibly have planned. Although in looking back from the car window or the boat I could not see whence we had come, yet in looking back over our lives we can remember how wonderfully God has pointed out the way. So in the future can we not trust Him and confidently look for the way out.—I. H. N.

With the Household Editor

THE optimist and the pessimist.

The optimist sees the doughnut.

The pessimist sees the hole.

What a difference there is in people and their outlook on life. How often we meet women, probably at our institute meetings, who come in with a long face, looking as if they had lost the last friend they had. One woman complains that she was up about half the night before with the baby, who is teething. Another tells everyone to whom she is talking about her husband having rheumatism. Some other woman relates her woes along the line of either her ailments or those of some member of the family.

By and by another woman comes along and the atmosphere clears. What is the reason? Well, everyone likes Mrs. G.—, although none, perhaps, have stopped to figure out just why she is so popular. It is, however, because she has such a sunny personality. Everywhere she goes, she carries a sunny face and has a kind word for all whom she meets. And yet the people of her neighborhood know that Mrs. G.— has serious troubles to contend with, just as great and greater than those of some of her neighbors. She, however, has the happy faculty of tuning herself

to her surroundings and taking the best out of everything at hand.

How do we leave the folks as we meet them from day to day? Do we leave them happier and better contented with the world and the things in it? If so, we are fulfilling a mission worth while.

A Formula Which Will "Do the Business."

THERE are few homes that do not at some time require to be fumigated. This may be due to some contagious disease which some of the members of the family have had, when it is necessary to thoroughly fumigate to prevent infection. It is also often necessary to fumigate cellars or store rooms in order to get rid of fungus spots. Bad odors, due to the products of decay, fermentation and decomposition, can also be removed by the use of a proper fumigant. The best disinfecting and deodorizing agent is formaldehyde. The following information as to how to use this fumigant properly comes from the Colorado Agricultural College:

For each 1,000 cubic feet of space use 11 oz. potassium permanganate (crystals); solution formaldehyde (40 per cent.) 11 oz., and water 3 oz.

The cellar or room should be prepared for fumigation. The door should be closed-tight and made tight by means of pieces of felt or wet newspaper strips tacked to joints and threshold. All cracks, windows, ventilators, etc., should be sealed with wet newspaper strips or with felt. Prepare wet strips of paper beforehand to seal the last door after starting the disinfection.

Prepare fumigant as follows: Use an earthenware receptacle or a metal pail with tinned (not soldered) seams, holding not less than 1 1/2 quarts. Place the vessel on bricks which are standing in a pan of water. Moisten the walls and floor of room by sprinkling with boiling water. Next distribute the 11 ounces of potassium permanganate evenly over the bottom of the vessel. Mix the formaldehyde solution (11 oz.) and the water (3 oz.), and pour over the permanganate in the dish.

The operator should leave the room as quickly as possible and seal the door with the wet strips of paper. Leave the room sealed overnight, after which it can be opened and aired out.

If the room contains more than 1,000 cubic feet of space, use one of the above receptacles for each 1,000 cubic feet or fraction thereof. Never use a double charge in one receptacle holding 1 1/2 quarts.

A Good Motto

A COLORED gentleman entered his store to buy a pair of blankets. He was interested in two pairs, one at \$4, the other at \$6, and the dealer was pointing out the fine points of the better article. The purchaser replied that he had only \$4, whereupon the salesman suggested that he equate the \$4 pair and pay the difference later on. The reply of the colored man was this: "No, sah, I never hangs my hat higher up den I can reach."

Now, there's a whole sermon in the philosophy of that man, and you don't get no prize in compound, it either. Extravagance is contagious, and the insane desire to "keep up with the neighbors" may have much to do with a lot of trouble, the blame for which is laid elsewhere.

The motto of the colored man is well worth remembering, and also practicing: Never hang your hat higher than you can reach.

For Pie Crust

Bake with

Grisp Even and Flakey-

FIVE ROSES FLOUR

BISHOPRIC SHEATHING

will save you 25% in time and money in building, and make a better job. It takes the place of lumber and sheathing paper—is more quickly and easily applied—costs less—and makes buildings warm, dry and rot and vermin proof. Just the thing for stables, granaries, barns, poultry houses, cold storage rooms, workshops and factories.

Write for Booklets and samples of Bishopric Sheathing, Lath Board and Stucco Board, and Permatite Roofing, to

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Office & Factory - 560 Bank Street - Ottawa, Canada

THE FARMERS' SEEDSMAN SEEDS FIFTY YEARS SERVICE

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We pay railway freight on all orders in Ontario and Quebec over \$25.00. Write for our Complete Price List. For prices of Seed-Grain, Mangel and Root seeds see issue of May '18.

YOU WILL FIND SOME BARGAINS HER

ALPALFA.	Per Bus.		
Ont. Varigated No. 1	25.00		
2. No 2 for purity	18.00		
3. No 3 (Northern)	15.00		
4. Green No. 1	14.00		
5. Loyal's Grimm, No. 1	15.00		
6. Alberta Getson, No. 1	17.00		
7. North Western Grimm, No. 2	16.00		
8. SEED CORN (bags free), 1911 or 1915	70 lbs. growth	Per Bus. on cob.	
9. Wisconsin No. 7	\$2.00	\$2.75	
10. Golden Glow	2.00	2.00	
11. Blakey	2.00	1.75	
12. Leaning	2.00	1.75	
13. White Cap	2.00	1.85	
14. Longfellow	2.00	1.90	
15. N Dakota	2.00	1.90	
16. Compton	2.00	1.90	
17. We will show above corn for 10c a bus. extra.			
18. Stowell's Evergreen	15c	\$3.60	
19. Early Cory	15c	4.00	
20. Golden Banner	20c	4.50	
21. Siberian Millet		Bus.	
22. German or Golden Millst		\$2.15	
23. Common Millst		2.25	
24. Japanese Baryard		.07	
25. Potato Onions		.08	
26. Range (Dwarf) Kale		.10	
27. 1,000 Headed Kale		.22	
28. Sorghum (per 100 lbs.)		5.00	
29. Silverhulled Buckwheat		1.15	
30. Rye Buckwheat		1.35	
31. PEAS, ETC.			
32. Golden Vase Peas		\$2.15	
33. Chat Beauty Peas		2.10	
34. British Peas		2.15	
35. Prussian Blue		2.25	
36. Black-Eye Marrowfat		2.15	
37. POTATOES, Per Bag.			
38. Bureka, Cobler, Dakota, and Green Mount		\$2.25	
39. Main		\$2.25	
40. Dairy Gold		\$2.50	

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WE GUARANTEE Every advertiser in Farm and Dairy. You are therefore absolutely insured against loss if you mention Farm and Dairy when writing.

COOK'S CORNER

Rhubarb Recipes

As this is the rhubarb season, and as there are no more popular or healthful spring dishes than those in which rhubarb figures prominently, a few recipes may not be amiss.

Rhubarb Pie No. 1.

Two cups stewed rhubarb, 1 cup sugar, two tablespoons flour, one egg. Bake with two crusts.

Rhubarb Pie No. 2.

Line pie plate with paste and fill with two cups finely sliced rhubarb, one cup sugar (sprinkled over it). Cover with crust and bake in a moderate oven. If rhubarb and raisin pie is desired, add to the above one-half cup seeded and chopped raisins.

Note.—To keep the lower crust from being moist, before adding the filling, spread over it part of the white of an egg, and to keep pie from running over, moisten the edge of lower crust well with milk or cream, and press upper crust down tightly over it.

