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# The CANADIAN THRESHERMAN AND FARMER

WINNIPEG CANADA  
MARCH  
NINETEEN SIXTEEN

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Published Monthly by E. H. HEATH CO. LIMITED — Our Fourteenth Year

# Is Your Live-Stock Thriving?

For nearly thirty years International Stock Food Tonic has been used with immense success by farmers and stock raisers everywhere. It puts life and strength into horses, invigorating them and giving them a sleek, glossy coat. It helps to fatten cattle quickly and your cows to give more milk. Hogs thrive and fatten quicker than you ever saw them before. Colts grow strong and lusty. International Stock Food Tonic will save you money on your stock-feed bills. Here is the reason why—International Stock Food Tonic invigorates your live stock and enables your animals to assimilate more nourishment from the food they eat. International Stock Food Tonic supplies the medicinal value of roots, herbs and vegetables which the animals would get if they were running at large. Thus it invigorates the digestive system so that the animal gets greater value from its food. The food is digested more thoroughly and the animal is kept at all times in the very best of health. International Stock Food Tonic can be purchased from dealers everywhere in convenient sizes. Put up in packages 25c., 50c., \$1.00 and \$1.50 lithographed tins, also in 25-lb. pails at \$3.75. If you do not know the name of your nearest dealer, write us direct.

**For HORSES** Hundreds of horse owners swear by International Stock Food Tonic. For instance, S. Thane Belyea of Browns Flat, Kings Co., N.B., writes under date of January 8th, 1916.—"I have used INTERNATIONAL STOCK FOOD TONIC for the past eight years and I find it very profitable. I am never without it in my barn. It is the best life preserver I ever had for a horse."

Here is a testimonial which was received on November 30th, 1915, from P. F. Rundle, of Plenty, Sask.—"I have used International Stock Food Tonic when I was in charge of sixty working horses and found it was a great saver of feed and a GOOD REGULATORY."

International Stock Food Tonic tones up the system of horses, giving them new life and a glossy coat of hair. You could not give your horse anything better for Epizootic, Indigestion, Liver Trouble, Cough, Influenza, Hide Bound or Blood Trouble.

**FOR HOGS** International Stock Food Tonic is endorsed as the surest Hog Tonic in the world. It is not what the hog eats, but what is digested and he would naturally take to arrive at that weight, is apt to weaken the digestive system. It is just here that International Stock Food Tonic corrects the defective assimilation of the animal and so aids digestion that full value is obtained from all food eaten.

## INTERNATIONAL STOCK FOOD TONIC

### "3 Feeds For 1 Cent"

Convince yourself, buy the small package first. You will be so satisfied with the results that you will quickly see where you can save money by feeding it to all your stock. When an animal gets run down or the digestion becomes weak a large part of the grain eaten passes through the system of the animal unassimilated. International Stock Food Tonic corrects the defective assimilation of the animal and so aids digestion that full value is obtained from all food eaten.

**For CATTLE** The farmer who feeds cattle for the market increases his profits greatly if he uses International Stock Food Tonic. It promotes the weight, quality, and health of the stall fed cattle, and you get quick results. The coats get glossy—an indication of the improved health of the cattle and the growth in weight is remarkably rapid.

For Dairy Cows, International Stock Food Tonic gives splendid paying results. Some milch cows consume a large amount of food, but their digestive organs are not in a proper condition to assimilate it. A large proportion of the food passes through the cows without being converted into milk or flesh. International Stock Food Tonic corrects the defective assimilation; the flow of milk is increased and tests higher in butter fat.

## Read These Letters Everyone Recently Written

Waterford, Ont., January 5th, 1916.  
We have used a lot of your International Stock Food Tonic and have found it very satisfactory for horses, cows and pigs. It is the best thing for little calves we have ever found yet. I have been advertising your Tonic all I could by telling of the good results we get from it.

Herb J. C. Collier.

Orilla, Ont., December 6th, 1915.  
I have fed your International Stock Food Tonic to 14 pigs and they are in better health than I have ever seen them before. I am now using your International Poultry Food Tonic and will continue to do so as I find it makes hens lay when they would not otherwise do so.

Thos. E. Childerose.

2051 Smith St., Regina, Sask., December 29th, 1915.  
I thought it might interest you to know that I am using your INTERNATIONAL POULTRY FOOD TONIC again this year and having had such good results knew that you would like to hear of same. I hatched last year, twenty-two (22) Andalusian Pullets and they started laying January 20th, and by June 29th they laid 2150 eggs. I am using your INTERNATIONAL POULTRY FOOD TONIC now and my hens are laying well—which I think is a good record as new laid eggs in Regina 40-days are 60c per dozen. This letter is entirely unsolicited.

A. E. Baker.

Wienheim, Ont., November 17th, 1915.  
We have always used International Stock Food Tonic with good results. We have always had a good batch of pigs and have mostly always raised every one of them while the neighbors around us would only have from three to six and their sows would be a lot larger than ours.

For instance our sow recently came in and had fifteen nice pigs. Its international Stock Food Tonic that does the trick.

Some of the ones around here that we know have been feeding International Stock Food Tonic find that their hogs are doing a lot better in less time than usual.

Dewayne Johnston.

Boissevain, Man., December 31st, 1915  
I am always a large user of your International Stock Food Tonic. I find I cannot keep my young horses and calves in as good shape without it as I can do when I use it. It is certainly great stuff.

Wm. Moncur.

Thomas H. White, in charge of the Live stock of F. J. Henry, Ridgetown, Ont., owner of nearly 1000 head of live stock, writes on Dec. 13th, 1915

I have used your INTERNATIONAL STOCK FOOD TONIC on our horses particularly on "Frankie Simon" colt foaled May 10th, 1915, with splendid results. I was successful this year in winning all prizes for 1915 roadsters and foals and special prizes in the county of Kent with this colt. I have used considerable of your INTERNATIONAL STOCK FOOD TONIC and always found it satisfactory. I am sure that anybody who will give your INTERNATIONAL STOCK FOOD TONIC a fair chance will be well satisfied with the results. I enclose you herewith a picture of the colt in question. I might as well say that I have also used your INTERNATIONAL STOCK FOOD TONIC on our cattle with splendid results.

Calumet, Que., December 26th, 1915.

I have been using INTERNATIONAL GROFAST CALF MEAL this year and never used the like of it. My calves are as fine a bunch as I ever raised on milk and an enclosing herewith an order for 500 pounds.

John Tennett.

Entwhistle, Alta., December 7th, 1915.

I have used International Stock Food Tonic and found it not only good but THE BEST I ever used; and I have been using all kinds for the last 27 years.

Dennis S. Harrington.

### INTERNATIONAL POULTRY FOOD TONIC

International Poultry Food Tonic is a preparation which will greatly increase the egg production of any flock by invigorating the egg producing organs. We positively guarantee a great increase in the number of eggs received when International Poultry Food Tonic is fed during Winter or Summer season. It cures and prevents disease and sickness, promotes food health in your poultry, and invigorates the digestive organs. It costs only 2c per month for 12 birds. 25c, 50c and \$1.00 packages or in 25 lb. pails for \$3.75.



### INTERNATIONAL GROFAST CALF MEAL

International Grofast Calfmeal is a scientific, high-grade substitute for milk in the quick growing of calves. It is easily mixed and calves like it and they grow and develop as rapidly as they would on milk. Sell your milk, and raise your calves at a very low feeding cost, which would net you much more money. Grofast Calfmeal will raise three or four calves at the cost of raising one on new milk. We have a little book, entitled "HOW YOU CAN RAISE AND GROW CALVES AT A LOW COST WITHOUT MILK", which we will gladly mail to anyone interested. Grofast Calfmeal is put up in 25, 50 and 100 lb. bags. If your dealer cannot supply you write us direct. Try it and prove to your satisfaction the possibility of successfully raising the sleek, lusty, thrifty calf in every way an equal of the "new milk" calf, and at a much larger profit.



### INTERNATIONAL LOUSE KILLER.

International Louse Killer will destroy fleas, etc., on poultry and on horses, cattle, sheep, hogs, dogs, pigeons, etc. Contagious disease germs are quickly killed. It is a reliable, safe and sure disinfectant. It will not discolor feathers or plumage of the whitest bird. Your dealer sells it for 25c for the large round box with the tin sparkling top.



## International Stock Food Company, Limited

### TORONTO CANADA

Silver Pine Healing Oil  
International Worm Powder

ALSO MANUFACTURERS AND

SOLE PROPRIETORS OF

International Heave Remedy

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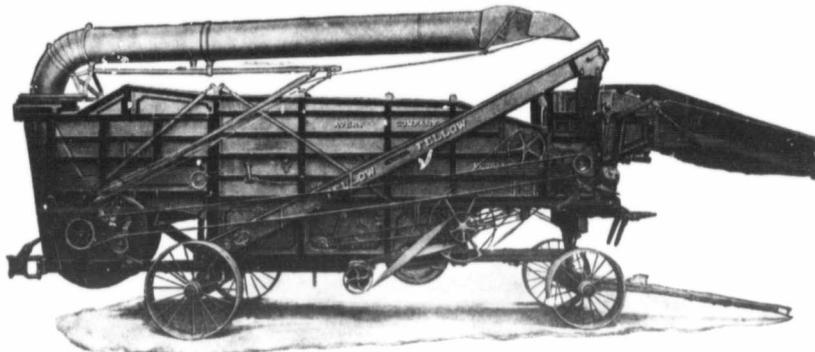
International Gall Cure

Dan Patch White Liniment

Dan Patch Hoof Ointment

International Foot Remedy

With your purchase of any or all of the above preparations, we give you the spot cash guarantee that absolutely protects you in trying them. Your money will be refunded if you are not satisfied—if International Stock Food Tonic fails to keep your stock in better health and make you a big extra profit for its low-usage cost. SO DON'T ACCEPT COUNTERFEIT PREPARATIONS.

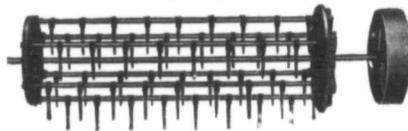


### More Improved Features than in Any Other Separator

We don't just make this claim about the Avery "Yellow-Fellows"—we are ready to prove it to any man who really wants all the facts about the construction of different makes of separators before he buys and is willing to spend the time to get them. You won't find in our catalog a lot of general claims about what Avery Threshers will do—but you'll find a lot of illustrations of every part of an Avery Thresher and reasons based on facts about the design and materials used and the tests which have been made to prove that an Avery deserves its name of the Thresherman's Job Taker and Money Maker and the Farmers' Grain Saver and Grain Cleaner.

You will find below illustrations from our Catalog of three of the improved features in an Avery Separator. These are as many as we have space to show here. These three features alone, however, we believe will make you want to know about the others.

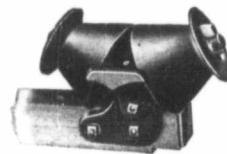
#### The Wonderful I X L Grain Saving Separating Device



This is the separating device that does such wonderful work in tearing up the bunches and spreading out the straw that it enabled Avery Separators to make a record of 99.9-10 per cent of the grain saved in 27 canvas field tests—the best proven grain saving record ever made.

No other company has ever made such an extensive number of grain saving tests in all parts of the country and then published the facts about the results. No other thresher is regularly equipped with the I X L Grain Saving Separating Device. Don't you think it is possible that these facts explain one another? But whatever they may indicate about other machines, they at least are conclusive proof that Avery Threshers with I X L Separating Devices are Wonderful Grain Savers.

#### The Avery Cone Pulley Belt Guide



This is another of the improved features you get as a part of the regular equipment of an Avery "Yellow-Fellow." We don't need to say any more for them than that every year we get orders for hundreds of them for use on other makes of threshers.



#### The Famous Avery Jumbo Tool Steel Tooth

A while ago we had a letter from a dealer who has handled a lot of threshing machinery in which he said something like this: "I don't see why other companies can't make as good a tooth as the Avery, but they don't."

Well, experience may be partially the reason—the quality of steel the Avery Company puts in may be another—but whatever all the reasons may be, the fact is that Jumbo Tool Steel Teeth have stood out from all the rest for years as the longest lived and hardest-to-break of any tooth made.

In our catalog you will find the Avery "Life Guarantee" against breakage; you will find a picture and a letter from a man who made a razor out of an Avery Tooth and shaved himself before the crowd at the North Dakota Fair last year, and you will find some of the reasons why Avery Jumbo Tool Steel Teeth save so much money and trouble for owners of Avery Threshers.

#### Get All the Facts about the Avery

You want the machine that will make you the most money and do the best work for your customers. In justice to yourself, we urge you to take this opportunity now of getting the facts behind the claim we make that Avery Separators have More Improved Features than Any Other. Our catalog will tell you the facts about the Avery. Write a letter or a postcard for one to-day.

— AVERY COMPANY Canadian Avery Co. Ltd.  
675 IOWA ST., PEORIA, ILL. WESTERN CANADIAN DISTRIBUTORS WINNIPEG REGINA CALGARY

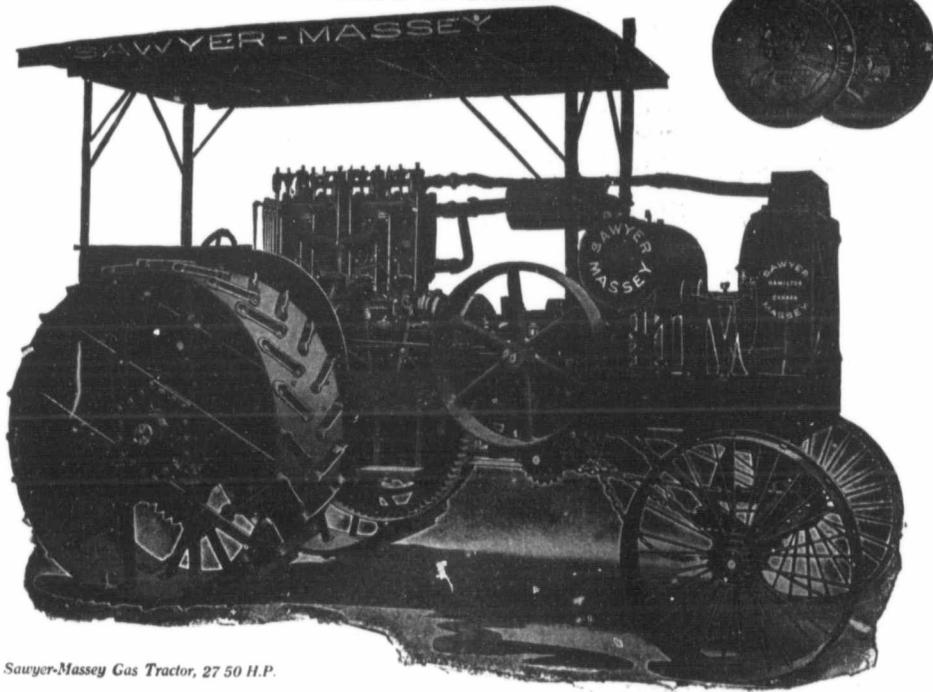
# EVERY



THE PREMIER COMPANY  
THE PREMIER GOODS

WINNER OF GOLD MEDAL  
AT WINNIPEG

MADE IN CANADA



Sawyer-Massey Gas Tractor, 27 50 H.P.

## WHO MAKES THE MOST MONEY?

Who makes the most money, the man who does all his work by hand or the man who runs a machine and lets it do his work for him?

Labor saving machinery has made big production possible. It has made agriculture in the Canadian West what it is to-day. In the years to come our farms will be much more productive than they are now, through new labor-saving machinery.