Rhubarb Date Pie.

Line a pie tin with rich paste, and lay on this a layer of stoned dates, fill up with stewed rhubarb, and bake with an upper crust.

Rhubarb Short Cake.

Four cups flour, two teaspoons cream of tartar, one teaspoon soda, one tablespoon sugar, salt, one-half cup butter, one egg, one large cup milk, stewed rhubarb. Sift together cream of tartar, soda, sugar and salt. Rub butter into dry ingredients, beat egg, add milk, stir into flour. Roll in two sheets about one-half inch thick, laying one sheet on top of the other. Bake in a hot oven. While hot, separate layers and spread, sandwich fashion, with stewed rhubarb. Sprinkle with sugar. Serve hot.

Rhubarb Pickle (For Cold Meats).

Four lbs. sliced rhubarb, two lbs. sugar, one and one-quarter cups vinegar, one teaspoon cinnamon, one teaspoon ground cloves, one teaspoon allspice, salt and pepper to taste. Stew all together.

Canned Rhubarb.

Slice tender rhubarb, (having first peeled and washed it) pack in sterilized sealers, fill with cold water, seal tightly, and keep in a cool dark place. This

will keep until the following winter; but the secret of success lies in having the sealers filled to overflowing with water. Fill sealer, then leave for a short time, and you can add more until there are no air spaces.

HOME CLUB

The Place of the "Talking Machine" in the Home

THE heading under which this letter appears, may sound rather suggestive and in case any Home Club member should misconstrue my meaning, I will hasten to make it clear. Sometimes we hear of a family where one member is particularly blessed with the gift of talking and as a consequence is dubbed a "talking machine." The machine I have in mind and the family talking machine are far removed, however, as the one to which I wish to draw the attention of the circle is the well-known Victrola.

"Give us some 'canned music' now!" is a favorite exclamation of friends

who come to our home to spend an evening. Our talking machine certainly furnishes a large part of our entertainment, both when we have visitors and when we are alone. Now that the warm evenings are here we take most pleasure in bringing the Victrola out on the veranda, and while one member of the family manipulates the instrument, the rest of us lounge about listening perhaps to a famous operatic artist, to the tinkling of a stringed orchestra, the lively strains of a band, a beautiful old-time melody, or one of the popular airs.

The merits of such a musical instrument in the country home are numerous. The opportunity of hearing good musical concerts is denied many music lovers who live on the farm, but those who have a good Victrola graphophone or phonograph need not be denied the privilege of hearing good music. Some of the most beautiful music which has ever been composed can be secured in the records for such machines.

These wonderful musical machines are now being put to many uses. I am reading a very interesting book in some parts of the United States, they are being placed in some of the schools and are proving invaluable. Pupils in gymnastics and callisthenics step to the rhythm of the graphophone and in the schoolroom and on

ISN'T it strange that men and women live on the farm for years and never see its beauties or the beauties of nature? We meet farm women who will tell us of the beautiful silk dress they saw in a shop window, but if we ask them if they noticed the lovely sunset last night they look at us in amazement; a sunset is so common that they seldom see it. To the farm people who fail to see all the beautiful things around them are missing joys of which they never dream. The call of the morning, the voice of the night, the billows where the moonlight falls softly,—who could help but notice all these? Yet there are many farm people who never see anything beyond the toil and drudgery of farm life. True, we must toil on the farm, but it is labor that leaves no stain on one's soul; and if we open our eyes to the beauties surrounding us we are all far better for it.—Farm Journal.

the playground, they march to the inspiring music of some splendid band or orchestra selections. In fact, manufacturers have now prepared records specially designed for school use, from the kindergarten up.

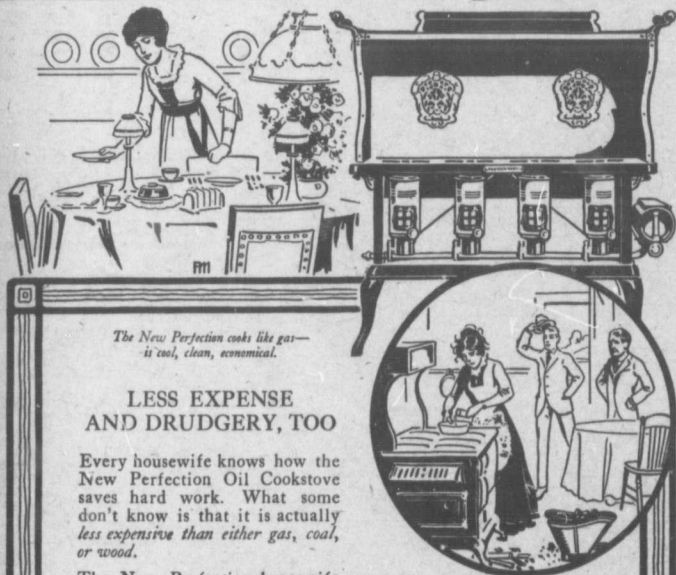
It may be some little time before we country people will feel that we can introduce the talking machine into our schools, but I would certainly urge those who have no musical instrument in their homes to save us a few milk or cream cheeses and purchase a Victrola graphophone, phonograph, talking machine, or whatever one may wish to call it.—Aunt Flossie.

RAILROAD COURTESY.

AS an express train was going through a station one of the passengers leaned too far out of the window, overbalanced and fell out. He fortunately landed on a sand heap, so that he did himself no great injury, but, with torn clothes and not a few bruises, said to a porter, who was standing by:

"What shall I do?"

"You're all right mister!" said the porter. "Your ticket allows you to stop off."—New York Globe.



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Dried Fruits
Apples
Apricots
Peas
Prunes
Sardines
Meats—
Beef,
Beef,
Chicken
Ham,
Mutton
Butter
Breads
Browns
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Timetable to Fireless Cooker

It may seem rather early in the season to be talking "fireless cookery," but now is really the time to get our summer improvements into working order. Too many of us have the habit of putting off the doing of things until we are confronted rather forcibly with the fact that the time when they are needed is at hand. A system of "preparation" is a splendid thing to cultivate.

More and more we read nowadays of the uses of the fireless cooker in the farm home, and no doubt many of our Women Folk will this year be installing either a home-made cooker or one of the many now available on the market. For the benefit of the uninitiated we publish herewith a timetable for the fireless cooker, recently issued from Cornell University. Of course we have to learn how to use the cooker to best advantage to a certain extent by experience, but a timetable such as the accompanying one should be of considerable assistance.

Food.	Proportion of food to water	Minutes boiling on the stove	Hours in the cooker
Cereals—			
Cornmeal	1 to 6	10	6 or all night
Cracked wheat	1 to 5	25	8 or all night
Cream of wheat	1 to 6	5	2 or all night
Farina	1 to 7	7	2 or all night
Hominy grits	1 to 5	16	2 or all night
Macaroni	1 to 4	5	2
Rice	1 to 4	5	2
Rolled oats	1 to 3	5	3 or all night
Vegetables—			
Beans, dried (soaked and cooked in the same water)	1 to 4	5	5 or more
Beans, string	1 to 1	2	2
Cabbage	1 to 1	2	1½
Carrots	1 to 1	2	2
Onions	1 to 1	2	2
Potatoes	1 to 1	2	2
Dried fruits—			
Apples	1 to 2	5	4 or all night
Prunes	1 to 2	5	4 or all night
Peaches	1 to 2	5	4 or all night
Prunes (soaked and cooked in the same water)	1 to 2	5	4 or all night
Meats—			
Beef, boiled		15	3
Beef, pot roast		30	5
Chicken, stewed		30	3
Ham, boiled		20	7
Mutton leg or shoulder, boiled		20	6
Mutton stew		10	4
Breads and puddings—			
Brown bread		30	5
Cup custard, steamed		1	1
Suet pudding		30	5

No Guess Work Here

Mrs. Geo. K. Robinson, L'Assomption, Que. **Q.** My mother was a good butter maker and so was my mother-in-law, but I scored one ahead by getting a dairy thermometer to test my cream. My husband has a spring balance, and when butter comes I weigh the tub of butter and put in an ounce of salt to a pound of butter. I stir the cream daily while gathering enough for a churning. We bought a De Laval No. 10 Centrifugal and are more than pleased with it. Yesterday we churned 4½ lbs. cream and had 17½ lbs. butter from it. We sell our butter in the village to the butcher and get 32 cents a pound for it. Our herd is about half pure-bred Ayrshires and the other half are high grades. We feed bran, olicake meal and chop. We have taken Farm and Dairy for 20 years and think it is getting better all the time.

Replenishing the Fruit Shelf

ABOUT this time of year our fruit cellars begin to take on a decidedly empty appearance. The shelves, which last fall groaned

under the weight of the dozens of gems filled with appetizing preserves have been gradually robbed during the winter and spring season until for every time we go to the shelf for fruit, we are apt to wonder how we can make it hold out much longer.

This problem can be lessened considerably if we will take a little time and make some additional preserves, jams, or jellies from dried fruits such as pears, peaches, apricots, prunes, cranberries, etc. In using dried fruits, a point that must be kept in mind is to wash thoroughly in warm water, removing any dust. A good plan, also, is to add a pinch of salt, which dislodges any insects that may be in the fruit. After washing, the fruit should always be soaked overnight, then cooked the next day in the same water in which it has been soaked. Dried fruits should not be allowed to boil, but rather to stew gently.

If allowed to soak for about 24 hours the skins of dried fruits can be removed with a sharp knife. Equal

Proportion of food to water	Minutes boiling on the stove	Hours in the cooker
1 to 6	10	6 or all night
1 to 5	25	8 or all night
1 to 6	5	2 or all night
1 to 7	7	2 or all night
1 to 5	16	2 or all night
1 to 4	5	2
1 to 4	5	2
1 to 3	5	3 or all night

parts of apricots and prunes make a good combination for butter or conserve, or either one may be combined with other fruits. Dried pears and peaches can also be pickled in the same way as fresh fruit, with the exception that less sugar is used. A berry that we do not as a rule think of using very often as a preserved fruit is the cranberry. Here is a recipe for making delicious conserves out of this fruit: Wash and cut the berries into halves, and to about two pounds of berries add one pound of seeded raisins, one orange sliced thin, a few chopped walnuts and about two pounds of sugar. We should not forget either to make use of oranges and lemons for marmalade, which is especially nice at this time of year.

This plan of adding to the fruit supply appeals to us as a good one. Frequent stirring of cream when ripening is conducive to uniformity in the process.

JOHNNY was telling his father and Uncle Will what he intended to get for them when he grew up big. "Well my little man," said his father, "where does mamma (just entering) come in?" "Why!" said Johnny seriously, "mamma comes in the door."

Adding to Kitchen Comfort

Mrs. H. M. Chapman, Glengarry Co., Ont.

THE tendency in too many of our homes, I believe, is to expend our greatest efforts in making the front of the house as attractive as possible, while we allow the kitchen to remain "just kitchen," and do not endeavor to make it one of the most pleasant rooms in the home. While I affairs fully realized this condition of affairs for some time in my own home, not until this spring have I been successful in having my kitchen appear anything like the pleasant workroom I have had in mind.

My kitchen, as is the case with the majority, was painted a dull, dingy grey, and this color certainly has a tendency to make a room gloomy. I had come to the conclusion that I would either have the woodwork stained and varnished, or painted white. I decided in favor of the white paint. It took three coats of paint to cover up the dark grey, but the result was well worth the expense. Some of my neighbors told me that I will find the white paint hard to keep clean looking. Of course I can't speak from being on long enough to am going to try out a scheme for cleaning this paint which I read about not long ago. Equal parts of sweet oil, turpentine and vinegar are stirred together and shaken well before using and rubbed until perfectly dry with a soft cloth. If it is necessary to use soap and water, this polish may be used immediately afterwards.

The walls of my kitchen needed repapering, so I got some of this wondrous paper, with a small tile design in green. People tell me that this style of paper washes off very nicely, and it harmonizes splendidly with the white paint. As I already had good linoleum on the floor I did not make any change there, simply giving the linoleum a coat of varnish to brighten it up.

Another decided improvement in my working equipment was to have my worktable set up on blocks, just at the right height so that I can do my work without stooping over the table. I did not realize just how much benefit this little change would accrue until I tried it out. I feel sure that I will appreciate this convenience even more on the hot days of summer, for work is always more trying in hot weather. I have made another provision for hot weather this year, too, however, so that I am not dreading the sweltering air as much as usual. Last week hubby and I went to town and invested in a four-burner coal-oil stove and an oven to use with it. This is a convenience that I have been looking forward to purchasing for several summers.

While my kitchen is not by any means fully equipped yet, I think we have made quite a transformation for one year. I believe my work to make additions next year, and, if possible, one will be a water system.

SOME MOUTHFUL.

WHEN old Peter arrived at the station with the goat he had brought to ship, the freight agent could find no tag. "Say, Uncle Peter!" he called, "What's this animal's destination?" "Sah!" "Where's this goat going?" Uncle Peter shuffled up and presently found the frayed end of the tag still attached to the rope about the animal's neck. In a huff he wrenched the tag from the goat and looking in, exclaimed, "Law! Marn Tom, dis yer fool goat done et de place whar he gwine ter!"—M. V. M. J.

Rusty cans are a menace to good milk. They have no place in the dairy.

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CANADIAN NORTHERN



Using Sewing Hours to Best Advantage

WHEN a great deal of sewing is to be done in the home, it is worth while to practice system so that one may accomplish the greatest amount of work along this line in the least possible time. Some people devote one day to the cutting out of garments, even cutting all collars, facings, pockets and other small pieces that belong to them. After a garment has been cut, it can be laid away and another one cut out. Then when one commences sewing, they can go right ahead without delays in cutting. This plan, of course, applies to plain sewing, such as underwear, aprons, little dresses for the children and so forth. No doubt many of our women folks have noticed the craze that is very apparent this season in the matter of silk suits. Almost every other person one meets nowadays is dressed in a silk suit. They are certainly very attractive and give a pleasing effect, and are not so very expensive. As it is more difficult now to secure the more substantial woolen materials than the silk. The styles this season, too, seem to be especially adapted to silk.

1711—Girl's Dress. This charming little frock would look very attractive if finished from striped material, trimmed with a contrast, probably of white. The low neck and short sleeves are most suitable to warm weather. Four sizes: 4, 5 and 10 years.

1708—Dress for Misses and Small Women. In a style of this design silk comes into prominence quite effectively, using it in combination with material of contrasting nature. The front and back panels and drapery effects could be featured in silk, while the body of skirt would be of another material. Three sizes: 16, 18 and 20 years.