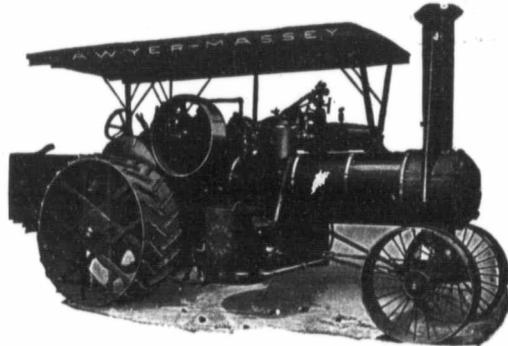
And now and in the future as well as in the past, it is the man who has the best machinery and gets the most work done for his own personal efforts who will make the biggest profits.

SAWYER-MASSEY owners get the biggest profits of all, for their machines are the best. Eighty years ago the SAWYER-MASSEY COMPANY built the first thrasher in Canada, and has held the lead in farm power machinery from that day to this. It has kept pace with every development of Canadian agriculture. Its success is due to the success its machines have achieved, and its reputation everywhere is the result of the efficient design and careful workmanship which goes into every machine.

The SAWYER-MASSEY Gas Tractor has been proven the best in Canada.

SAWYER-MASSEY Steam Tractors are built in many styles and sizes to meet the requirements of every farmer and thrasher. Each is the most efficient for its size that can be built. One of these tractors will make money for you.

Our new Illustrated Gas and Steam Tractor Catalogues explain in detail the full line of SAWYER-MASSEY Machinery. Write for your copy to-day.



## SAWYER-MASSEY COMPANY, Limited

Builders of Steam and Gas Tractors, Threshers and Road-making Machinery

Head Office and Factory

HAMILTON, CANADA

Branch Offices and Warehouses: WINNIPEG, Manitoba; REGINA, Saskatchewan; CALGARY, Alberta; Agency, BUENOS AIRES, Argentina

# SAWYER-MASSEY

You saw this advertisement in this magazine. Don't forget to say so when writing.

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Vol. XXI.

WINNIPEG, CANADA, MARCH, 1916.

No. 3.

THERE was exhibited at Manitoba Agricultural College, during the week commencing 14th February, specimens of the Province's 1915 grain crop which have never been surpassed if equalled in any grain contest. If better samples have been grown in Manitoba or anywhere else the judges who are living to-day have never seen them.

One of the judges affirmed that the top-score wheat was the best sample he had ever seen. Having taken part in adjudicating at the Dry Farming Congress, held in Denver (Col.), last year, he could say that this particular sample was superior to anything that had been entered in that world contest.

This sample was given 99 points out of a possible hundred. Probably the winner (Mr. Larcombe, of Birtle), will take greater pains to preserve that score card than he will to safeguard the embarrassing wealth of sterling silver and other trophies it brought him. He is a man of that kind.

To say less of the grand champion oat sample would be manifestly unfair to the grower (W. T. Grogan of Treherne). If Professor Bracken did not speak for the "Abundance" as he spoke for the "Marquis," he no doubt felt as much—as did a large number of other cereal experts who saw them.

There were other great things at this unexampled Western show, but this grain exhibit stands out from all else. The full weight of it has not yet been felt—but it will be. Manitoba never so conclusively demonstrated her power to beget character as she did in this one exhibit. (See page 39).

There was a great deal of expert advice given, and not a little wholesome criticism offered, but towering high over all that wealth of human utterance, there was the address of the Hon. Duncan Marshall, and notably that part of it which dealt with the problem



of keeping the young folks on the farm.

Sometimes speeches "sound" better on the printed page than they did while being unloaded from the rostrum. In this case, however, no reportorial effort could reproduce the irresistible force of the spoken words as they flowed in impetuous torrent from the speaker's lips and clothe them in the atmosphere of the man.

An old subscriber, calling at this office to renew his subscription, declared that he had received greater inspiration from that one address than from any "farming talk" he had ever listened to. And this man had been habitually practising the very advice Alberta's Minister of Agriculture had been so earnestly driving home. What was it?

That the farm youths should be held by the all-compelling charm of intensified interest. Give them something to care for that was worth their while—that compelled their enthusiastic admiration. The very best blood stock a father could buy was the very best investment he could make for his lads. He owed them nothing less.

The Manitoba Legislature has decided that the teaching of the English language shall take precedence of all else in the Provincial public schools. This will give more than a fighting chance to thousands of bright, healthy children who had been saddled with a shameful handicap. It may be called the emancipation of the children.

Big-hearted citizens of all parties have demanded this reform. Kindly feeling towards the non-English speaking people is

very strong in Manitoba, and it will never grow lukewarm. Nor is this a "patronizing" feeling. Its desire is to bring the young race up to at least the common level of life's opportunity.

In seeking to make good this country's promise of "the last man and the last dollar," if need be, in the great war of liberation, the Canadian military authorities have recently inaugurated strong measures of recruiting. To these, in certain respects, the "United Farmers of Ontario" have taken exception, and they are probably justified.

Already the farms had given up a big share of their manhood, but now the country is faced with a labor shortage of a kind that can hardly be replaced by any imported supply. A man's duty in these times may more urgently hold him to the farm than lead him to the firing line.

There are now very few farms indeed from which men can be spared, and before another man is released from agriculture, every city warehouse, office and dry-goods store should be carefully combed for the thousands of slackers and "mother's boys" whose places can be effectively taken by women, returned soldiers or older men.

If sufficient pressure is applied to the right spot the military authorities will assuredly get all they need. For any slowness in the past, the authorities themselves are largely, if not wholly, to blame. Indiscriminate buttonholing and platform appeals are unavailing, and men will no longer enlist to spend months in marking time.

That, in effect, is what more than one battalion of Canada's most splendid men have been doing since they were urged to enlist more than a year ago. Still worse is the encouragement given to the very large number of adolescents who are parading the city streets in the uniform of commissioned officers.

Many of these we know to be very nice boys indeed, the sons of worthy parents, but if the German Headquarters Staff could only see these callow youths, so notoriously lacking in personality and experience, it would put more ginger into it than any encouragement it has received since the war started.

And after all our newspaper press has made of the fact that so many "mere boys" have been listed among the prisoners taken from the German trenches! The "boy," in spite of his adolescence is often an unquenchable spark of real manhood, and he, too, has his place in this big fight for human liberty.

That place, however, is not yet the responsible one of commanding a body of men. Any one of these men may be a king to him in everything that constitutes a leader. He is there solely because he is his father's boy—never in one case because he has won his spurs.

These facts are doing far more to stop the tide of recruiting than any indifference on the part of the nation's manhood. I cannot believe that there are ten fit men in Canada who have an intelligent grasp of what we are fighting for and who at heart are unwilling to fight for it. But I do appreciate the feelings of any man who says he will not be humbugged by incompetence and snobbery.

Yours truly,





**The Tractor and the Horse**

Substance of an Address Delivered by Professor Jacobs (Manitoba Agricultural College) to the Stock Breeders' Convention Brandon, 4th January, 1915.

**What Occasioned the Tractor**

SINCE the farm tractor has actually invaded a field of operations at one time held almost exclusively by horses, it might be well to inquire wherein horse power was deficient that other power found an opportunity to establish itself. An examination of the development of the use of tractors in farming operations reveals this very gratifying and significant fact, that the tractor found a place because of the scarcity of horses, the lack of volume of horse power, not the lack of its quality.

So much new land was suddenly brought within the scope of farming operations about the end of last century and the first ten years of this one that a great shortage of tractive power to do certain well defined work confronted those who were anxious to get land into crop in the shortest possible time. To wait for the horse supply to increase seemed to impose too much delay so the then available mechanical tractors such as the large steam engines were pressed into operation, also an unprecedented number of oxen were employed.

In this state of affairs it became inevitable that the merits of horse traction, although established by hundreds of years of farming experience, should be challenged. The big tractors were doing a very extensive and very hard job even with their admitted unsuitableness for their work; hence, the birth and growth of the idea that there was, or is, a place for mechanical traction on the farm. There was no doubt as to the demand for such power, but there appears now in the light of later events that the nature of that demand was not fully understood, that it was not as permanent as at first appeared. However, there was a demand and manufacturers set about not

only supplying it but of increasing it, a thing which horse breeders have not done to a very great extent.

The methods of farming which gave rise to the demand for big tractors, however, were not a permanent feature of our agricultural endeavor. Breaking large areas is not an endless job. About the time tractors had received a thorough trial the nature of the work had changed. Practises became less extensive, and more intensive which afforded less opportunity to the tractor to be of outstanding service; hence, we now have tractors of a very different type to those generally recommended ten years ago.

**Where the Big Tractor May and May Not be Successfully Employed**

The big tractor has been found unsuitable for the general farm but has found a place on the extensive grain growing ranch. I have in mind a farm near Gleichen—some 2½ sections—where two tractors are kept and do practically all the work, there being only four horses on the place. On such farms by reason of the nature of the work and extent of land to be covered, also the mechanical knack of the man in charge, tractors—big tractors—are the most satisfactory power. In other places small tractors are at least doing the work ordinarily done by horses and claims are made for them for most farming operations.

The use of tractors, while not exactly making headway, finds many advocates, so it might be well to examine the defects in horse power as farm traction.

The big tractor had its vogue on the wide prairie and recommended itself chiefly for breaking, but the small tractor is being used in well settled farming districts actually displacing horses.

The increases in the use of the small tractor may or may not be due to definite information upon its efficiency. Very probably it is due to its theoretical advantages. Horse breeders and users of horses may not be aware of the terrible indictment that can be and is being made against horses as motive power. Very few

people realize just what the keeping of a horse involves in the way of expense. Paying horse board in town helps to bring home the cost of horse power.

In 1914 Manitoba had 316,707 horses with an average value of \$151, or a total of \$41,634,000. Saskatchewan had about twice the number and value, and Alberta about one-quarter more. It costs a lot of money to keep this motive power, and the cost has been going up. The U.S. Government has tabulated from thousands of reports the average cost of keeping a horse a year. It runs as follows for 1914:

Interest on investment value of \$150 .....	6.72
Depreciation at 8% .....	10.00
Harness depreciation .....	2.30
Shoeing .....	.80
Feed—	
3 tons of hay at \$11.12 .....	33.36
Grain 106 bus. at 53c. per bus. ....	56.18
Labor and care .....	10.53
Miss. ....	.54
	<hr/>
	\$129.43

In Manitoba the actual cost would be a little under this amount for various reasons, but not a very great deal. For the years 1908 to 1912 the average cost in Minnesota was \$96.21, and from 1904 to 1907, \$79.80. On the basis of 1914 costs our expenses for horse keep allowing 1 in 7 for colts would be over 30 million dollars, or nearly the total value of our wheat crop, or a cost almost equal to their total value, and it is in this steady rise in the cost of keeping horses that one finds much of the argument for the use of the small handy tractor.

**Relative Expense of Horse Power**

Horse power is expensive relatively for certain definite reasons:

- a. He is a small motive power unit.
- b. The unit of power in which he can be worked requires a man to operate.
- c. The horse is a low efficiency motor.
- d. The horse's work is seasonal.

I think that you will see that horse power units requires more man labor to operate than the same units of mechanical power; from two to six horses make a team for one driver, whereas most motors will deliver as much and

more power at the draw bar as two or more outfits of horses.

Generally we consider the horse is a highly efficient tractive power. He moves easily over the land, he does not show much loss of power in changing from a solid footing to a soft footing. He can get himself out of almost any place he gets into; he is handy but not efficient in the sense of developing a large proportion of power to the energy producing capacity of food consumed.

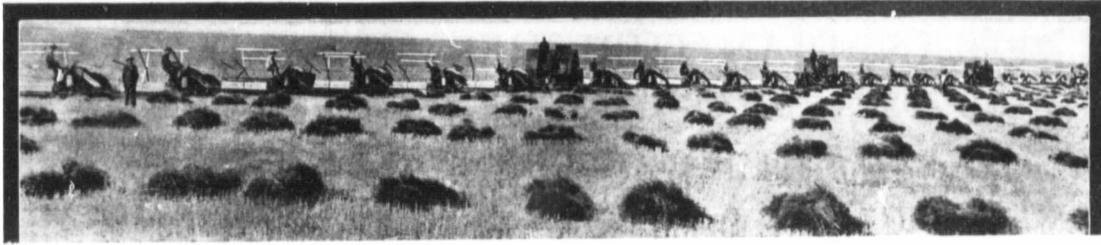
Actually about 70 per cent of the energy from a horse's feed is required to maintain him before he can spare any for muscular power and of his muscular force 23 per cent is required to carry and propel his body, leaving only 7 per cent of the original available energy delivered at the traces. **Mr. Edison declares a horse's energy is only 2 per cent of the energy in his feed.** The triple expansion steam engine is given an efficiency of 8 to 10 per cent and a kerosene engine from 15 to 18 per cent. But, of course, these are arbitrary ratings; they do not and cannot take into consideration the ability of the horse to deliver reserve and of the inability of the engine to even move itself in certain conditions—the roads at present for instance, or upon soft plowing. It doesn't matter how much power an engine may deliver at the draw bar, when she gets on soft footing she not only has nothing to deliver she commits tractive suicide but where the footing is firm the relative efficiency is about as I have stated.

As a matter of fact, experience, which is the real criterion of tractive values, is not wholly conclusive as to whether the tractor will supplant the horse, or the horse the tractor. This, however, is plain, namely, that conditions have become so exacting that every consideration must be given to the problem of reducing cost of production and making the spread between such cost and the selling price of farm products as wide as possible.

In this connection I have pointed out some of the defects in efficiency of horse power. I could have gone further and have

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THE TRACTOR

shown that horse power requires expensive buildings, that on the average it works only three hours a day, that the feed used to maintain horses could be used to much better advantage with cattle or sheep, but I have criticized horse power enough to impress this points that we should study how to reduce its cost. If we realize that it actually costs about \$200 worth of marketable material to keep a team and that material could be converted into meat or milk and sold for more money then we may expect to make a more economical use of our horses.

**The Case Against the Tractor**

Now for the indictment of the tractor. Every horse breeder, no doubt, can make that. From what has been said about horses, one may gather that certain objections cannot be offered against tractors; namely, that the units are small; that they waste so much energy; that they have to be fed when idle etc., but the size of the unit means that there must be a big first investment, one cannot buy the horse power of an engine in instalments; there must be a big cash payment before a fraction of horse power may be obtained and by the same token the slightest impairment of the unit means that the whole force must be idle. The tractor requires a man with special skill to operate it, it is not readily handled by the average farm hand or even farmer; it is made to run on firm ground under ideal conditions; it is easily put out of commission by vibration or concussion, and although rated to deliver a certain horse power at the draw bar, does not do so unless it is on firm ground.

When a horse gets on soft ground we excuse him from delivering power at the traces and let him get himself out; when the tractor gets into a similar position it digs itself in deeper and uses all its power to sink itself further into the ground. The tractor fails in handiness; it rapidly depreciates, it does not reproduce itself; its use upon the land tends to impair the mechanical condition of the soil and is very hurtful to roads; the necessary fuel supply has to be bought for cash and is very uncertain in price.

After examining the demerits of both animal and mechanical tractive power, it is plain that there is plenty of room for improvement. The fact should be borne in mind that tractive power is a big expense in farm operation; some authorities, notably the Minnesota Station, have figured it at 40 per cent. of the total cost of operating a farm. On small farms where a proportionately large number of horses are kept or a big tractor, it is higher; on farms where the acreage is large the proportion of horse power to work to be done or returns it is usually smaller.