1704—Lady's Kimono. This is a variation from any other kimono we have shown in our columns recently, and should therefore be received with favor. Such a lounging robe should be very easily constructed, as it is loose and flowing, therefore, requiring very little fitting. The ruffles at sleeves and collar add a finishing touch to the kimono. Three sizes: small, medium and large.

1714—Girl's Apron. The mother who is desirous of saving as much washing as possible, will no doubt welcome this

delighty little apron design. Such an apron should prove a great protection for the light dresses when playing, or after coming from school. Then in very hot weather, this apron could be worn without a dress, as it could be buttoned close up the back, thus giving it the appearance of a dress. Five sizes: 3, 4, 6, 8 and 10 years.

1720—Lady's Dress. Very large collar, as being featured just now, on dresses, coats, etc. Instead of the high, boned collar, which was fashionable a few months ago, many are wearing large, fancy collars, almost square in the back and narrowing down in front. On this dress, the large collar is a feature of the gown. The little vest also takes away from the plain appearance. Six sizes: 34 to 44 inches bust measure.

1702—Girl's Dress. This dainty little frock should prove a favorite model from which to fashion some of the dresses for summer. Such a style would look very fine constructed from many of the flowered materials shown for summer wear. Four sizes: 6, 8, 10 and 12 years.

1717—Lady's Dress. Anyone desiring a neat dress, fashioned somewhat in tailored effect, this model will no doubt appeal. The yoke, in both back and front of blouse, is a feature, also the pleats in blouse and skirt to match. Short sleeves may be worn if desired, as shown in the smaller sizes. Buttons and contrasting material for collar, cuffs and belt, are all the trimming necessary.

Our Spring and Summer Catalogue offer is still open, and we have many more of our Women's Fashions will send along 10 cents either when ordering patterns, which will secure a catalogue.

WILLING TO RISK IT.
"HERE, hold my horse a minute, will you?"
"Here! I'm a town councillor!"
"Never mind. You look honest. I'll take a chance."

THE IDEA.
LITTLE Frank was trying to sit up late, but had grown very sleepy. The victrola in whose honor bedtime had been retarded noted and made comment.
"I reckon you usually go to bed with the chickens," he said.
No, I don't," answered Frankie, interrupted. "I have a room all to myself."

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LEGAL COLUMN

Holidays on the Farm.—Will you please give me information as to whether or not a hired man is entitled to Sundays and legal holidays on the farm? I do not expect anything that is not right and legal, but I understand that the law applies equally to all, even in the country.—A. H. Hinton Co., Ont.

The question of whether a farm laborer is entitled to legal holidays depends primarily upon any particular agreement which may have been made between the employer and employee. In the absence of any specific arrangements as to this, the custom of the neighborhood prevails. It is usually the custom that on Sundays and legal holidays no more work than that which is absolutely necessary is done, and the employer usually allows his men the day after those duties, usually called chores, which are necessary for that day, are performed.

Removing Trees.—A and B have land adjoining, on which several elm trees are growing along the line, and some right of line. Can B cut and remove any or all of those trees for his own use, without the knowledge or consent? Can A claim any of those, or value thereof, when he finds they are cut? The trees belong to A, and trees have been protected by good fences.—H. C. Hastings Co., Ont.

Growing trees belong to the owner of the land on which they stand. If a tree is on the dividing line, each owner would have a share in same, and the tree cannot be interfered with but by the consent of both owners. If a tree standing on the line were cut down by one of the adjacent owners, the other owner would have the right of action against the one so cutting the tree for his share of the wood. B is entitled to cut down any trees that are wholly on his property.

Ownership of Hay Fork.—A sells stock, implements and loose effects to B, and afterwards the farm to C. In the horse fork car, a chisel, and can B remove it, or has C a right to claim same as a fixture through purchase of the farm?—W. L. H. Lenzon Co., Ont.

Unless there is some agreement to the contrary, the horse fork car has become a fixture, and must pass with the freehold to the purchaser of the farm. The general rule in these matters is that anything becoming affixed to the freehold, or to some thing which had been previously made part of the freehold, because what is called in law a fixture, and goes with the land. In this instance we understand that the truck could be lifted from the track, and no doubt this has been the cause of the dispute.

There has been a similar case decided in our courts, where a hay-fork was part of a plant consisting of a track, a truck, pulleys, a rope, and the fork. The track was fastened with bolts or screws to the barn floor. With respect to a chisel, the truck would be useless; in fact, each of the articles was a joint in the whole, and the whole would be useless without its part, or without any one of them. These conditions are, apparently, similar to the case in hand, and in that case it was held that the hay-fork was a fixture, and the circumstance that it could be used again in connection with another track, truck, pulleys, and rope, of similar kind and dimensions, did not deprive it of its character.

So then, in case there has been no special agreement with regard to this horse fork car, it goes to 'C', the purchaser of the farm.

Farm Machinery—25 Years Ago and Now

(Continued from page 7.)

to pass. The fork which had a single line was only used for unloading hay and after being pushed into the load, on the wagon, and the prongs at the side opened out, the

horse was started and such hay as remained attached to the fork was trailed up an incline to the back of the mow. Of course, such a crude affair did not clear the load up very closely, and half of it had to be pitched by hand after this fork was through. It was, however, looked upon as a great convenience in its day, and was by far the oldest implement of any description which remained on the farm.

I will remember the first cultivator that we bought. It was a rigid framed affair and the first we had ever seen which allowed the teeth to be taken out of the ground. It was called the file harrow and did good work, but was not very well suited to rough ground, so that when the sectional cultivator came in, it was soon put out of business. It had a great sale in advance of anything that had previously appeared on the market and saved a great deal of spring plowing.

Our mower was the first in the neighborhood, though I cannot tell that time. It was made by the same firm as the old Harvest Queen reaper. It was narrow, only cutting four feet wide and was speeded a little slow, so that it was pretty hard to keep it going in heavy hay that was at all damp. Otherwise it did just as good work as the up-to-date machines that I use on the farms around us here.

There are, of course, some machines that are out of the way to me. The two-row corn cultivator was not in use when I quit farming. The disc sower has also made its appearance, as well as the hay loader and the side delivery rake. Gasoline engines on the farm were also new. The cream separator was not commonly used 25 years ago, and I understand that the milking machine has never been used in use. I also notice that instead of the old fashioned threshing machines had straw carriers instead, they are now using machines with blowers and self feeders. Of all the improvements in farm machinery, those in threshing machines seem to be the most advantageous to the farmer. I remember when we used to have to attend every threshing within a mile and a half of our gate in order to have enough men to operate the old fashioned machine. The result was that although there were plenty of men compared with what there is now, our fall work was seriously interfered with.

With rural depopulation as acute as it is in most sections, if we had to depend on the old fashioned machine, we would have to trade work with practically every neighbor within two and one-half miles, to get one's threshing done. We would, therefore, get very little fall work done. This I consider very important for fall work well cleaned up means a quick, early seeding and results in better crops. I do not wish to convey the impression that I do not think any improvement has been made in implements during the last 25 years, but these improvements are not so great in the commonest machines as some would appear to think. The old implements did good work and modern implements copy them largely in detail, the greatest difference being that they are larger in size. This is probably due to the scarcity of farm help at the present time compared with what it was in Ontario 25 years ago and which forces farmers to devise some method by which a man can drive more horses.

Many cows highly recommended have been a disappointment to the purchaser and the cause of much hard feeling. In many cases good feeding would have brought satisfaction all round.



Get all your Cows Earn

Every milch cow in your herd earned a nice profit for you that your separator failed to deliver. Where did the money go? Let us show you.

Every separator (except the New Sharples) loses cream if not turned at the exact speed marked on its crank. Experiment Stations and independent researches have brought out the surprising fact that 19 out of every 20 separator users turn their machines under speed and thus lose \$2.40 to \$12 per cow per year. (See Purdue Bulletin No. 116).

The New Sharples skims clean whether turned fast or slow. It will get you this extra profit your cows make for you, but which your fixed Separator throws away.

THE NEW SHARPLES SUCTION-FEED

Separator feeds the milk into the bowl in exact proportion to the separating force. At 45 revolutions it skims clean; at 55 revolutions it skims clean; and at 35 revolutions it skims equally clean and always with even quality cream. No other separator has these two valuable features—clean skimming and unchanging density of cream at varying speeds.

The Suction-feed Separator has other important advantages. The hollow tubular bowl is easy to clean and easy to handle. There are no discs to wash. The oiling is automatic; no oil-caps or oil-holes; no dripping or muzzing of oil; no oil waste. The top of the large supply-can is only two feet from the floor—a great convenience in filling.

These are some of the reasons why you should have a New Sharples and get all the cream money all the time.

Read the full story in our new book "Velvet" for Dairymen which also explains our free trial plan. We will gladly send you a copy. Ask for it—now. Address Dept. 77.

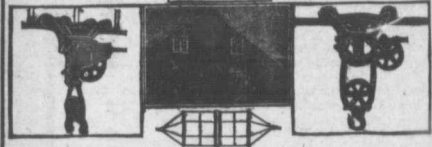


Easily and quickly cleaned. Once a month is sufficient.

The Sharples Separator Co.
Toronto, Canada

IN HAY TIME & HARVEST

LOUDEN HAY TOOLS



FOR QUICK WORK

The Louden Carry-All Sling Carrier is the best and strongest Carrier made. It is constructed to work in any type or size of barn, and to carry large heavy loads.

Tested under loads weighing over 1,000 pounds, and with all kinds of power it made good. In 18 months of use it has proved its efficiency and its strength.

Rope wheel in Carrier is 10 inches in diameter, and is roller bearing.

Track wheels on Truck 3 inches in diameter.

Bearing surface on Truck 19 inches. Carries Sling within 26 inches of the Track.

The Louden Senior Hay Fork Carrier meets the demand for a Carrier possessing that extra strength and power necessary for the safe handling of extra big loads. It is a Swivel carrier and will do excellent work, whether the hay is taken up from the end of the barn or from a centre drive; way.

Rope wheels are 7 inches in diameter and are fitted with roller bearings.

Track wheels on truck 3 inches in diameter.

Bearing surface on Truck 13 inches. Carries Fork within 20 inches of the track.

WRITE FOR CATALOGUE. IT IS FREE.

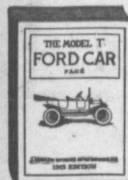
LOUDEN MACHINERY CO.

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VANCOUVER, B.C. WINNIPEG, MAN. ST. JOHN, N.B.

MR. FORD OWNER

here is the book you've been looking for



The book that answers all your questions and saves you dollars on your car is

The Model T Ford Car

Its Construction, Operation and Repair

By
VICTOR W. PAGE

This is the most complete construction book yet published on the Ford Car. A high grade cloth bound book, printed on the best paper, illustrated by specially made drawings and photographs. The construction is fully treated, and operating principles made clear to everyone. Every detail is treated and explained in a non-technical yet thorough manner. Nothing is left for you to guess at. The Ford owner, with this book at hand, has an infallible guide in making every repair that may be necessary. The book is written for Ford drivers and owners, by an expert who has driven and repaired Ford cars for a number of years. The illustrated chapter on overhauling and repairing alone is worth many times the price of the book. If you own a Ford you want this book. Write us for it to-night.

PRICE \$1.00

BOOK DEPARTMENT

FARM & DAIRY

Peterboro, Ont.

The Makers' Corner

Butter and cheese makers are invited to send contributions to this department. We have space for matters relating to cheese making, and to suggest subjects for discussion.

Relief Promised for Rennet Situation

ALTHOUGH some cheese factories are being greatly inconvenienced by the scarcity of rennet that exists just now it appears that relief is in sight. Farm and Dairy has been in communication with Dairy commissioner Ruddick and Prof. H. H. Dean, regarding the rennet shortage, and the following letters have been received: They indicate that a serious shortage may be averted. Mr. Ruddick writes:

I have your letter on the subject of rennet. The situation is certainly rather serious, but as far as I can find out, there is satisfaction for charging \$7.00 per gallon for extract. I have been in correspondence with the manufacturers on this subject and they tell me that they are selling rennet extract in New York State at \$4.00 per wine gallon. The duty is 7 1/2 per cent, which would bring the imperial gallon to only a little over \$5.00 in this country on the same basis. The manufacturers seem hopeful of being able to supply a sufficient quantity to meet the needs of the season.

I am advising cheese makers to try scale rennet. We have experimented with it at Finch, and found it quite satisfactory. It can be procured from Armour & Co., Chicago. We are working at Finch on some other substitutes, and hope to have a statement to make very shortly.

It is rather late in the season to secure many calves' Rennets in this country. If the cheese makers had only taken an interest in the matter at the proper season, a large number of Rennets could have been collected. Some makers secured their season's supply of rennet in this way, but generally speaking, we have found it very difficult to awaken the cheese factory interests to the seriousness of the situation. Our circular was intended chiefly to encourage the savings of Rennets by the farmers for the local cheese maker, but if the cheese maker did not care to handle them the alternative was to sell them to the extract manufacturers. Steps have been taken, ever since the war broke out, to encourage the collection of Rennets at abattoirs, packing houses and other places where large numbers of calves are killed, and the results have been fairly satisfactory. The Long Chemical Company, 1713 Dundas St., Toronto, in a letter dated the 2nd instant, stated that they have organized a small company to undertake the manufacture of rennet extract in Canada. I have been assisting them to get in touch with the sources of supply of raw Rennets.

This Department has been fully alive to the dangers of the situation from the very first outbreak of the war, knowing as we do that the supply of raw Rennets come very largely from Central European countries. Rumania has lately become a source of supply, and for a time the Russian Government placed an embargo on the export of Rennets, but I understand 500,000 which were held up at Archangel for a long time, have now been released. These have not yet reached the extract manufacturers, but they are hoping to get them in time so that it will relieve the situation considerably.

New Manufactured in Canada. Prof. Dean writes as follows:

Regarding the rennet problem, we

had a call this spring from the Manager of Chr. Hansen's Laboratory, Little Falls, N. Y., and he said they would be prepared to start a factory at any time in Canada, if conditions warranted the same. His view was that they could send their goods more economically from Little Falls than they could from a factory in Canada. I pointed out to him that there were two strong reasons why rennet should be made in Canada, (1) sentiment, because the "Made in Canada" spirit, which is so prominent everywhere, and (2) the danger of the American Government prohibiting the exports of rennet from the United States. I am pleased to say that Mr. A. L. Long, 1712 Dundas St., Toronto, writes me that he is now in a position to furnish two hundred gallons of rennet every two weeks to Canadian cheesemakers. We have letters to this rennet and find that it is equally as strong as Hansen's, though not quite so clear and pleasing in appearance as the American goods.