As horse breeders, we should recognize this, that much of the argument for tractors lies in the fact of extravagant use of, or misuse of horses, in the fact that horse power expense is so often out of proportion to the work accomplished. This is due to a failure to appreciate the cost of keeping idle horse power, to a disinclination to put horses on an absolute business basis, to a general low average of efficiency in doing farm work with horses due to the horses lacking in ability to

do the work with 100 per cent efficiency, and to the driver being willing to do less than a full day's work after a full day's expense had been expended upon the horse power. When comparisons are made they are generally as between a thoroughly efficient tractor and horse power of average efficiency.

**Local Conditions Must Determine**

In our present state of indifferent use of horse power and disregard for the cost of it on the one hand and on the other the obvious deficiencies of mechanical traction, the choice of the power used must be determined by individual conditions rather than by the unquestioned advantages of one power or the other for all kinds of work. Very apparently there is a place for mechanical traction on many farms, but it is just as apparent that tractors cannot supercede horses as the universal farm motive force.

Perhaps the place the tractor should take is already conceded to it and possibly we expect more than it will be able to give. In one branch of farming operations mechanical traction easily has a superiority over animal, and that is for light road work. We have seen automobiles by sheer efficiency take the place of horses for pleasure driving and for passenger conveyance, and we have been ready to concede to mechanical traction the probability that it could as readily take the place of horse power at farm work. Perhaps it may. In some aspects of farm work it may be able to demonstrate its superiority as it has in speed upon the road and if that time ever comes we shall see a remarkable falling off in sentiment favorable to horses.

For the immediate future, however, horse breeders may keep their advantage by methods of farm management that will tend to keep down the cost of horse power and keep up its efficiency. Some of these methods are:

- a. A close relationship between the number of horses and the work to be done.
- b. An increase in horse efficiency by raising the standard of work horses and adapting machinery and work to the horse power available.
- c. A careful distribution of work throughout the year.
- d. The practise of economy in feeding and care.
- e. The keeping for farm work of the dual purpose animal, the brood mare.

When we practise these methods and so reduce horse power costs we shall have removed much of the weight of objection against animal traction, and it is to the advantage of every man who pretends to operate a farm to keep down power expenses. It may be good for horse breeders to see horse raising on the increase, but in the final analysis the only thing that helps horse breeding is the economical use of horse power, horse power efficiency. We owe much to the horse and we must not think we can discharge our obligations or render even justice by indulging in sentimental considerations. The horse, like most other things in this practical world, is best treated when he is given the opportunity to stand upon his merits.

**Hopeless**

"You say you have no references as a cook. How is that?"  
 "Well, you see, mum, I've always stayed in wan place until the people died."



AND THE HORSE

# THE CANADIAN THRESHERMAN AND FARMER

CANADA'S LEADING AGRICULTURAL MAGAZINE

E. H. HEATH,  
PRESIDENT

E. W. HAMILTON,  
MANAGING DIRECTOR

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March

1916

## FARM OR TRENCH?

### OUR GUARANTEE

No advertisement is allowed in our Columns until we are satisfied that the advertiser is absolutely reliable and that any subscriber can safely do business with him. If any subscriber is defrauded E. H. Heath Co., Ltd. will make good the loss resulting therefrom. If the event takes place within 30 days of date advertisement appeared, and complaint be made to us in writing with proofs, not later than ten days after its occurring, and provided, also, the subscriber in writing to the advertiser, stated that his advertisement was seen in "The Canadian Thresherman and Farmer." Be careful when writing an advertiser to say that you saw the advertisement in "The Canadian Thresherman and Farmer."

**W**HO MAY GO AND WHO SHALL STAY must very soon be decided on every farm in Canada. The United Farmers of Ontario have made a strong and not unreasonable protest against unnecessary enlistment of men from the farms for overseas service. "Agriculture is already sadly undermanned" they say, "and any further decrease in the number of those engaged in it cannot but reduce farm production very materially. As an increase of farm production is most necessary, not only for the assistance of the Empire, but for the maintenance of our own national credit, the imperative need for a large enlistment from rural sections should be demonstrated beyond any question before such enlistment is encouraged. The campaign is resulting in either taking men from the farms who are more needed there than in the trenches, or as branding as disloyal or cowardly many young men who are neither, but are kept on the farms through a sense of duty more urgent than enlisting."

after a very comprehensive study of the psychology of the man on the street, the man on the farm and the man in the city office or store. We have "gone after them" in large numbers and at many points, between Winnipeg and Edmonton, and the experience has been uniform and not unsatisfactory. At the outstart we felt that the Canadian boys, if not actual slackers, were very slow to rise to a sense of the magnitude of the issue and its nearness to their most vital interests. That was our first impression, but we found we were wrong; that it was not our men folks but the Military Authorities who were (no doubt unwittingly) "holding up the traffic." And this is how the man-in-the-street sees it.

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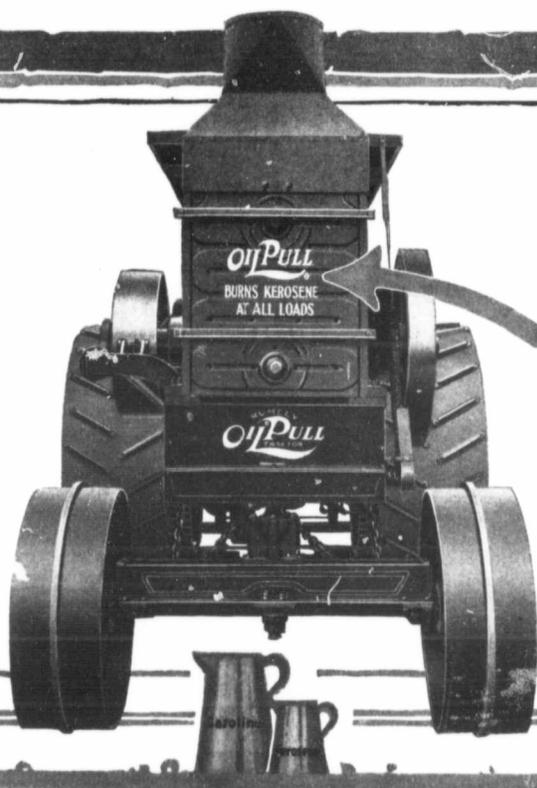
Advertising rates furnished on application.

Since the outbreak of hostilities we have continued to do our bit in recruiting men for the "grand army of liberation," and will yield to no enthusiast in our zeal for the fighting force. We have sent all that the military authorities will accept of our own flesh and blood, and but for certain disqualification in point of years and eye-sight we ourselves would at this moment be handling a trench tool or a rifle instead of a very indifferent pen. We have spoken in season and out of season sometimes and done all that patriotic fervor can accomplish in spreading its infection. We will donate all the free publicity this magazine can give to any or every recruiting scheme or plea that can be urged upon reluctant men who are fit for service but who have not yet taken the step that definitely assures the country of their help. Having said this we will not be misunderstood in also saying that we have a keen appreciation of the argument set forth by the Ontario farmers which will no doubt be taken up still more appropriately by the farmers of our Western Plains. It is positively of the first importance to our men in the front-line trenches that the grain-crop of Canada should be safeguarded for 1916.

The Manitoba Department of Agriculture is anticipating the labor difficulty at seeding time as well as at harvest and is sending broadcast a strong appeal for "hands," part of which will be found on another page. Reports reach us of men who are offering themselves but are holding up the farmers at a prohibitive price for their services. We have no place in our sympathy for the farmer who seeks to beat down efficient help, but we have less for the scab who not only refuses to fight but will aggravate his position by a species of blackmail that has no equal for meanness. All things considered we affirm that \$35 per month is a fairly substantial price for a good hired man whose board and lodging is such as we know it to be on the poorest Manitoba farm we have yet visited. We have a small "patriotic scheme" of our own to help the farmer at harvest time if we are spared to see the ingathering of 1916 crop.

Our plan is to hire ourselves. It is the writer's opinion that every able-bodied man of the city who cannot for some valid reason enlist with the overseas force should hold himself at the disposal of some farmer for at least a fortnight or a month during the harvest of 1916. We who hitherto spent our vacation at the "The Beach" or at some of the popular Lake resorts have no right to be skylarking or lounging on a single lawful day while our boys are fighting bravely and laying down their lives in thousands to preserve the world from slavery. The writer is willing to contract for at least two weeks' steady work either in stooking, pitching or driving a bundle team. He will do this on the current basis of board and wages and do it to the entire satisfaction of the farmer before he accepts a dollar of wages. He knows other city men who would be glad to fall in line at holiday time. It is our purpose to place the matter in all seriousness before the Minister of Agriculture so that there may be a centralized force at work if the scheme is practicable.

If common sense will but have its way, we will recruit our boasted half-million men and the labor shortage on the farm will not be found to bear down upon it more severely than it did in any year in which there was no war. It will be decided by the wisdom or folly of the Military Authorities at Ottawa and the employers of labor throughout the country. These observations are not loosely flung out but are made



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# PRACTICAL TALKS TO THRESHERMEN

## LESSON CX.

**W**HAT should be the weight of a light tractor? Should it be as light as it is possible to make it or is there a certain minimum under which it is not safe to go? What are the deciding factors in regard to weight? These are questions the designer must answer when he takes up the problem of designing a tractor.

The fashion this year calls for tractors weighing not more than five thousand pounds and as much less as possible and still make the machine sturdy enough for the work it has to do. The reason for this demand for a light weight machine is easy to understand when one reviews the history of the tractor development.

The first tractors were designed for breaking new land primarily and were necessarily made very strong and heavy. The manufacturer was not strictly limited as to cost of production because there was an active demand for such machines and the purchaser was willing to pay a good price. When the slump came in the heavy tractor trade, manufacturers turned their attention to developing the old land market and for this a lighter and cheaper machine was needed if it was to displace horses.

The first problem in order to develop a market was and still is low price. This requires light weight. Another thing the farmer wants is a nimble machine, one that he can handle easily and without much effort. Then there is to be considered the matter of weight as related to packing the soil. Most farmers object to running a heavy machine over soft cultivated ground, claiming that it will pack the ground so solidly that it will not grow a crop. All of these reasons seem to require a light weight machine.

The problem involved in designing a tractor to meet all the conditions enumerated are engineering problems. First, the designer is limited as regards cost. If a tractor must sell for six hundred or eight hundred dollars there is not a very large margin for him to work on considering that out of this price he must pay for raw material, labor, all overhead charges, pay dividends and pay the cost of marketing.

After doing all this, he is required to construct a machine that

possesses all the necessary qualities of strength, durability, reliability, power, light weight and low cost of manufacture. The first four of these items call for good materials, fine workmanship, and considerable weight. The last two call for the minimum of materials and the cheapest possible construction consistent with the requirements. These conflicting requirements make the problem exceedingly difficult. They are the reason for the curious features of design that have appeared during the past couple of years and represent the various designer's idea of solving a difficult problem.

The value of the deciding factors of tractor design are as yet not very well understood even by those who have had the most experience and are not appreciated at all by many of the newer designers who have had their engineering experience in other lines. Take for example the matters of strength and durability; how many men know how to design a tractor that has just the right strength in all its various members? Very few. This is very apparent when reports of users show such serious breakages as gears, connecting rods, frames and other major parts. Then there is the problem of vibration. Many tractors shake themselves to pieces in a short time. Tractor requirements are very severe. The amplitude of vibration is short, and the entire machine is subjected to a constant shiver unlike the long undulatory vibration in an automobile. Frames with even riveted joints have been known to shake to pieces in a comparatively short time. These vibrations are caused by having a rigid machine with rigid wheels, provided with rigid lugs, traveling over hard and uneven ground. In an automobile or a truck, with which a tractor is often compared, there are soft tires on the wheels and springs underneath the frame. Conditions are very different. The truck or automobile can not be compared with the tractor because working conditions are so entirely different. In addition to this, the tractor drags a dead weight behind while the other vehicles carry the loads on their backs.

Strength and durability require

the best of materials and enough metal to withstand all the maximum stresses of vibration, torsion, bending tension, etc. None of these stresses can be figured by the usual engineering formulas and the result is that every tractor is the best guess of the designer who made it, considering the fact that he was held under the rigid restrictions of low cost and light weight. It is not at all remarkable that many of the light weight machines show structural weaknesses. Neither is it remarkable that the light weight machines of last year show great improvement over those of the year before. It merely shows that the designers are learning from experience.

One of the things that a farmer wants above almost anything else after strength, power and reliability are satisfied, is handiness or nimbleness. He wants a machine that will get around easily, that handles without much effort. It is very much of a question if the prejudice against the heavy machines was not due more to their awkwardness than to a fear that they would injure the soil through packing. When the soil contains a certain amount of moisture almost any tractor will pack the soil injuriously, but if it is in a condition to be worked even by horses even the heavy machines do not do much damage. It is still a question if after all nimbleness is not what is required even more than light weight. The light weight machines possess those qualities of nimbleness and that is one reason why they are in demand.

The question of power is another one about which there is still considerable difference of opinion. In plowing, the resistance of the soil varies through such wide values that it is difficult to make a universal tractor. It may easily haul four plows in some soils and only one in others. This difference in soil resistance leads to overloading, which is one of the most difficult things the tractor manufacturer has to contend with. If a machine is overloaded it soon wears out or breaks. The average farmer gets a tractor to crowd the work along and he wants to make it do all it can. If it will go at all with the load, he will not drop a plow or two to make the work easier for

the machine. He would do so if he were driving a team but he has not yet been educated to adapt the load to his tractor.

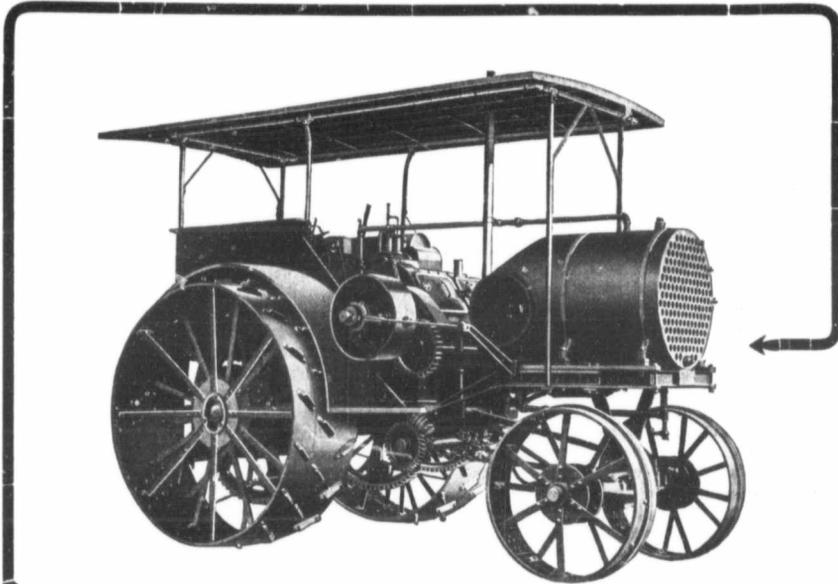
On this account fault is found with most tractors that they haven't enough power. If they are provided with stronger engines then there is danger of overloading the framework and other parts. A powerful engine requires a strong frame and that means a heavy machine. Obviously the only thing that can be done is to make the engine only powerful enough for the safety of the framework that supports it.

In order to meet the requirements of light weight and low cost of production mentioned in the beginning, designers and manufacturers have brought out many rather startling looking machines in the last two years. This endeavor has been the reason for all of the three wheeled designs. Take, for instance, those with the triangular frames; obviously such designs call for the minimum weight of material in the frames; when only one driver is employed there is no necessity for a differential gear and the transmission is simplified. All of these reduce cost and weight. They adapt themselves very well to satisfying the last two of the considerations named, but they lead to obvious defects. Under certain conditions they are not easy to steer. There is generally, though not always, considerable side draft while plowing.

The three wheel machines with a single driver in the rear also gets away from the differential gear and some troublesome transmission problems, but unless it is designed with the center of gravity low there is danger of upsetting. This difficulty may be overcome to a great extent, but in turning corners the tendency is always present. All of the three wheel machines lend themselves peculiarly well to chain drive, which is a most excellent method of transmitting power so long as the chain does not stretch, but if it gets too long, it is inefficient and there is more or less liability to breakage of the chain. Up to the present there has not been enough attention paid to tractor requirements by the chain manufacturers, but there is an indica-

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You want to know more about the best line of tractors on the market. There is just one way to get this information—send your name in for CATALOG—to-day.

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# Leaves from the Diary of a Gas Engine Expert

By C. V. HULL

As one travels here and there adjusting and repairing gas engines, he sees almost everywhere the lack of real engine knowledge on the part of owners. Many of them are not getting the best service out of their engines, because they do not know how to care for them. It goes, almost without saying, that there are certain rules which apply in the care of any internal-combustion engine.

In the first place, every stationary engine should be on a good foundation. Otherwise there will be continual jar and vibration which will make proper care impossible. In the case of portables and tractors, the manufacturer provides a satisfactory foundation or frame. If he does not mount his engine in a substantial manner, you do not want his rig for it will cause continual trouble.

After making sure that the engine is well set, the first great rule for the beginner is, "Keep the engine clean." Not that a clean engine runs any better. In fact, one of the best running tractors I ever saw was so dirty that it was almost impossible to distinguish the shape of some of the castings. But for the inexperienced man, or the one who is not mechanically inclined—the habit of thoroughly cleaning the engine after each day's run will help wonderfully. Many loose nuts and bolts will be found when wiping it off. Improper adjustments and loose parts will be noticed more quickly. Then, too, if any repair work is needed the parts are not coated with a mess of dirt and grease.

In the care of the various parts of the engine, none requires more regular attention than the oiling system. It is perhaps the most important part of the engine. Other parts may go wrong and but little, if any, damage will be done to the motor. But a good grade of oil must be used, and the oiling devices must be kept in A1 condition or new parts will soon be required. Not long since I saw an engine with oil caps

so dirty that no one could tell how much oil, if any, was being delivered. If your engine is equipped with drop oilers, keep them clean inside and out. Watch them closely in the winter time and make sure that oil is being delivered.

It is a good idea to examine pistons and rings occasionally to make sure that the lubricating oil is not carbonizing excessively. If the deposits are heavy or hard, it will pay to try another brand of oil or to make sure that you are feeding the right amount. Too much oil must not be fed to the cylinders, as this always causes carbon deposits on the cylinder walls and may help to pit the exhaust valves.

When the proper amount of oil is used, a thin film will cover the surface of the pistons. But there should be no accumulation of oil in the combustion chamber or around the piston. Neither should the oil supply be reduced enough to allow the film on the surface of the pistons to be broken. If it is, there will be unnecessary friction and wear. If there is any doubt as to the proper amount of oil required, use too much rather than too little.

If your engine is equipped with a force-feed oiler be sure to keep the sight glass clean. A very good plan is to fill the oiler before each run, unless the motor is started and stopped at very frequent intervals. If the engine is in regular service the oiler ought to be filled regularly. In addition, get the habit of looking at the oiler occasionally to make sure that it contains plenty of oil and is working properly.

Keep the grease cups well filled and screw them down as often as directed. Use a good grade of hard oil or cup-grease—one which does not melt too readily. It may be well to try several kinds and get one which fits the requirements.

It is of little use, however, to keep the engine well lubricated

unless the crank pin and main bearings are properly adjusted. There are, of course, other bearing adjustments, but in this discussion I refer particularly to the crank pin and main bearings. These must be kept in excellent order. A loose main or connecting rod bearing may cause a broken crankshaft, a cracked frame or ruined bushings.

One manufacturer of gas tractors says that more crankshafts and bearing bushings are broken because of poorly adjusted bearings than from any other cause. This is because loosened parts cause an unusual strain on the crank shaft, and the jar and vibration fatigue the metal so that it breaks more easily. Of course, I do not mean to imply that only main and crank pin bearings need adjustment. It is evident that every moving part requires occasional refitting and adjustment. But the greatest damage is done if the big bearings get out of tune.

The operator must also watch the cooling system. He must be certain that the cooling liquid—whether water or oil—is at the proper height or level. The manufacturer invariably gives instructions regarding this, and the operator should understand just what is required.

The cooling liquid must circulate or there will be trouble. If a pump is used be sure it is running properly. This caution applies especially to belt-driven pumps, though it is well to note that the chain is not broken in case the pump is chain-driven. If the thermo-siphon system is used there is the possibility that some foreign matter may interfere with the circulation. This is not apt to occur with a new engine but with an old one the hose connection some times gets in bad order and partially closes the normal opening.

As a general rule it may be stated that for some time after a new engine is put in service it should be gone over daily and

every loose nut tightened. Do not fail to do this work, for if it is not systematically done the engine may fall to pieces before it should be in bad order. Even after an engine has been in service for some time it is a good plan to look it over regularly.

This suggestion applies to the ignition system as well as any other part of the engine, for tight connections are absolutely necessary to get the best results from batteries or magnetos.

A great deal of caution must be used about moving parts. One should realize that a rapidly revolving pulley or crankshaft cannot be stopped instantly. I have a jammed knuckle and a bruised toe to remind me of carelessness along this line. Not long since I knew of an engine being badly wrecked by a piece of iron getting tangled up with the crankshaft. Be very careful to keep anything which might cause damage out of the way. Do not attempt to put any parts in place or to make any adjustments while the engine is running. The operator should also be careful about his personal safety when working near revolving pulleys and shafts.

When the cooler weather comes on, do not forget to drain off all the water when shutting down for the night. My opinion is that more engines of the water-cooled type are "frost bitten" in moderately cold weather than in real cold weather. Do not take any chances; drain off every bit of water if there is any possibility of low temperature.

In order to care for the engine properly there should be a regular schedule of things to be done each time before starting. This schedule should always be followed unless there is most urgent need for the engine. It should be plainly written or typed and shellaced to a board. The board can then be hung up in a suitable place in the engine room or in the tool box of the tractor.

Continued on page 14



Engineer Students attending Manitoba Government Short Course at Morden.

## WHEN IS A GOOD OIL NOT GOOD?

**W**HEN it's used in the wrong place. You cannot expect a heavy oil designed for use on a low-speed, high-power tractor to lubricate efficiently the finely adapted bearings of a high-speed, low-power tractor.

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### THRESHER HARD OIL

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

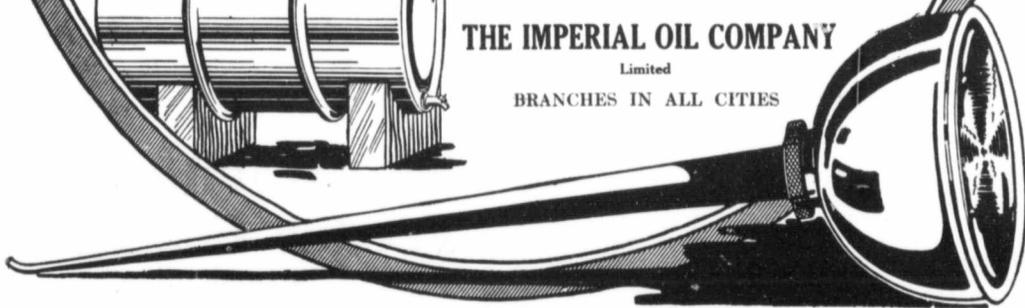
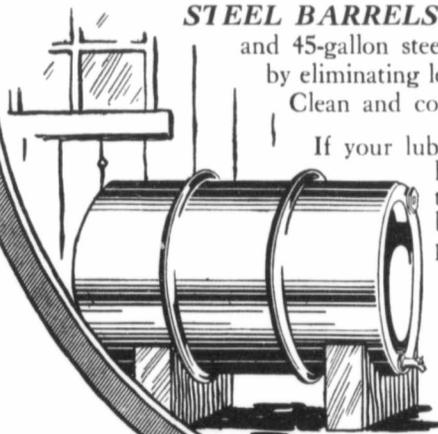
**STEEL BARRELS**—All our oils can be obtained in 28-gallon and 45-gallon steel barrels. These barrels save their cost by eliminating leakage. You use every drop you pay for. Clean and convenient.

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## THE IMPERIAL OIL COMPANY

Limited

BRANCHES IN ALL CITIES



Continued from page 12

The following are merely suggestions for a schedule. Each owner will find it necessary to make changes to use it with his particular type of engine.

1. Fill all oilers or lubricator.
2. Fill and screw down grease cups.
3. Examine connecting rods and bearings.
4. Tighten any loose nuts or parts.
5. See that clutches and pulleys are in proper condition to run.
6. If weather is cold, be sure that pumps and such parts are not frozen fast.
7. See that cooling fluid is at proper height, or that there is enough of it.
8. See that timing devices are set for late ignition.
9. Make any necessary carbureter adjustments.
10. If an engine is a kerosene burner, be sure that water is shut off from carbureter and that fuels are properly supplied.
11. Follow the manufacturer's starting directions.

When the engine is started be sure to observe the following:

1. Note that the engine is not overspeeded and that governor is working properly.
2. See that oiling devices are working.
3. See if the cooling liquid is circulating all right.
4. Listen for any unusual squeak or pound. Shut down if it seems best.
5. Follow the manufacturer's general directions for the regulation of fuel and for the use of water and kerosene, if the engine is a kerosene burner.

In making up this schedule, suggestions Nos. 7, 8, 9 and 10 should be taken from the manufacturer's instructions. Nos. 1 to 6 inclusive are the important ones and should always be followed no matter how great the hurry.

There should also be a schedule for stopping to be used at the end of the day's run. The following is a good outline:

1. Follow the manufacturer's regular instructions for stopping.
2. Fill oiler or lubricator and grease cups, if necessary.
3. Examine connecting rods and bearings.
4. Tighten any loose parts and make needed adjustments.
5. Fill up radiator, if necessary.
6. Follow any special instructions the manufacturer may give for the care of parts, using your best judgment in case of doubt.
7. Wipe off all grease and dirt.

Schedules similar to these were once used by myself for the direction of the men who handled the electrical apparatus in a gas tract or powerhouse. We had no trouble for the men understood the schedules and quickly became

accustomed to them. It soon became a habit with them to do the work as directed by the schedule.

In the same way the engine owner may form the habit and thus keep his engine in perfect order. By following a certain plan the work may be done in the least possible time with a minimum of labor. Further than that, there will be but little trouble with the engine and it will always be well cared for.

Three of the above suggestions are of vital importance in the care of the engine. It must be properly lubricated, satisfactorily cooled, and the principal bearings must be properly adjusted. If these three matters are given intelligent attention, there is little chance of injuring an engine. Even if the fuel is not properly regulated, there is only a loss of power, a possible waste of fuel or perhaps overheating of the cooling medium. If the ignition is improperly set there is usually a loss of power, with some heating and pounding if it is too early. But the chances are that the engine will not be damaged.

However, one need not be an expert to know that poor fuel regulation with improper cooling conditions or poor lubrication will cause excessive heating, which will surely result in burned piston rings and carbonization. Likewise a faulty setting of the ignition device with poor lubrication or bad cooling may make a lot of trouble.

Even if these three important matters are given careful attention, there may be times when the engine does not run well, and there may be an occasional time when it will not run at all. But if these three matters have been attended to, there is no danger that the engine will be wrecked though it may not run with the greatest efficiency. Minor parts may get out of order and adjustments may be necessary, but one can feel easy if the "gas engine rule of three" has been followed.

But this article has only touched the edges. The successful operator must study his instruction book with care. He must locate every part of his engine and know its purpose.

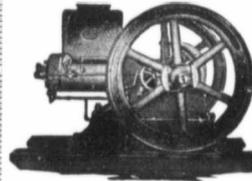
**Prosperity Permanent**  
By F. K. BULL of the J. I. Case Co.

I firmly believe that the period of prosperity in this country, into which we have been launched during the past several months, is permanent.

To be sure we have gained by the unfortunate conditions in Europe but the continuance of our prosperity is going to be due to a deeper cause.

During the past year there has developed in the agricultural communities a great interest in the use of power. Many people

## C. S. Judson Co. Ltd., Winnipeg



### JUDSON GASOLINE ENGINES

Built to operate on gasoline or kerosene, equipped with self-starting magnets.

All sizes from 1 H.P. to 30 H.P.

Tested and rated with a large surplus of power. Don't buy a gasoline engine until you have seen our special proposition.

### SPECIAL SALE Engines and Cream Separators

We are making special inducements to early buyers during February and March that will enable you to make a bigger saving on the purchase of a gasoline engine or cream separator than you can make at any other time of year.

#### DON'T BUY AN ENGINE OR CREAM SEPARATOR

Until you have seen this special proposition, as it means a big saving to you. The Judson Cream Separator, the separator that's built to do the work. Send for our special proposition to-day. We can save you money on farm supplies of all kinds with our new spring catalog C.T. Copy sent free on request.



## C. S. Judson Co. Ltd., Winnipeg

# Brains Win

Did the Pitchers around your threshing machine have any, or did they pile the grain in any old way, and plug the feeder and separator full, causing breakdowns and loss of time, wasted grain and failure to make anything with your rig? Why not overcome this trouble by securing a Garden City Feeder; something that HAS BRAINS and uses them to good effect by overcoming the evil results of BAD pitching. Now is the time to investigate and get ready for next season. Let us tell you all about the Feeder that HAS BRAINS. Fill out and mail Coupon, we will do the rest.

NAME .....

P.O. ....

Dept. "A."

## The Garden City Feeder Co., Limited Regina, Sask.

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seem to regard this development and the interest of the farmer in the tractor as something of recent happening. As a matter of fact the Case Company has been solving the farm power problem for a great many years. Of course, in the earlier times the tractors were used only on the larger acreages but with the splitting up of the large farms and the consequent tremendous increase of the small farms, the use of the larger machine has given way to the smaller. With the introduction of this method of plowing, the American farmer who has been accustomed in most cases to skim the top of his land, can now plow from six to ten inches more cheaply than he could previously plow with horses three to four inches. Applying as this not only does to the ranches but even to the smallest of farms, 80 acres for instance, the productivity of the American soil will be increased enormously and hence our prosperity is bound to be permanent because of the increased production of this wealth at a lower cost per unit of product.

This increased productivity finds a very ready market in the European situation and consequently there is a lot of money coming into this country, but, as a matter of fact, I believe that when history chronicles the events of this decade, the increased production of the American farm will be the important item and the wealth accruing thereto from the European wars will be an incident.

With this situation I look for an increase in the automobile business and a continuance of the present policies, which enable us constantly to reduce the price and maintain or increase the value, as shown by the reduction in our car just announced, \$1,090, from its price a couple of years ago, \$2,300.

With the output of Case cars contracted for before the public announcement was made, and with the consequent increase in production schedule, which is now practically allotted, I am basing my opinion on the present prosperous condition of the country on fact.

This I attribute largely to the advance of the American farmer in his method of doing business, which is a fundamental economic factor.

We, as a company, are fortunate in our closeness to the American farmer who has known the Case product and profited by their excellence since the first machine with the name of Case was sold in 1842.