I may also mention that we have secured fifty Rennets (stomachs) from the Armour & Co., Hamilton, and are making rennet, which we are using in experimental work, and comparing it with the commercial extract, which work is now completed, but the results indicate that a cheesemaker can make his own rennet if he can secure the calves' stomachs. There ought to be a strong campaign urging butchers and every one who kills calves to save the stomachs, but until there is a steady market assured for such, we are not likely to make much headway. We have urged the Government to take this matter up.

I may also say that we are using pepin and a mixture of pepin and rennet for coagulating milk for cheese-making, with very good results.

Effect of Heating on Separation

Five different series of experiments were carried out to determine the influence of being milk on the efficiency of the natural separation of cream from milk. The results of these experiments are collected in several tables and may be summarized as follows:

1. Of the changes produced in milk on heating to temperatures below boiling point, those which exert an influence on the separation of the cream demand particular attention since they show considerable and easily measured variations for small differences of temperature.

2. These variations may be observed already at temperatures much below the coagulating point of the protein; for instance heating for 30 minutes at 55 degrees C., and may result in an acceleration or retardation of the separation of the cream according to the particular temperature.

3. Acceleration is distinct at 55 degrees C. and increases with the temperature to a maximum of about 61 degrees C., after which it diminishes, and between 63 degrees and 64 degrees C. and probably a little below the latter temperature it changes rapidly and a retardation begins. This temperature can therefore be regarded as the critical temperature for the action of heat on the separating cream, heating to 55 degrees for 30 minutes causes a very remarkable retardation in the separation of cream compared with that of raw milk.

The writer points out the desirability from both a practical and theoretical standpoint, of an extension of these researches, in view of the extreme sensitiveness to heat of certain constituents of the milk, so as to obtain information as to the extent to which their just value the changes produced in milk by any heating process.

By means of a more complete knowledge of this critical temperature it

(Continued on page 24.)

50 YEARS SPLENDID SERVICE

Still Skims Close as New!

Fifty years of hard twice a-day service is the test to which we put the first Magnet ever built. It is to-day in our factory skimming as clean as if newly built, though it has had over 40,000 runs. Write J. W. Cook, of West Lorne, Ont., who will tell you that he has run a Magnet for 15 years only paying about two dollars for new brushes, rubber rings, etc. Dozens of Magnet owners are proud of the fifteen and more years of service, glad that it has cost next to nothing for repairs, enthusiastic because it is always so easy to turn and to clean.

The Sturdiest Machine on the Market. Every Feature is Exclusive and Adds Years to the Life of the Machine.

Look at this wonderful separator—the solid construction. Weight is low down so that it steadies the machine and allows skimming even on rough uneven ground. Every part is made from sound materials—frame from finest longer the spindle will last because the bowl is supported top and bottom on bronze cushion bearings. Square gears, too, which are more expensive to build than worm gears but last a lifetime and do not wear away. The whole construction is simplicity itself. The Magnet wrench is the only tool you require to make adjustments.

Proud Enthusiastic Owners in Every Province.

In every province you will find an owner of the Magnet. Get our catalog. Scores of testimonials are to be seen in it—many of them from your own neighborhood. You can ask some of these owners what kind of service they have got from their Magnets. Write them—they know the Magnet will stand up to the test of years of use. We are glad to receive word from Magnet owners, because it is all praise, enthusiastic praise.

Even Children Operate the MAGNET

There never was any separator so easy to handle as the Magnet. At seven years old, Edna Vipond (Donoga, Ont.), could put together the Magnet, get up speed and skim the milk without trouble or help. You will read in our catalog of others as young. The "Magnet" skimmer, bowl supported at top and bottom, and square gears that have the left to carry the load explain this big advantage of work.

Easy to Clean The one-piece skimmer of the Magnet is closed with a cloth by hand. No sousing of discs in hot water—discs are not used in the Magnet. No chinks or cracks in the bowl or tank. Every part is easily reached by hand. No awkward bends in the spouts. Magnet spouts are cleaned without trouble with our lurches.

Saves Dollars and Time in the Dairy Every drop of cream is delivered by the one-piece Magnet skimmer—the cleanest, most effective, skimmer ever devised. You lose dollars in the cream that escapes from a cheap machine but you save dollars with a Magnet. The lowest repair cost of any separator made. Little oiling required. Saves hours of valuable time wanted in cleaning disc-skimming machines. And it skims anywhere—no need to screw down to level floor.

Free Library of Dairy Books.

Have a FREE Demonstration in Your Own Dairy. Write To-Day.



MAGNET CREAM SEPARATORS

SPECIAL MAGNET FEATURES

SQUARE GEARS—Cheap machines run on worm-gears which wear out quickly, bind on the spindle and snap it. The Magnet's gears are square, made of heavy steel and bronze. They have the left to carry the weight of milk when poured. In—no sudden check-up of speed. Matched as finely as a watch, cannot wear, need not be bathed in oil.

ONE-PIECE SKIMMER—Different in design from any other skimmer made. Skims clean from the very last drop of milk. Tested up to 95 per cent. cream. Open too, so that it never clogs with scum or dirt and is easy to clean with a cloth.

DOUBLE-SUPPORTED BOWL—Magnet Bowl is made of best steel. Supported on spindle that runs on ball bearings. Cannot wobble from side to side because it is supported at each end. Skimming can be done just as perfectly even on rough ground or uneven floor. No other separator has bowl supported like Magnet at both top and bottom.

GROWS WITH YOUR HERD—When you need to increase the capacity of your separator the Magnet can be adjusted at our nearest branch so as to skim faster. You need not buy a new machine. These adjustments are effective and cost very little.

Read What Others Say in These Splendid Books

Mail the attached coupon to-day. We will gladly send you by return mail interesting literature about dairying together with our big catalog. This beautiful catalog illustrates every feature of the Magnet and contains letters from farmers in every province telling of Magnet service.

Operated in Your Own Dairy

You can see the Magnet in operation at your own home. Free of any cost or obligation to you whatsoever, we will, on receiving the coupon below bring a Magnet to your dairy and allow you to test it with milk from your own herd. Write to-day and take advantage of this offer.

7 Year Old Child Can Run a Magnet.

The Petrie Manufacturing Co.

HAMILTON WINNIPEG REGINA Limited EDMONTON VANCOUVER MONTREAL CALGARY ST. JOHN, N.B.

FREE

THE PETRIE MFG. CO., LTD.

WRITE NEAREST BRANCH

Square Gears Solid Construction Double-Supported Bowl One-Piece Skimmer

Very Small Repair Cost in a Lifetime of Use DEMONSTRATED in Your Own Dairy FREE

Please send me your Catalog. Give me a FREE Demonstration.

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LONDON "BANDY" Electric Motor Car for Sale in Five Days. It is now only \$14.00 of course or in other. Send for catalogue No. 1. E. London Electric Machinery Co. World's Largest Manufacturers of Domestic Ma. It is...

IT WILL PAY YOU to mention The Farm and Dairy when writing to our advertisers.

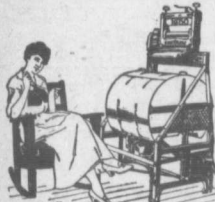
Effect of Heating on Separation

(Continued from page 22.)
will perhaps be possible to find before long a definite solution on scientific grounds of the question of the best temperature for pasteurization. Certainly the determination of the rapidity of the natural separation of cream combined with the bacteriological analyses of heated milk will be of the greatest value in examining the various processes for the pasteurization of milk—Bulletin of Foreign Agricultural Intelligence.