Well Won

"I got this cup for running."  
"Whoja beat?"  
"The owner and six policemen."

Sawyer-Massey Instals New Man at Winnipeg

Information is at hand to the effect that Mr. Jno. Robertson is to be in charge of the Sawyer-Massey branch at Winnipeg.

The Sawyer-Massey management in the West state that plans are being laid for a bigger busi-



JOHN ROBERTSON, Manager Sawyer-Massey Co., Winnipeg, Branch

ness in Manitoba than ever before and that everything possible will be done in the way of taking care of the numerous Sawyer-Massey customers in this province. A full and complete stock of machinery and repairs will be kept at Winnipeg for the convenience of customers, as well as to provide speedy and efficient service.

Mr. Robertson has been with the Sawyer-Massey branch at Winnipeg for a number of years and is thoroughly acquainted with the Manitoba trade and its requirements.

Gather Ice for Summer

Ice is a commodity which almost every farmer can have during the summer months if a little attention is given to the proper methods of storage at this time. A common type of ice house and one that seems to give good satisfaction is a pit dug in the ground or on the side of a slope covered with a board roof to keep out the snow and rain and serve as a shade. Straw is used between the walls of the pit and the ice. One instance has been observed where baled straw was used with good results. In the construction of any ice house, whether pit or above the ground, the walls should be properly insulated so that they will not admit heat from the outside. Ventilation should be provided for the space above the ice by an opening at each end near the peak of the roof.

Makes It Pay



ENGINE

Do you remember how our fathers used to toil 20 hours a day, for weeks, to get the harvesting done? That was when the harvest was cradled and bound by hand. You no longer hear of gleaming all night by the light of the harvest moon. The reaper and binder have changed all that. The ordinary chores in farm life have lost their drudgery, too. Pumping water for house and barn, grinding feed, pulping roots, churning, washing, and cream separating, are not done by hand any more. Gasoline engines or windmills furnish power to turn machinery and pump water. We manufacture and supply nearly all the helps needed to Silos, Silo Blowers, Well Drills, Pumps, Water Systems, Litter Carriers, Windmills, Engines, etc.



Ontario Wind Engine & Pump Co., Ltd. 73 Atlantic Ave., TORONTO

Branches: Montreal, Winnipeg, Regina, Calgary

Farming pays. It pays better than any other investment. The way to make it pay easier and bigger than ever is to get our mechanical farm helps to do more of your work at reduced cost. This requires POWER and it requires MECHANICAL EQUIPMENT, but power equipment is what "makes it pay." We offer the best in our lines at most reasonable prices.

CHAPMAN ENGINE This powerful, handy farm engine solves the work problem, summer and winter. It will run anything from a cream separator to a grinder or silage blower. Just start the engine and it leaves you free to feed the machine that is doing the work in hand, or to do some entirely different work, elsewhere. No helper needed—enormous saving in labor and time. In our "CHAPMAN" Engine, the reliable timing device is adjusted for you at the factory and, together with governor and valve mechanism, is protected from injury in a cast-iron cam box. You save precious time and expense and secure long, uninter-rupted, perfect service by the more than ordinary precision and constructive and material quality of the CHAPMAN Write for our Booklets on Engines for Farm use.

TORONTO Windmill A perfectly balanced, easy running Windmill, giving splendid, steady power for pumping. The TORONTO Windmill has adjustment to prevent racing in high wind. Requires oiling once a month.

TORONTO Economy SILO The TORONTO Economy Silo is made to compete with the best Silos found on the continent. Made by our Tank experts, who make 90% of the tanks in Canada. 2-inch creosoted spruce, air-tight doors and windows, easy to put in and take out. Shipped ready to set up. Get our price.

WRITE FOR CATALOG



"NATIONAL" OILS and GREASES

COST LESS TO USE BECAUSE THEY ARE BETTER MADE Buy oils made to specifications and not to a price!

Write the Canadian Oil Companies Limited at Winnipeg, Regina or Calgary for copy of their new 56-page catalogue. Use coupon below.

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Send me your new catalogue, also quote prices on the following:—

Name.....  
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# MIXED FARMING

## MANITOBA - SASKATCHEWAN - ALBERTA



BY W.C. McKILLICAN B.S.A.

No. 24

### The Marketing of Mixed Farming Products

#### Supply and Demand

ONE of the first essentials to the successful marketing of farm products is an understanding of the natural laws and conditions that govern the fluctuations of markets. The most important of these is the law of "supply and demand," which means that the price of a commodity is fixed by a balance between the supply of that commodity and the demand for it. If the supply exceeds the demand, the price falls, and if the demand exceeds the supply, the price rises. This law is universal in its application, and where prices are arbitrarily fixed, it is not in defiance of the law but by getting control of the supply that such fixing of prices is accomplished. If a great excess of any commodity is thrown upon the open market at any one time, the inevitable result is low prices. Manufacturers and merchants watch the demand and regulate and limit their output accordingly, so that they seldom have to accept less than their value for their goods. The farmer cannot control his output to the extent they do, but a better knowledge of general conditions will help him to avoid marketing in times of over-supply, and to produce the things for which the demand is good.

The marketing of different products varies greatly with the scope of the demand they supply. Some of our products go out and become a factor in the general world commerce, others may be used over a wide area within our own country, and others again may be marketed entirely within a narrow neighborhood. Wheat, for instance, is a product of Western Canada that competes in the world's markets; a surplus in our own country does not lower prices unless at the same time there is a world wide surplus. The chief object of attainment in dealing with such a market is to have our product reach the ultimate consumer with as little cost and waste as possible, and to have it get within the reach of as many ultimate customers as possible. Milk for drinking purposes may serve as an illustration of the other extreme in scope of market; the possible market for it is usually limited to one town. One new

dairyman going into business might make an over-supply and ruinous competition, or one quitting business may leave the townspeople short of milk. Such a business presents an entirely different phase of the marketing problem from that presented by wheat. Here the question of reaching the market sinks into insignificance, but controlling the steadiness of the market becomes very necessary where, in the case of wheat, it would be an impossible dream. I do not propose to discuss the effect of the law of supply and demand on each farm product, but simply to illustrate the necessity of observation and study on the part of each producer in regard to its effect on the products he has to offer.



"What is there to it?"

Courtesy Canadian Kodak Co.

#### When to Market

One result from a better recognizing of the law of supply and demand should be better timing of the arrival of our products on the market. The market for practically all our farm products in Western Canada is affected by seasons of glut which depress prices. Most of the grain crops and live stock are marketed in the fall and early winter, and, as a result, prices are low at that time. The man who can plan to place his products on the market at some other time is able to make more money. For instance, if instead of selling steers and oats in the fall at low fall prices, he uses the oats to fatten the steers and sells in the spring, the price obtainable will be much higher. Breeding and feeding operations may be so planned that live stock will be ready for the market when the supply is small and the price high. Most cows freshen in the spring and milk during the summer. Milk is plentiful and cheap

in the summer, but scarce and dear in the winter. Those who have their cows freshen in the fall and do their best milking in the winter can market the milk at much better advantage.

#### Fitting Products for Market

It is the business of any producer to give the consumer what he wants. The desire of the consumer is expressed by the willingness to pay more for what he wants much than for what he takes because he cannot get better. Under primitive and disorganized marketing conditions, the consumer's desire for a high grade of produce is but feebly expressed in variations in price. In the old fashioned country store, eggs are eggs, whether clean, dirty, fresh or old; all bring the same price. Not so long ago beef was beef whether off a fat two-year-old or an old milker. Such marketing conditions are very discouraging to the producer of a good article and are always indicative of an unimportant and not very profitable line of production. Whenever a product becomes important in a country, and the marketing of it becomes systematized and organized, there is a great variation in price between good and bad. The Chicago market for beef cattle is a good illustration; a recent live stock paper reporting a day's quotations, shows 19 different classes of cattle varying from prime steers at \$9.85 to canner cows at \$3.25. Our own Winnipeg wheat market often shows up near twenty different classes of wheat in a day's grading.

Whenever a person is able to reach a discriminating market, where products are classified and paid for according to merit, it pays to plan to get the premium allow-

ed for good quality. It may sometimes be that the cost of making an article first class may be greater than the increase in price. And here the producer must use his common sense and exercise his desire for high quality only so far as there is a proportionate return for the cost of improvements. But, generally speaking, the animals or products that fetch the top prices are the money-makers and those that fill the ranks of inferiority are the money-losers. Good quality and proper finish are therefore the very foundation of successful marketing. The man who produces an article of real quality seldom lacks a purchaser even when the demand is poor. In commanding a good price on the market, appearance has about as much influence as real inherent merit. Farmers are inclined to forget this. But the average city consumer judges more by outward appearances than by anything else. An egg may be perfectly fresh and good, but if it has a smear of filth across it, Mrs. City Housekeeper turns up her nose and does not want it. Even a carload of steers, though they go before the sharpest of buyers will bring more if they have been well bedded and arrive clean and dry than they will if they arrive in the yards plastered over the back with filth. Uniformity of product both in regard to appearance and quality is a great help in finding a ready sale and especially in holding a market. A person or company that can establish a reputation for reliability has no difficulty in establishing a market for his or their wares. This is only done by having the output uniform in quality at all times.

#### Marketing Direct to Consumer

It is often possible to increase the profit on some commodities, such as dairy products, poultry, vegetables, etc., by establishing a direct communication between the producer and the city consumer. In this way the dealer's profits and expenses are cut out and a saving is possible to both parties. To make such an arrangement satisfactory, absolute reliability on the part of the producer is required. He must also be a sufficiently good judge of his products to know when they are not first class. To get good prices, the producer must find a customer, who wants good food, and to keep such a customer he must ship only first class

Continued on page 20

# OUR FAMOUS AJAX FENCING

AT PRICES YOU CAN EASILY AFFORD TO PAY.

**22c TO 55c** Per Rod F.O.B. Winnipeg

**22c TO 55c** Per Rod F.O.B. Winnipeg

**Prices Advance April 15th**

We offer you what thousands of Western farmers consider the highest grade fencing procurable. At prices that will save you 25% and more.

Our "AJAX" Fence is heavily galvanized to prevent rust, does not sag, bulge out, or buckle, always stretches evenly, and stays stretched.

Order your quantity by local freight in less car lots or club together with your neighbors and make up a carload shipment of 24,000 lbs. and obtain the carload rate, which in some cases will amount to 9c per 100 lbs. in Manitoba to 33 cents per 100 lbs. at Calgary, Alberta. We will quote you delivered prices in car lots and guarantee you a saving of \$25 to \$100.00 per car.

Every rod of WIRE USED IS FULL GOVERNMENT GAUGE, not the light wire used by other merchants. It is a hard proposition to tell the difference between No. 9 and 9 1/2 wire, but we stand behind every rod we sell with the following guarantee:

Buy the Genuine Ajax Fence if you want the best. We save you 25 per cent. or more and guarantee to please you. Sold only in full bales of 20, 30 and 40 rods each, and on 30 days' trial. Money back if unsatisfied.

**EVERY ROD OF OUR EXTRA HEAVY AJAX FENCING WE GUARANTEE TO BE MADE OF TWO TOP AND BOTTOM WIRE AND ON OUR HEAVY AJAX FENCING BOTH TOP AND BOTTOM WIRES ARE FULL NUMBER NINE GAUGE WITH NUMBER TWELVE INTERMEDIATE AND STAY WIRES. WE WILL TAKE BACK ANY WIRE FOUND TO BE UNDER SIZE, WILL REFUND FREIGHT CHARGES BOTH WAYS AND WILL DONATE \$50.00 TO ANY CHARITABLE INSTITUTION PURCHASER MAY NAME.**

We make this guarantee because a number of other wire manufacturers are using a lighter gauge wire and quoting similar prices to ours, but when you buy a lighter grade fencing you are not saving money as you will have to replace in half the time to what you will our AJAX BRAND.

Take all the above into consideration when purchasing fence and you will find AJAX will cost you 2 to 3 cents per rod less than that offered by others. Owing to unsettled market all prices will advance April 15. Orders received prior to that date will be quoted as quoted.

**DEMOCRAT 67.00**

Our Big LEADER

"AJAX" Heavy Fence, No. 9 Top and Bottom wires, Intermediate line and stay wires No. 12

Cat. No.	Style	ORDER BY RETURN	Spire between line wires	Weight per rod	Price
7202	Hog Fence	7 wire 20-in. high, stays 13-in. apart	3, 4, 5, 5, 6	11 lbs.	25c
07202	Hog Fence	7 wire 20-in. high, stays 16-in. apart	3, 4, 5, 5, 6	11 lbs.	31c
8322	Hog and sheep	8 wire 22-in. high, stays 13-in. apart	3, 4, 5, 5, 6	11 lbs.	25c
08322	Hog and sheep	8 wire 22-in. high, stays 16-in. apart	3, 4, 5, 5, 6	11 lbs.	31c
9302	Sp. Hog and Sheep	9 wire 20-in. high, stays 13-in. apart	3, 4, 3, 4, 5, 5, 6, 7	11 lbs.	31c
9422	Stock Fence	9 wire 22-in. high, stays 13-in. apart	3, 4, 3, 4, 5, 5, 6, 7, 8, 9	11 lbs.	32c
10422	Stock Fence	10 wire 20-in. high, stays 13-in. apart	3, 3, 4, 4, 5, 5, 6, 7, 8, 9	11 lbs.	37c
20002	Poultry Fence	20 Bars, 6-in. high, stays 8-in. apart	2, 2, 2, 2, 2, 2, 2, 2, 1, 1, 3, 3, 3, 2, 3, 2, 3, 2, 4, 4, 4, 4, 5, 5, 5, 6	10 lbs.	62c

**67.00** is a very low price for a vehicle of this construction. Has Triple Hays Spring in front and Elliptic Spring in rear. Double reach gear, 1 1/2 Double Collar Steel Axle. Body is 33 in. wide and 50 in. long, substantially braced 12 in. wood dash. Wheels extra large, 1 1/2 riveted rims, 43 in. front, 44 in. rear. Seats are removable, fasten to box with patent fasteners. Spring cushions, with falls upholstered in good grade imitation leather.

Order No. 488—Our Special Leader, complete with Pole and Drivers

**67.00**

"AJAX" EXTRA HEAVY FENCE. Made of all No. 9 wire throughout.

Cat. No.	Style	Price at Winnipeg
4342	Field Fence	10, 11, 12
5402	Field Fence	10, 10, 11
6302	Field Fence	7, 7, 8, 8, 9
7482	Field Fence	6, 6, 8, 8, 10, 11
10392	Stock Fence	3, 3, 3, 4, 5, 5, 7, 8, 8, 9
7202	Sheep and Hog	3, 4, 5, 5, 6

"AJAX" HEAVY SPECIAL HOG, STOCK AND POULTRY FENCE. No. 9 Top and Bottom, No. 12 intermediate and line wire. 60 in. high, 16 line wires, stays 8 in. apart, spacing 2, 2, 2, 3, 3, 3, 3, 4, 4, 4, 5, 6, 7, weight 13 lbs. Price per rod **55c**

"AJAX" GATES 4 FEET HIGH

Width	Weight	Price
11 ft.	35 lbs.	\$2.00
12 ft.	40 lbs.	\$2.20
13 ft.	45 lbs.	\$2.40
14 ft.	50 lbs.	\$2.60
15 ft.	55 lbs.	\$2.80

**33.50** WITHOUT COLLARS, WITH HAMES

Brillies, box Leaps, Cup Blinds, Lines 1 in., 2 1/4 in. 3 1/4 in. Head

38.50

These are our Leader. Extra Heavy Ring Trace, general purpose. Harness made-throughout extra strong and heavy; a Harness that will please the most exacting.

**24.75** COMPLETE WITH COLLAR

**OUR BIG FREE CATALOG**

is Bigger and Better than ever. You should have a copy of this wonderful book. It's yours Free for the asking. Every thing in Harness, Washers, Wire, Vehicles, and practically everything for the horse. Get your copy today, a post card will bring it.

Here's the specifications showing how the wonderful Harness is made up. Remember you are not buying a chain harness when you purchase this set, but an actual 1 1/2 ply Leather Trace, Brillies are 2 1/2 in. with Concord Blinds, Traces, 11-3 Mingley Trace, Chain Ends, Lines, 7 1/2 in.; Bark Pad, Felt Lined; 1 1/2 Riveted Buckle; 1 1/2 Martingale; Chain Pole Strap Collars, Duck Lined, Short Straw, Bolt Hames. **24.75**

Complete with Collars

**Renowned Domestic Jewel Blue Steel Range**

Burns wood or coal Full asbestos lined Fully Guaranteed 18 in. Oven, six 9 in. Lids. Complete with High Close and Reservoir. Face.....

**30**

Extra Large oven bakes to perfection. Body is made of Wellesville polished steel and the nickel-plated parts are high silver nickel. Has four or six lids, high close, long front damper; pouch feed and is full asbestos lined. A range to last a lifetime.

With 16 in Oven 49 in Lids **28.50**

**GET YOUR NEW BUGGY EARLY**

**EVERY BUGGY WE SELL IS GUARANTEED FOR TWO YEARS**

**69** Complete with Shaft at Winnipeg

Here's the very best in an Auto Seat Buggy. We have put every improvement possible into this Buggy, making it equal to any \$100.00 vehicle offered elsewhere. The wheels are screwed and belted between each spoke; the gear is our time-tried double reach full iron; the piano body is large and roomy, securely braced and has patent leather dash. The seat is upholstered with genuine leather, extra large and roomy, full spring and has high automobile back. Throughout we have given every detail the minutest attention. Painting is the acme of perfection. Don't hesitate to order this buggy on approval. Money returned and all charges if not satisfactory. Price at Winnipeg **69.00**

**CHALLENGE WASHER**

**30**

Has been successfully used for the past 10 years and nearly 6 million machines in use is the best argument for its reliability and real merit. Machine has two arched rub-bearings which oscillate in opposite directions by turning the fly wheel one way. The action thus afforded is similar in effect to the rubbing and scrubbing action of washing on the washboard. Will wash the most delicate and filmy garments with absolutely no wear or injury. Sold on **30 Day Trial. Price F.O.B. Winnipeg 9.75**

**GETTING THE MOST OUT OF THE MOTOR CAR**

THE following letter succinctly tells a story of the labor saving, as well as the money making possibilities of the low priced motor car, and, although the old "one-lunger" seems to have fallen into the discard, some of them are yet running, or working, thus living as pioneers of the motor industry. As a vehicle for milk delivery they never needed a horn to announce their approach, as noise was a component part of their construction.

Every use, from power, as for the Brown Farm of Applehouse Hill, to road service may be expected from the output of practically every automobile manufacturer; thereby making the motor car a thing of utility, as well as a pleasure vehicle for luxury or speed. It is doing its own, a great part, in putting the farm on a business basis.

Cranston, R.I., Nov. 11, 1915.

"Several years ago I owned a 'one-lung' Cadillac. When not using it for pleasure I made it useful about the farm. The back 'dicky' seat came off with four bolts and I made a very useful express rack to fit on, back to the front seat. This rack held twenty ten-quart milk cans and the car took the output of our dairy, six miles, to the retail dealer in town daily. We also did 'odd jobs' with the car, such as taking produce to market, a calf to the butcher, or a hurried trip for repairs to the mower or binder. We could pull wagons in place with the car, and one summer, being short of a pair of horses, I pulled the rope with the auto for unloading hay.

"Last summer our milk route (retail) proved too long for the horses, so I bought a secondhand Ford for farm use. It had an express rack of nearly the same capacity as the old Cadillac, which now belongs to a nearby fruit grower. The first of October we discontinued our retail route to sell to a hospital at an advantage, so, not needing the Ford for delivery to the extent we needed it while retailing, we kept it on the farm to use as a stationary engine. This is how we did it. I went to town and saw the representative of a mill supply house and together we figured what pulleys, belts and shafting with hangers we would need. I planned to make a plank frame to rest on the ground. On this we placed our two hangers (reversed) and hung the shaft, six feet long, on these with two small pulleys the same distance apart as the rear wheels of the Ford. At one end of the shaft we put a big drive pulley. Next we backed the Ford

# BARGAINS! TO REDUCE SURPLUS STOCK

**ALWAYS GIVE WHEN ORDERING NAME OF PUMP, DEPTH OF WELL, DISTANCE TO DRAW WATER**



Adjust to fit any pump; warranted two years. Order now and have water in abundance always with ease.

**You're losing if not using the Patent Pump Governor**

It makes the hardest working pumps work easy. It can be adjusted to lift any weight desired, from about fifteen to two hundred pounds, by turning the nuts at the top ends of the levers. It can be applied to all pumps that have verticals either flat or round, iron or wood, all lengths of strokes. It will make your pumps work so easy that a child can operate them. Your windmills will pump more than double the amount of water, for they will run in lighter winds. The days of light winds are the days the most water is needed.

	Man.	Sask.	Alta.
Regular	\$2.50	\$2.75	\$3.00
Special	1.95	2.10	2.25

A few hundred to clear at this **Extra Special Price now**; but never again. Send cash with order. We deliver at these prices free to nearest Post Office.

Give Makers Name of Engine, Horse-Power, and Type and Size of Axle



**Cuddy Patent Steering Device**

Big Engines have gone out of favor. Their place has been taken by **small Tractors**. One reason being the small tractor is easier to steer. If you own a **big Engine** make it just as easy to steer as a small one by purchasing a **Cuddy Patent Steering device**. At the price below it is a **winner** for you. Our regular price is **\$100.00 each**, but we will sell a limited number—**\$49.00** new and fully guaranteed at—**F.O.B. Winnipeg. Cash with Order**. Send Order now—the first received the first filled.

## The Western Steel & Iron Company Limited

AUTHORIZED CAPITAL, \$300,000      ESTABLISHED 1906

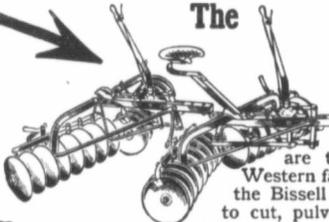
**Winnipeg      Manufacturers      Canada**

onto the plank frame in line with the small pulleys, jacked the car up; took off the tires; and put on a small (two inch) belt connecting each rear wheel to the small pulley nearest it on the shaft. To pull the belts tight we took an auto jack and placed it so that it pushed the auto away from the shaft. A wide, long belt then went from the big pulleys on the shaft to the machine to be operated. In this way we have filled our eighty-ton silo with corn cut by the Ford auto. It worked fine, developed over 10-horse power and was cheaper than buying a stationary engine to do the work. We also used the rig to saw wood and shall use it in the future to grind grain and thresh rye and wheat. It should be added that we found it necessary to keep the radiator full of water; a hose from the barn did nicely and kept the water cool. We recommend the use of a rig as the above to all.

**THE CARBURETOR**  
By C. Collin Campbell

THE carburetor to the novice is, as a rule, a place of mystery chiefly because of its exterior appearance. I find that in most cases he does not understand the principle of operation since the gasoline goes in in such a small pipe and one so many times larger is required on

### The Double Action Harrow For The West



Proper cultivation and clean fields are the needs of every Western farmer. The plates in the Bissell are the correct shape to cut, pulverize and work the ground properly.

## BISSELL DISK HARROWS

Simplicity of construction, every part built for business, proper balance and the knack to get right down to perfect work make the 'Bissell' ideal for Western farms. These *double action* harrows have one disk *out-throw*, the other *in-throw*, giving two full width cuts. Connect up 4, 6 or 8 harrows with engine power for a large complete Disking Outfit. Write Dept. L

Manufactured exclusively by  
**T. E. BISSELL COMPANY, LTD., ELORA, ONT.**  
Write to any of the  
**Jno. Deere Plow Company's Branch Houses      78**

the other end. With a carburetor as well as everything else there is a reason.

Gasoline as you see it in cans and such will not explode but merely burn and of course if the gasoline were put into the cylinder in this state there would be a faint pressure and the exhaust would be smoky. You may wonder where the pressure comes from if it doesn't explode. This pressure is but the expansion of air by the heat from the gasoline

which has burned. Now right here is where the carburetor comes in; it mixes the gasoline with the proper amount of air and thus forms a gas which, if you could see it, like a mist or a fog. That is why the large air pipe which goes to the engine is required.

Even to the experienced man it is recognized that the carburetor is the seat of a good share of the trouble experienced in automobile

Continued on page 19

A Ca tol  
The nish a talion, present you a overse for yu essent soldier in the Not Count Duty ideals Libert foot. it resu tristr right. If y are n you v bring are to any t may t A. Cu tural

L We giving "Call ham circ Agric struc friend felt p critic life th up w spend in mo of ad to ex Mr broth "som these of th a ser (Can with in J. Cunn sidera opera stand

**A Call to Ex-Students of Manitoba Agricultural College**

The college has decided to furnish a platoon for the 196th Battalion, in which students, past and present, will be associated. If you are contemplating joining an overseas battalion, this is the one for you to join. Comradeship is essential for the making of a good soldier, and you are sure of that in the M. A. C. platoon.

Not only do your King and Country need you, but it is your Duty to see to it that the high ideals of Truth, Honour and Liberty will not be trodden under foot. No sacrifice is too great, if it results in the overthrow of militarism, and the justification of right against might.

If you have any friends, who are not ex-students, but whom you would like to be with you, bring or send them along. We are ready to receive recruits at any time. Fuller particulars may be had by writing Lieut. R. A. Cunningham, at the Agricultural College.



Lieut. R. A. Cunningham, M.A.C.

We take peculiar pleasure in giving publicity to the above "Call to Arms." Lieut. Cunningham is well known to a large circle of ex-students of Manitoba Agricultural College as their instructor in chemistry. He is a friend of whom we have always felt proud, and at the present critical moment in our national life the step he has taken in lining up with the fighting force and in spending his energies to gather in more men, fills us with feelings of admiration which are difficult to express.

Mr. Cunningham has two brothers now actually engaged "somewhere in France." One of these started in at an early stage of the war, the other ("Bill") is a sergeant of the 43rd Battalion (Cameron's) and left Winnipeg with that fine body of men early in June last year. Professor Cunningham himself has had considerable experience in artillery operations, and in view of his outstanding abilities and sterling

manhood we say that any men lining up under his wing will find a leader and guide whose counsel and help will never fail them.

**Pre-Eminence of Portage Plains in Crop-Raising Records**

*Mr. William Fulton (who contributes the following striking details of crops grown in Portage Plains) is one of the oldest of the old timers. He has proved himself again and again a most accurate and pains-taking observer and the Dominion Department of Agriculture has rested on his figures since he began to compile the crop results of that famous grain-growing country many years ago. Ed.)*

In so far as the Municipality of Portage la Prairie is concerned, while the past year has seen a phenomenal yield, there have been other years in which equally good yields have been recorded, but they did not receive so much publicity.

No doubt present-day conditions have tended to "make more" of the present season's crops than in former years, and the great necessity for just such a yield at this time has possibly clouded the minds of people to the fact that the soil has simply rewarded the farmer in accordance with previous conditions and good workmanship.

The season of 1915 opened with ideal weather conditions. The rains came at the opportune time, the heat was growth producing, not withering, and the good seasons of former years were produced. Harvesting conditions need not be referred to, as it is the intention to deal with the matter of yields.

In the Municipality of Portage la Prairie some extraordinary returns have been recorded. True it is that these are on patches of from about ten to one hundred

**Meco ENGINES**

**Cut Your Power Cost**

In initial outlay and later upkeep MECO Engines are the last word in gas engine economy: they are designed to save you fuel, trouble and repair bills—and they do it.

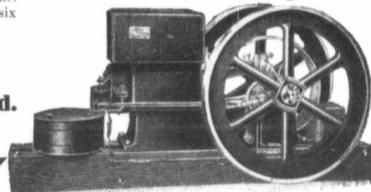
The MECO is a strictly high grade engine, built of the best material by the best mechanics. It is 4-cycle, water cooled, with jump spark ignition, centre fire spark plug in cylinder head, and speed regulator which enables operator to change speed while engine is running. The engine shown below is our regular gasoline engine. Cash Price, complete ready for work. Made in six sizes.

2 H. P.	\$ 58 00	3 H. P.	\$ 87 00
4 H. P.	116 00	6 H. P.	174 00
8 H. P.	232 00	12 H. P.	348 00
P. O. B. Winnipeg			

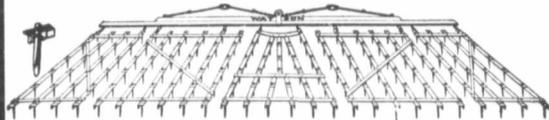
**The John Stevens Company, Ltd.**  
661 Henry Avenue, Winnipeg

Separate bed, cylinder, cylinder head and water hopper. This adds strength to main bearings and lets you renew any of the parts if necessary without having to buy a new engine.

**\$29.00**  
Per Horse Power



**The Best You Can Get**



There is satisfaction in knowing that you have the best when you buy

**Watson's Boss Steel Harrows**

The main feature of these harrows are their strength. Bars are all 1 1/4 inch angle steel. Cross bars are of channel steel, strongly bolted. Steel wedges hold each tooth securely in place with edges on direct line of draft. Made in two sizes.

101 teeth to cut 17 feet, weighs 240 lbs.  
149 teeth to cut 24 feet, weighs 400 lbs.

The work done by these is of the finest. You look for and get a first class job. YOU SHOULD GET OUR CATALOG AT ONCE.

**Only Complete Stock**

of repairs for Monitor Drills, Manure Wagons and McLine Plows in Canada

**YOU SHOULD GET OUR CATALOG AT ONCE**



311 CHAMBERS STREET, WINNIPEG

acres, yet had the same conditions existed all over the farm, where the ten acres yielded 80 1/4 bushels of wheat, it is reasonable to assume that the same yields would have been obtained on the entire farm of James Ector, on whose farm the above yield was made.

Other grains were produced at the same wonderful rate. George Stacey had a yield of 130 bushels of oats per acre. Thos. Wishart reports 112 bushels of the same grain and Robert Brown 105 and John Hamilton 100 bushels to the acre.

Joseph Trimble reports 93 bushels of barley on a small field of that well known farm.



**Will Save Your Foal from Joint Ill and Navel Disease**

Its efficiency is guaranteed. Write for pamphlet.

**Price \$3.00**

Delivered anywhere. Prepared by

**The Wallin Drug Co.**  
Manufacturing Chemists

407 Portage Ave. Winnipeg



Weight only 4,800 lbs.  
 Brake Test, 24 h.p., Draw Bar, 12 h.p.  
 It is a Kerosene Tractor, built especially to operate on the heavier fuel.  
 It has Twin Cylinders, cast en bloc.  
 Ignition High Tension Dual Magneto, with Automatic Spark Advance.  
 It has a Cooling System of the most approved type.

When plowing is Self-Steering and will turn in a 35-foot radius.  
 Easy to operate—Economical on fuel.  
 All working parts are very accessible and easily kept in perfect adjustment.  
 Transmission Sliding Gear, with Shifts for one speed forward and one reverse.