Sheep and Bees and Honey

By Rev. J. M. Lewis.

Bob was a shepherd who pastured twenty sheep. They browsed around the meadow where the grass was long and deep; but when the leaves had fallen and November winds were chill, out in the open meadow they could not get their fill. Bob, he kindly put them in a well-protected shed,



Highest Award Gold Medal, San Francisco Exposition.

Your Washing Done For 2c. a Week

Electric or Water Power Will Do The Work

I have built a new "1909" power washing machine. I consider this machine the most wonderful washer ever put on the market. Entirely of high quality sheet copper, it is the strongest and most durable machine made. It is constructed on a brand new principle, and I will guarantee that this machine will not tear clothes, break buttons, or fray the edges of the most delicate fabric. It will wash everything from heavy blankets to the finest lace without damage to the goods.

This new "1909" washing machine can be connected with any electric socket instantly, and it is started and stopped by a "little twist of the wrist," and it will do your washing for 3 cents a week.

If you would consider fitting up your laundry room in the most complete and approved manner, let us tell you also about our thoroughly practical motor-driven, self-starting ironing machines.

I also make a lighter power machine which can run by gas or electric power. On all of these machines the motor will run the wringer, too. Just feed in the clothes and this power wringer will squeeze the water out of mucky and smelly you will be astonished. It will save 10 per cent. time, money and labor every week. The outfit consists of washer and wringer, and either electric or water motor, as you prefer, and I guarantee the perfect working of each.

I will send my machine on 30 days' free trial. You do not need to pay a penny until you are satisfied. This washer will do what I say it will. Write to-day for illustrated catalogue.

Let us tell you how you can do your churning with this most highly effective electric motor. Address me personally.

G. L. MORRIS, Manager, NINETEEN HUNDRED WASHER CO. 357 Yonge Street, Toronto.

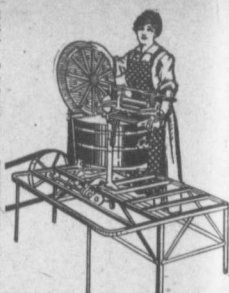
NOTE: State whether you prefer washer to operate by Gas, Engine Power, Water or Electric Motor. Our "1909" line is very complete and cannot be fully described in a single booklet.

th hay enough to feed them in the of up overhead. But the seed kept falling down, and it lodged amidst their wool, and there it safely staved till the April moon was full.

And then went those muttons out in the rain, you know, and in less than twenty days the seed began to grow; and it grew and kept on growing like the bean in fairy song, till the grass upon their backs was at least two

inches long. And Bob, he expected that, later in the year, the fragrant clover blossoms would certainly appear.

The moral of this tale is clear to every eye—that by judicious management (if a person cares to try), he may with little trouble when the days are warm and sunny, have the sheep supply the nectar for the bees to make the honey.



Take the "Blue" out of Monday
Hit the farm engine to a Page Power Washer

and immediately you take the drudgery out of wash day. No longer need you toil for hours over a tub—here's a servant that will do the heaviest week's wash in less than an hour—and at a cost of about 1 cent per week. The "Page" is the simplest, strongest and most easily-operated machine of its kind—a combined washing and wringing outfit that washes clothes clean and without the slightest injury to delicate fabrics. Our belief in the Page Washer is shown by our willingness to let you have it to try, with a wide-open offer to take it back at our own expense if you are not entirely satisfied with it. Price \$35.00—delivered anywhere in Ontario.

The Page Wire Fence Co., Ltd. 1130 King St. W., Toronto.



University Fudge

The Lantic Sugar Cook Book gives the recipe for this and many other new sweets. Send a red ball trade-mark, cut from a Lantic package, for a free copy.

Lantic Sugar

"The All-Purpose Sugar" will please you by its purity, convenience and high sweetening power.

The Sugar with the red ball trade-mark Packed in 100-lb. Bags

For book, address Atlantic Sugar Refineries, Ltd. Power Building, MONTREAL 11.

Market Review and Forecast

TORONTO, May 23.—The late opening of the spring season, followed by continued wet weather, has made this the latest seedling experienced in many years. It was estimated on May 24th that less than two-thirds of the grain was in the ground, only on high or light soils will seedling be completed even in a reasonable time. Reports coming in from the counties indicate that practically no seed is in the ground in some of the low wet districts. Some farmers are plowing up soil land otherwise intended for hay, when such happens to be on higher parts of their farms. Warm weather, with an abundance of moisture already in the ground would, however, soon make up for late seeding, and farmers are still optimistic in most sections regarding the prospects of a good harvest.

Seeding reports indicate that the West has recovered to some extent from the lateness with which the spring opened. The last fortnightly crop bulletin issued at Regina shows that on May 15th 90 per cent. of Saskatchewan's wheat crop was in the ground, that some of it was coming through. Instances being reported of wheat having attained the height of three inches. In Alberta, though the spring was late, conditions are more favorable. In Manitoba almost the same conditions exist as in Saskatchewan.

WHEAT.

The heavy crop last year has not yet been all marketed, and receipts at the latter point are heavy. Reports from considerable wheat is being marketed at local elevators. Indications from all quarters indicate a considerable falling off in the acreage under wheat this year, 25 per cent. being the estimated reduction in Dakota and Minnesota, with at least an equal falling off in Western Canada. In spite of this the wheat market shows

considerable weakness, though it recovered somewhat from the decline of the first part of the week. No. 1 Northern is now quoted at Jago points at \$1.32; No. 2, \$1.30 $\frac{1}{2}$; No. 3, \$1.16 $\frac{1}{2}$; Ontario wheat, No. 1, commercial, \$1.02 to \$1.03; No. 2, \$1 to \$1.01; No. 3, 97c to 98c; feed wheat, 92c to 93c.

COARSE GRAINS.

In spite of the large crop of last year local demands appear to have been sufficient to absorb available supplies. Dealers have found a healthy market for feed oats and at a premium for good stuff. Corn suffered a bad break. Quotations with reference to Oats, C. W. No. 2, 53 $\frac{1}{2}$ ¢; No. 3, 52 $\frac{1}{2}$ ¢; No. 1 extra feed, 62 $\frac{1}{2}$ ¢; No. 1 feed, 54 $\frac{1}{2}$ ¢; Ontario oats, No. 3, white, 48c to 49c; American corn, No. 2, 78 $\frac{1}{2}$ ¢; Canadian, feed, nominal, 77c to 78c; barley, malting, outside, 66c to 67c; No. 2, feed, 53c to 54c; peas, No. 2, nominal, per car lot, \$1.70; according to sample, \$1.25 to \$1.50; buckwheat, 70c to 71c; rye, No. 1, commercial, 59c to 60c; No. 2, 57c to 58c; No. 3, 54 $\frac{1}{2}$ ¢; No. 1 feed, 53c; local white, 49 $\frac{1}{2}$ ¢ to 50c; barley, malting, 74c to 75c; feed, 60c to 72c; corn, American, No. 2, 83c.

MILL FEEDS.

Quotations on this market remain unchanged. Bran, 53 $\frac{1}{2}$ ¢; shorts, 52¢; middlings, 48c to 57¢; feed flour, \$1.70 to \$1.75 a bag. At Montreal bran is quoted 53 $\frac{1}{2}$ ¢; shorts, 52¢; middlings, 48c to 50c; molasses, 30¢ to 34¢.

HAY AND STRAW.