Gasoline at the end of January, 1916, was 31½¢ per gallon. The price of Gas is soaring all the time. It is highly probable that it will touch the 50¢ per gallon mark before the end of the year, and at a time when you will want it most. When you buy a tractor you need to figure out the cost of operation. Fuel should be one of the chief determining factors. The initial cost of the tractor itself is but a minor consideration. With the positive advance of Gasoline, farmers will naturally turn to a low-grade oil as a substitute. The Waterloo Boy, One-Man Tractor, which is specially constructed to operate on low-grade oil, will give gallon for gallon equal and even greater efficiency at a consequent lower cost per acre. It should not be overlooked that The Waterloo Boy is a Kerosene One-Man Tractor, and we guarantee it to fulfil every requirement we claim for it.

The Waterloo Boy will pull a light engine gang with three 14-inch plows in stubble any depth you wish. It will pull two 12-inch plows in any prairie breaking. On your summer fallow it will handle a disc with harrows behind, at from 2½ to 3 miles per hour. It will drive a 24-hp. thrasher with all attachments at a capacity of 700 bushels of wheat to 1,400 bushels of oats per day. The Waterloo Boy performs this work with efficiency, economy and durability. All in all, it is Special Value. Under the circumstances it will pay you to obtain full information, price, etc. Mailed free. Write us to-day. We also handle Gas and Power Washing Machines, Grain Elevators, Pump Jacks, Small Threshing Machinery, Represented.

**THE GASOLINE ENGINE & SUPPLY CO. LIMITED, 104 Princess Street, WINNIPEG**

# Gasoline is Going Up!

That's why you should be interested in

## The "Waterloo Boy" Kerosene One-Man Tractor

The Manufacturers' Guarantee Fully Protects You

The Gasoline Engine & Supply Co.,  
 Winnipeg, Man.

Noremac, Sask., Jan. 4, 1916.

Dear Sirs:—In reply to your enquiry as to my experience with the Waterloo Boy Tractor, wish to say that I unloaded the machine at Kindersley and drove it home 30 miles. I then broke about sixty acres of very heavy land. You may judge for yourself when I say we always use five horses on one 14-inch plow. I pulled two 14-inch plows at a depth of 4½ inches, which would mean a good ten-horse load, using four and a half gallons of kerosene per acre and barely a quart of Standard Gas Engine oil per day. I then disced the land, made two trips to Kindersley. In one case I hauled 310 bus. of wheat on three wagons, and one empty oil tank behind, returning with three wagons loaded with lumber and oil tank containing 450 gallons of kerosene, using large pinions, making an average speed of three miles per hour.

After threshing my grain, I hauled it with two grain tanks up several steep hills to the elevator. In all my roadwork would amount to about 250 miles. I never had an expert, not even to start the engine. After looking at the connecting rod bearings, I took a thin piece of brass out and the other would not stand taking up at all. I never touched the main bearings and never had to tighten up a nut on the frame since I got it.

I have now enlisted to go to the front and found no difficulty in disposing of my tractor for \$900.00 and can thoroughly recommend it to any person intending to buy.

Yours very truly, (Signed) JAMES H. GRUBB.

It will pull two 12-inch plows in any prairie breaking. On your summer fallow it will handle a disc with harrows behind, at from 2½ to 3 miles per hour. It will drive a 24-hp. thrasher with all attachments at a capacity of 700 bushels of wheat to 1,400 bushels of oats per day. The Waterloo Boy performs this work with efficiency, economy and durability. All in all, it is Special Value. Under the circumstances it will pay you to obtain full information, price, etc. Mailed free. Write us to-day. We also handle Gas and Power Washing Machines, Grain Elevators, Pump Jacks, Small Threshing Machinery, Represented.

Mr. Fulton himself is convinced that the increased average of wheat is due in a large measure to the advantage of "Marquis" wheat seed over Red Fyfe in pro-

duction, where large yields are the result of the season's crop.

Below will be found a list of well known farmers and the yields they report for the season of 1915:—

Name	Wheat Bushels to Acre
Dave Little	63
J. Thompson	58
J. Ross	58
Simon Henry	62
Chas. Drain	62½
H. Ferriss	54
Chas. Venner	47
Robert Scott	53
Jas. Bray	60
J. Moxham	56
John Grant	64
John Patterson	62
Thos. Stait	74
E. Muir	75
Thos. Hopwell	49
Hall Bros.	61
McKenzie Bros.	71½
John Burnett	50
Jas. Etor	80
J. E. Turner	63½
Jas. Hamilton	74
W. Anderson	7,000 bushels off 105 acres

### An Amazing Story from Alberta

We are favored with an advance copy of a wonderful publication entitled "Farm Crops in Alberta," which has been issued by direction of Hon. Duncan Marshall, Minister of Agriculture. This booklet has been carefully compiled from a mass of first-hand information in possession of Mr. Charles S. Hotchkiss, Chief Publicity Commissioner, and is the most effectively illustrated titbit of publicity literature we have yet seen issued in Western Canada. There are no superfluous trimmings of costly and sometimes very doubtful "art" work about it. Every illustration is a photographic reproduction of

**Dr. Thomas' Eclectric Oil**  
 Relieves all Pain in Man or Beast  
 25 Cent Bottles at all Dealers

the actual happenings in the field or of the soil's product on exhibition.

The book could easily have been extended to many times its proportions, had the intention been to print the province's voluminous figures of crop and stock raising record. The purpose, however, evidently is to present a statement which can be focussed in the mind in course of a fifteen minutes perusal. In doing this Mr. Hotchkiss has been wonderfully successful. As a medium which by its evident sincerity and immunity from mere advertising bombast will hold the attention and command the respect of the man it is intended to reach, there can be no doubt that it will achieve the desired result in gratifying measure.

We, too, have been compiling Alberta facts—some of the more recent of which are of an astounding character—and it is our purpose in the April issue to devote considerable space to these, and in presenting them will have the co-operation of friends on the spot with cameras that cannot lie.

**Keep The Toes In Your Harness**  
 Keep it strong and good looking with  
**EUREKA HARNESS OIL**  
 Makes harness last longer and look better.  
 Dealers Everywhere  
 The Imperial Oil Company Limited  
 Branches in all Cities

**FREE** to stockmen and poultrymen our 80-page illustrated booklet on feeding, how to construct a house which will accommodate 100 hens; gives dimensions and measurements of every piece of lumber required. Deals with the common diseases of stock and poultry and the remedies. Tells how to cure rot in four days. Contains full information about Royal Purple. THE W. A. JENKINS MFG. CO., LONDON, CAN.

**THINGS TO ORDER NOW:**  
**SEEDS**  
 Trees and Shrubs  
 A full line—mostly Western Grown.  
 Write for catalog  
**FENCING**  
 Woven and Barb Wire  
 Get our prices, laid down at your station.  
**POSTS**  
 Split or Round  
 Delivered free on application.  
**PAINT**  
 Oils, Varnish, etc.  
 This is our new "Equity" Paint. Equal to the best, at a great saving in price.  
**GOPHER POISON**  
 Kill-Em-Quick!  
 at wholesale prices less full trade discounts for cash and quantities.  
 Write for price list.  
 IF YOUR ASSOCIATION BUYS SUFFICIENT TO SECURE THE LOWEST PRICE, YOU CAN SAVE THE MEMBERSHIP FEE IN THE COST OF TWO PACKETS OF GOPHER POISON.  
 Buy through your Local Association and get the benefit of Co-operation.  
**The Saskatchewan Grain Growers' Association**  
 801 SCOTT BLOCK  
 MOOSE JAW SASKATCHEWAN

# CUSHMAN Light Weight ENGINES

## For All Farm Work

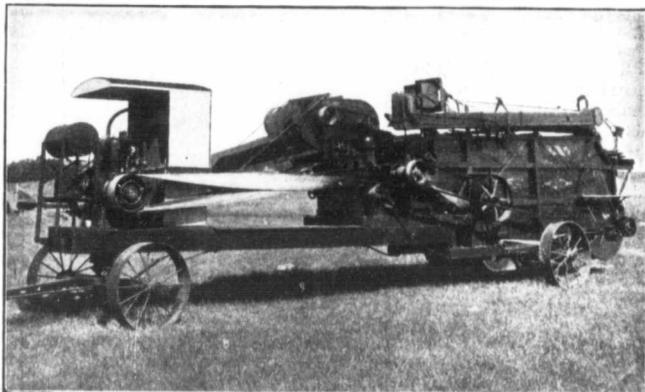
4 to 20 H.P.

Cushman 4-Cycle Engines are built to run without trouble and to do things no other engines will do. They represent a great advantage over ordinary stationary engines, in vertical balanced design, material and workmanship. Highly efficient because of light weight, higher speed, reduced friction and lower operating cost.

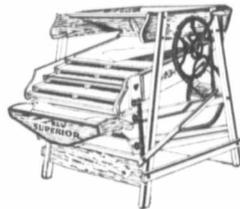
Cushman Engines are the lightest weight farm engines in the world, yet they are even more steady running, quiet and dependable than most heavy engines, because of Throttle Governor, perfect balance and almost no friction nor vibration.

Direct water circulating pump, preventing overheating, even on all-day run. May be run at any speed desired; speed changed while running. Enclosed Crank Case, gears running in bath of oil. Equipped with Schebler Carburetor and Friction Clutch Pulley. Mounted on Truck or Skid as preferred.

Because of very steady speed, the Cushman makes the best power for Cream Separators or Milking Machine, or for electric lightning outfits.



**CUSHMAN COMBINATION THRESHER**  
8 h.p. with Straw Carrier and Hand Feed. 20 h.p. with Wind Slacker and Self Feed.  
15 h.p. with Wind Slacker and Hand Feed. Equipped with the famous Cushman 2-Cylinder Engine.



### King of Wild Oat Separators

Save dockage, clean your grain before marketing with The Lincoln "New Superior" Wild Oat Separator.

With our patented open and blank space sieves it positively separates every wild oat seed, causing them to lie flat, and not up on end.

It is Strong, Well-Built and Bolted—Not Nailed.

Our machine is built to clean any kind of grain and do perfect work. What the "New Superior" cannot do no other can do.

Made in sizes 24, 32 and 42 inches wide, with or without bagger, and with power attachment for gasoline engine if desired.

Talk with Your Dealer about the CUSHMAN LINE or write for FREE CATALOG

**CUSHMAN MOTOR WORKS**  
**OF CANADA, 286 Princess St., Winnipeg, Man.**

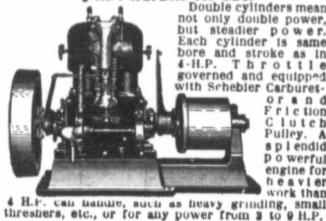
### 4 H.P. SAVES A TEAM ON THE BINDER



The 4 h.p. Cushman is the one practical binder engine. Its light weight and steady power permit it to be attached to rear of binder.

With a Cushman you can cut from 8 to 10 acres more and with less horses. If in heavy or tangled grain, and the sickle chokes, all you need do is to stop the team; the engine clears the sickle. Binder runs the same, whether horses go fast or slow or stop. Binder will wear several years longer, as it is not jerked faster and slower by the horses. Attachments furnished for any binder.

### 4 H.P. WEIGHS 320 LBS.



Double cylinders mean not only double power, but steadier power. Each cylinder is same bore and stroke as in 4-H.P. Throttle governed and equipped with Schebler Carburetor and Friction Clutch Pulley. A splendid powerful engine for heavier work than most 4 H.P. can handle, such as heavy grinding, small threshers, etc., or for any power from 2 to 9 H.P.

### The Lincoln Smut Cleaner and Pickling Machine



No machine can equal them for treating Seed Grain. Made in two sizes. Sold on a positive guarantee to prevent smut.

With high prices assured for grain next year, every farmer will realize the necessity of treating his seed grain so that he may have an increased yield of perfect quality grain.

Lincoln Smut Cleaners separate smut balls, wild oats, king heads and all light seeds from wheat, also wild oats and all light seeds from barley. By them the farmer can get perfect results. The grain is thoroughly pickled and elevated into the wagon box, being dried by the draining elevator sieve. An automatic skimmer removes all impurities over a drainer sieve at tail of machine, ejecting same, while wasting none of the pickling solution. Capacity 30 to 75 bushels per hour.

No. 3 machine handles 30 to 50 bushels per hour; No. 4, 50 to 75 bushels, accommodating either the small farmer or the large grain raiser—strong construction, heavy timber; rustless solution tanks of 30 to 50 gallons capacity. Write to-day for particulars and prices.

Builders of Light Weight Engines for Farm and Binder use. Distributors of Reliable Power Driven Machines, such as Fanning Mills, Grinders, Saws, Cream Separators, Power Washing Machines, etc. Also Barn Door Hangers and Mountaineer Neck Yoke Centres.

and stationary engines. In the flush feed type of carburetor, that is, where the supply tank is located above, the gasoline supply is regulated by a small needle valve which in turn is operated by a float. When the gasoline reaches a certain level the float operates the needle valve. Just on the level which the valve is adjusted to keep another needle valve is located. On the outside can be seen the air inlet. When the engine piston proceeds on the downward stroke which takes in the gas, it produces a suction through the carburetor. This is when the gas is formed and taken into the cylinder.

There are many troubles experienced in the flush feed type. The float may stick so it can not rise to close the needle valve and the gasoline will overflow, commonly known as flooding. Tap the outside lightly, remove the top and lift up the float. If it is a cork float it may become "water-logged." In such a case remove it, dry it out and varnish with shellac. If it is a hollow metal float it may leak and become filled with gasoline. In this case remove it, put it in hot water, and locate leak by bubbles, enlarge the hole slightly and solder, taking care to heat the float as little as possible.

The inlet needle valve may stick, press down hard and rotate. Dirt may clog in the valve or the nozzle and in this case it is better to give it a thorough cleaning. Water, of course, will not explode, so when it gets mixed with the gasoline the engine will mis-fire or stop. This means you must draw out all the gasoline and strain out the water.

### The Other Point of View

"So you are taking summer boarders this year?"

"Yep; we didn't have to, but my wife loves to hear 'em talk that city dialect."



Nervous Country Gentleman (as taxi just misses an island). "Do drive carefully, please. I'm not accustomed to taxis."

Driver. "That's funny! I ain't used to 'em, either. As a matter of fact I've only taken this on for a bet."

Practical Talks to Threshermen

Continued from page 10

tion that this may soon be remedied.

The type of motor is another thing that needs careful consideration. The tendency is to use light weight motors of the high speed automobile type. This is almost necessary if weight is to be reduced to the minimum. It is the effort to reduce weight that undoubtedly has brought in the light weight motor rather than the belief that such a motor is best adapted to the work in hand. It is argued that because an automobile performs well with a light weight motor that a tractor should do just the same. But there is a difference in service requirements. The tractor motor is compelled to work at practically full capacity for hours at a time while an automobile motor is only called upon for about thirty per cent of its power except on hills or bad roads. When these conditions are not, it is generally found that the light motor soon gets hot or shows other signs of trouble.

Mixed Farming

Continued from page 16

products. One shipment of bad butter may disgust the customer and make him quit.

If for any reason the butter turns out badly on some occasion or the potatoes get scabby or anything else goes wrong. It is much better to turn them into the ordinary channels of trade at a lower price than to spoil one's reputation with a good steady customer.

Co-operation

To get the best possible returns for their live stock and other mixed farming products, the farmers of Western Canada must cooperate profitably in production.



"Jumbo" Land Packer and Pulverizer

Packs and pulverizes the land, conserves the moisture, increases the crop yield. Saves labor, machinery and horses.