Quotations on hay are dropped slightly from those of last week, local merchants now paying \$20 to \$22 for best grade, \$17 to \$18 for low grade; baled straw, \$7 to \$8. At Montreal No. 2 hay is quoted \$20.50 to \$21.50.

PATATOES AND BEANS.

On this market Ontario are quoted

Davenport Beds \$33.75

A couch by day and a bed at night. This Davenport has selected quartered oak upholstered in best leathered cloth. Choice of sizes 4 ft. long or 4 ft. long; other opens to a full-size bed, with separate spring and felt mattress.

One of the many splendid values in our illustrated

Catalogue No. 25

which contains hundreds of photographic samples of our furniture and is returned freight paid to any address in Ontario.

The Adams Furniture Co., Limited, Toronto

Highest Cash Prices Paid For

Wool, Hides, Calskins, Horsehides, Sheepskins. Write for quotations. Consignments Solicited.

H. A. PERRY, PHONE P. O. Box 894, Peterboro, Ontario

HINMAN THE UNIVERSAL MILKER

The price of Hinman Milker is at present \$50.00 per unit. Under existing conditions price will soon go up.

Write for Booklet D.

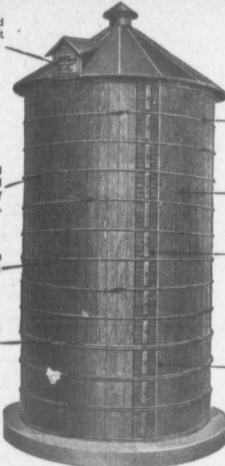
H. F. BAILEY & SON GALT, ONTARIO

Sole Manufacturers for Canada Under HINMAN PATENTS

MADE IN CANADA

Receipts and deductions
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3rd week
4th week
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99th week
100th week

THE PREMIER PERFECT SILO



Large and convenient dormer window

Drop forged eye to a rigid coupling of great strength.

Threads extra long and well machined.

Hexagonal nuts easy to adjust.

"Perfection in silo construction."

Half-inch galvanized steel cable. Very strong and flexible.

Staves of 2x6 Norway Pine.

Adjustable airtight doors—all one size and interchangeable.

Door frame strong and rigid, cannot get out of shape.

Free book on silo construction on request to "Silo Dept."

THE PREMIER CREAM SEPARATOR CO., 659-661 King St. West, Toronto



Homeseekers Excursions

Every Tuesday, March to October
"All Rail"
Every Wednesday During Season Navigation
"Great Lakes Route"

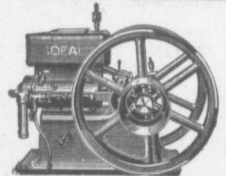
Somewhere out on the prairies where last year Canada's Greatest Wheat Crop was produced there is a home waiting for you. The

CANADIAN PACIFIC

will take you there, give you all the information about the best places, and help you to succeed. :: :: :: :: ::

Particulars from any Canadian Pacific Ticket Agent, or write W. B. Howard, District Passenger Agent, Toronto.

"IDEAL" POWER



For Busy Dairy Farmers

Farm help will be scarce in Ontario this season, and it essential that we keep production up to the maximum. More of our farm work must be done by machinery. The farmer who realizes this and equips his farm with efficient power machinery is true to his own best interests and patriotic to his country.

BRANTFORD POWER MACHINERY WILL REPLACE YOUR HIRED MAN AT THE FRONT.

WE made gasoline engines over 15 years ago—and we are making them yet. We are the oldest and largest manufacturers of gas, gasoline and kerosene engines in Canada, and build a line unparalld and suited to every purpose. Our newest type of engine is designed to use either gasoline, naphtha or common coal oil. Every man who uses an engine knows what this will mean in keeping down operating expense. Gasoline to-day costs 32 cents, coal oil costs only 15 cents. Our experts have so perfected the "IDEAL" combination in running on coal oil and naphtha that we can produce identically the same amount of power from a gallon of coal oil as from a gallon of gasoline and at half the expense. This great success is due to our special Carburetor and Patent Water-Valve Mechanism, invented by

us and controlled under patent. If you are in the market to buy an engine, be just to yourself and do not overlook this feature in Brantford Engines.

Every "IDEAL" engine is guaranteed to develop the horse power for which it is built. Our factory is fitted with the most up-to-date and latest equipment. Only the best of materials are used and every engine is thoroughly and severely tested before it leaves the factory. Our engines are made in sizes from one and one-half to 65 horse power. Send for our engine catalogue, asking full particulars about our combination in which either gasoline or coal oil can be used. In the "IDEAL" you are assured of an engine that you won't have to "scrap" in two or three years.

BRANTFORD "IDEAL" WINDMILLS



"EVERY Wind that Blows" can be made to work on your farm this summer when help is scarce, if you are equipped with an "IDEAL" windmill. And you'll get all the power there's in the wind. Brantford windmills are backed with twenty-three years' hard experience and honest dealing. Our windmills are to be found in every civilized country on earth. They have every good feature that experience and invention have provided. In 1903 the Royal Agricultural of England held a two-month trial of windmills, in which twenty-three competitive windmills from all over the world were entered. Our mill clearly out-distanced all others by pumping 50 per cent. more water than its nearest competitor, without showing the least signs of wear. If you want a windmill with such a record—a mill that will last a lifetime and longer, buy an "IDEAL." Our Windmill Catalogue is yours on request.

We also make full lines of Pumps, Tanks, Steel Saw Frames, Water Supply Goods, Etc.

BRANTFORD "Maple Leaf" GRAIN GRINDERS

A GRINDER to-day is considered necessary on every farm where much stock is kept. We foresee this demand and started making grinders over twenty years ago. The result is that to-day we have on the market a grinder designed and developed in our own shop, containing a great many valuable features essential in a good machine, and which are to be found in our grinders alone. We prize these features and they are strongly protected by patents. The same close care is taken in testing our grinders as in our other machinery. Each grinder is run and thoroughly inspected before it leaves our factory. This year in particular you will value both the time and the labor saved in chopping at home. Get a "MAPLE LEAF"—thirty-five thousand of which are in use to-day. Send for our Grinder Catalogue.



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AN OIL FOR EVERY BEARING

FOR every part of every machine there is one oil which will lubricate most efficiently and economically that particular bearing surface. Finding the right oil means saving money and lengthening the life of the machine.

The Imperial Oil Company makes a special oil exactly suited to every part. Here are some of them:

STANDARD GAS ENGINE OIL

Recommended by leading builders for all types of internal combustion engines, whether tractor or stationary, gasoline or kerosene. It keeps its body at high temperature, is practically free from carbon, and is absolutely uniform in quality.

PRAIRIE HARVESTER OIL

An excellent all-round lubricant for exposed bearings of harvesters and other farm machinery. Stays on the bearings; will not gum or corrode.

CAPITOL CYLINDER OIL

The most effective and economical lubricant for steam engine cylinders; proven superior in practical competition with other cylinder oils.

ELDORADO CASTOR OIL

A high-grade, thick-bodied oil for lubricating the loose bearings of farm machinery, sawmills and factory shafting.

THRESHER HARD OIL

Keeps the cool bearing *cool*. Does not depend on heat or friction to cause it to lubricate.

STEEL BARRELS—All our oils can be obtained in 28-gallon and 45-gallon steel barrels. These barrels save their cost by eliminating leakage. You use every drop you pay for. Clean and convenient.

If your lubricating problem gives you trouble, let us help you. Tell us the machine, the make, the part—and we will gladly give you the benefit of our experience.

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