Can be immediately attached to any make of plow. Is giving satisfaction everywhere.

Shipments made same day order is received. Price \$18.00.

Send for full information and testimonials.

Winnipeg Steel Granary & Culvert Co. Limited, Dept. C.T.

P. O. BOX 3054 WINNIPEG  
Factories at St. Boniface and Regina

We also manufacture Steel Shingles, Corrugated Iron, Steel Siding, Ceilings and Walls, Tanks of every kind, Granaries, etc.

Send sizes for estimates.

Name this magazine when writing advertisers

Some Hot Day Next Summer You'll Long for a Power that will Save Your Horses

DESIGNED BY FARMERS—MEN WHO KNOW YOUR NEEDS



The Grain Growers' Special Tractor as sold in 1915 was unique, an engine not quite like any other made. It was designed by the farmers' own company to meet conditions peculiar to Western Canada—and it made good. This year the tractor we offer is of the same type as last season's but with several valuable improvements added, improvements suggested by actual working experience. The fuel tanks have been transferred to the wheel tender so that they will not obstruct the view of the operator while running the engine; the position of the radiator has been changed to give a better view; the belt pulley now is fitted with a latch dog so that the motor can be started with the belt on. It will develop 12 horse power on the draw bar and 24 horse power on the belt, a conservative rating when compared with factory trials and users' testimony.

Price complete with Patent Steering Device, F. O. B. Winnipeg

\$1200.00

Equipped by a four cycle, horizontal opposed motor, with two cylinders, each of 6 in. bore and 8 in. stroke. Fly ball governor, high tension magnets. Force feed rollers. It burns gasoline, kerosene or distillates. Travels at two direct forward speeds 2 1/2 miles per hour and 3 1/2 miles per hour—and one reverse.

A Brief Description

It weighs 6,700 lbs. and is 15 ft. 9 in. long and 7 ft. 7 in. wide. The main drive wheel has a diameter of 63 in. and a 20 in. face. The land wheel is 63 in. in diameter and 8 in. wide, while the diameter of the front wheel is 36 in. and its face 7 in. Power is supplied by a belt.

THE GRAIN GROWERS' SPECIAL TRACTOR IS ESPECIALLY ADAPTED

for use with our G.G.G. Engine Gang Plows, Engine Disc Harrows with G.G.G. Seed Drill, Engine Tandem Disc Harrows, G.G.G. Forker Tillers and either the G.G.G. Hanning Bird or Grain Growers' Special Grain Separators. Price complete with Patent Steering Device, F. O. B. Winnipeg \$1200.00

SEEDS FOR FIELD OR GARDEN

We are in a position to furnish leading varieties of wheat, oats, barley, rye, peas, flax, clovers, grasses, alfalfa, silage corn—including Minnesota 13 and Longfellow Yellow Dent—rape, field roots and garden seeds, both flower and vegetable. Our seed is all cleaned, graded and guaranteed and is sold at very attractive prices. Write us for particulars.

In addition to the implements mentioned above, this farmers' company handles Harrows, Packers, Manure Spreaders, Corn and Potato Machinery, Haying Machinery, Wagons, Buggies, Gas Engines, Grain Grinders, Feed Cutters, Fanning Mills, Grain Picklers, Wood Saws, Pumps, Scales, Incubators (hot air), Brooders, Washing Machines, Harness, Coal, Flour, Lumber, Cement, Builders' Supplies, Woven Wire Fencing, Barbed Wire, Fence Posts, Binder Twine and other commodities.

The Grain Growers' Grain Co. Ltd.  
Branches at REGINA, SASK. CALGARY, ALTA. PORT WILMIAM, ONT.  
Winnipeg—Manitoba Agency at NEW WESTMINSTER British Columbia

OUR NEW CATALOG

Have you received a copy of our 1916 Catalog? If not, write NOW for Catalog G. For Saskatchewan farmers a special catalog has been issued jointly by the Saskatchewan Grain Growers' Association and this company. Copies can be had by writing to the central office of The S.G.G.A. at Moose Jaw or direct to us.

CANADIAN THRESHERMAN COUPON

The Grain Growers' Grain Co., Ltd., Winnipeg, Man.

I have looked over the list of implements and supplies handled by your Company. I will soon be in need of

.....  
.....  
.....

Please let me have particulars and prices laid down at

..... Station.

signed

P.O. .... Province

Farmers' Friend Boss Harrow



Price \$20.00

Why Not Buy Your Harrows This Spring Direct From Our Factory

We are responsible for every part. All wood used is solid high grade oak, including draw bars. Why take ordinary soft wood found in other makes? We cut 20 feet wide. Later on you will want a light weeder harrow to use on your fields. We make them to fit all our draw bars, which will mean a further saving to you. Our line of harrow and packer plow attachments is the best made.

Write for our "freight-paid" proposition at once

The Christiansen Harrow Works

331 Austin Street WINNIPEG

having a large supply of milk, the creamery could have the best machinery and a well trained man, thus turning out a product that would command a top place on the market. Breeders of pure bred cattle in such a community would attract buyers for their cattle much better than they could if scattered through a beef-raising country. Much could be saved in buying bulls by the interchange of good bulls among neighbors instead of a man hav-

ing to go to a distance every time he wanted a bull and then having to sacrifice a good bull when through with him.

The same advantage can be shown with any other breed that is suitable to the country. Whenever a group of farmers in one place concentrate their efforts on one particular breed, it invariably follows that they can show greater success than is possible where the same effort is spread over a number of breeds.

Co-operation in Shipping and Selling

It is generally believed that there is too great a spread between the prices received for live stock by farmers and the price paid for meat by the city house-keeper. What is needed is combined effort to reduce cost and eliminate excessive profits. Wonderful results have been secured along this very line in regard to marketing grain crops by the organization of the farmers' co-operative grain companies such as the Grain Growers' Grain Co. By such co-operation, the middle-man's profits are saved to the farmer. What is now needed is the organization of local live stock shipping associations. These associations gather the live stock that is for sale in a district and ship it to market. Instead of two or three drovers scouring the district for stock, the farmers bring it in themselves, and the drovers' profit, time and livery hire are saved. The co-operative association marks each man's stock separately, and they are sold separately each lot on its merits, and the farmer gets exactly what it brings less actual unavoidable expense. Under such a system, quality is recognized and paid for, whereas, under the ordinary system of buying, too often good and poor go at the same rate. Several such co-operative shipping associations have already been established in Saskatchewan. In some of the Western states they ship thousands of carloads of cattle through this manner. We look for a rapid development of the co-operative shipping of live-stock throughout Western Canada and a good stimulus to live stock production resulting therefrom.

Co-operative Abattoirs

A further development in co-operative handling of live stock should be the building of co-operative abattoirs owned and operated by the organized farmers. The increase in live stock production that is bound to come will mean that the local market will not handle the supply. Outside markets must be developed and storage must be provided to carry meat products from times of over-production to times of shortage. At present these facilities are all in the hands or great packing companies who are not in the business for the good of the farmer.

Farmers' abattoirs and storage plants established on an extensive scale could get in direct contact with the city retailer; could reach out for distant markets when home markets were overloaded, could carry over the farmers' surplus so that an excess supply would not be thrown on the market at once and prices broken. However, these big schemes should come last, after the small local shipping associations and

local building associations had got the farmers together and in the proper mind for larger attempts for co-operation.

A Boy With Brains and a Manitoba Boy, Too

Recently we gave some astounding figures showing the cumulative effort of a number of boys and girls across the line in raising corn, pork and baby beef. Here is a single incident from next door almost that suffers in no respect from comparison with the best we have heard yet in what a real live boy is capable of doing if one will only give him a fighting chance.



LORNE SKAYMAN

This is a very young engineer, but in spite of his modest 15 years he did something with a gas tractor or last season that seems to have baffled the best efforts of a few hundred "bums" we have heard of, men of twice his age, with but a fraction of the gumption or mother-wit of the boy, Lorne Skayman of Hamiota.

The circumstances are briefly these: In the fall of 1915 his father, Joseph Skayman, bought a 20 H.P. gasoline tractor and a 24-40 separator. He nor any of his people on the farm had any previous experience with a threshing outfit of any kind, and as the father professed to have no mechanical ability he believed he was up against a tough proposition.

Lorne, however, thought he could handle it; at least he would try, so he got on the daylight side of everything about the machinery and before the folks knew that he had so much as filled the gaso-

'Tis Seeding Time

The Selection and purchase of GOOD SEED is the most important item in the whole of your farming operations. NOW is the time to order

McKENZIE'S QUALITY SEEDS

Full of Life—True to Name—Moderate in Price

Table listing various seed types (WHEAT, OATS, RYE, BARLEY, FIELD PEAS, GRASSES) and their prices in Brandon and Calgary.

McKenzie's Garden Collection will keep a family of six in fresh, green vegetables all summer. A Dollar Bill brings this. Cultural directions with every order.

THE Twentieth Annual issue of the McKenzie Seed Book, aptly designated the "Red Guide Book for the West," is better than ever before. Send for your copy to-day.

A. E. MCKENZIE CO., Ltd. BRANDON, MANITOBA, CALGARY, ALTA. THE BEST OF EVERYTHING FOR FARM AND GARDEN

Cast Iron Breakages Welded

We can save you many dollars—not to speak of loss of time and endless vexation—if you will send us all your metal breakages. We can do any repair job that can be welded by the Oxy Acetylene process in Cast Iron, Steel, Bronze, Malleable Iron, Cast Steel, Copper, Aluminum.

WE OWN AND OPERATE THE Oldest and Largest Oxy-Acetylene Welding Plant in the West

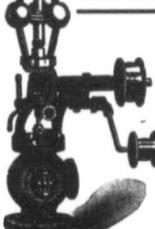
Do not hesitate to send us your Broken Cylinders, Cylinder Heads, Connecting Rods, Crank Shafts, Engine Beds, Bull Pistons, etc. We will return them as good as new, and stronger, where mended, at a great saving.

We do not attempt to repair certain castings on which a saving cannot be effected. Send your inquiry now. Do not wait until Spring before you have your work done. We will be pleased to give you figures on any work before sending to us.

ENTRUST US WITH YOUR WORK, SATISFACTION POSITIVELY GUARANTEED. ALL INQUIRIES PROMPTLY AND CHEERFULLY ANSWERED BY MAIL.

Manitoba Welding & Mfg. Co. 58 Princess St. WINNIPEG (Estab. In 1911)

Steam or Gas Tractors



Equipped with PICKERING THE GOVERNOR WITHOUT JOINTS give greatest efficiency

FITTED TO EVERY BUILD OF ENGINE

Patent Ball Ranger Speed Changer Supplied on all Genuine Pickering Governors. Will increase speed 50% or more.

The Pickering Governor Co. PORTLAND CONN., U.S.A. TRADE MARK (REGISTERED)

line tank he had began to thresh. His luck was with him because he had common sense on his side and he ran both engine and separator unassisted right through the season and did not have a stop of any consequence. His father, very wisely, did not butt in, but contented himself with hauling grain to the elevator because they were short of help on the farm.

So far as we know, we believe Lorne is the youngest competent engineer in the West, and we are, therefore, proud to reproduce his portrait herewith.

It is only fair to add that the outfit handled by this young lad was a 20 H.P. "Mogul" tractor and a 24-40 "New Racine" separator. He threshed 7,000 bushels for his father, and did it on record time.

This is a refreshing story, every detail of which we can vouch for. For these particulars we are indebted to one of our very best engineer experts who has no interest whatever in unduly "boosting" any effort of the kind. "Well done, Lorne," we say; we trust and believe we will hear still greater things of you in the future and that your achievement in this particular case will be an example that many of our young hopefuls will strive to emulate as opportunity offers.

**The Boys in the Grain Judging Competition**

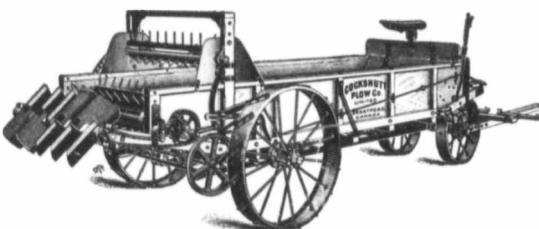
During the Farmers' Week at the Agricultural College there were three interesting competitions in grain judging put on by the Field Husbandry Department.

The aim of the competitions is to stimulate interest in seed selection by the boys and young men throughout the province. The response to the invitation to compete shows that the inauguration of the competition was amply justified.

**Provincial High School Competition**

This competition was between teams of three students representing high schools in the province. In addition to cash prizes, the Canadian Bank of Commerce donated a magnificent shield for annual competition. The team representing Roblin Consolidated School are this year the possessors of the shield. This team was instructed by their agricultural teacher, Mr. J. R. Sirett, who deserves credit for the way the boys were trained. Mr. Wilfred Rae of this team was also individual champion. The standing of the teams are as follows:

- 1st, Roblin—W. Rae, B. Porteous, C. Ward; score 778.
- 2nd, Holland—J. Stevenson, L. Bullied, V. Biglow; score 669.



**Light in Draft—** **Low Down—**

**Easy on Horses** **Easy to Load**

## Cockshutt Manure Spreader

A Cockshutt Spreader distributes the load the way that saves all its fertilizing value—breaks it up into fine particles readily available as plant food, and scatters it evenly over a wider surface than most other machines. Covers all the space behind the wheels, so it is never necessary to run the wheels over ground that has been spread.

It spreads it in many different quantities per acre—by a mere shift of a lever. Use it for light top dressing or for heavy fertilizing.

Realize the hard work you save yourself by buying a Cockshutt. The body is low down—only 41 inches to the top of the box. It's child's play to load it from the pile, because you have no back-breaking lifting up to a high box.

This machine has plenty of clearance underneath. Wheels turn sharp and conveyor chains travel along angle supports beneath the frame so there is no danger of sticking the machine when going over rough ground.

Ask our nearest Agent for further information and illustrated folder describing this machine

## Cockshutt Plow Company Limited

WINNIPEG      REGINA      CALGARY      SASKATOON

3rd, Stonewall—R. McAdam, M. Willis, C. Krunnusey; score, 652.

**Provincial Short Course School Competition**

This competition was between teams of five young men that had been trained by the district representatives at Short Course school recently held in their respective districts. The prizes were very pretty medals donated by the Honourable Mr. Winkler, Minister of Agriculture. Mr. W. T. G. Weiner from Morden entered the prize winning team. The competition was very keen, and the teams entered by Mr. N. S. Smith of Boissevain and Mr. J. H. Evans of Virden did excellent work.

1st, Morden—H. Sweet, W. S. Gibson, H. Loree, W. H. White, J. S. Duncan; score 1056.

2nd Boissevain—W. S. Hall, R. Henderson, J. Harrison, R. Campbell, E. Latimer; score 971.

3rd, Virden—J. M. Connor, C. Watson, F. M. Madill, H. J. Neville, M. J. W. Madge; score 890.

**Open Competition**

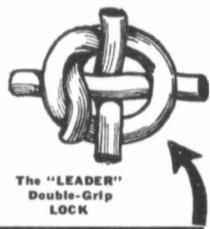
This competition was open to any young man between the age of 16 and 25 who has never enrolled in the regular courses at an agricultural college. In this competition the men in the two former competitions tried conclusions with a number of other young farmers. The results show the advantage of training along this line for the prizes went either

## It's the LOCK

THAT GIVES THE  
LONG LIFE AND  
LASTING SERVICE  
TO THE

# LEADER

WOVEN WIRE  
FARM FENCES



The "LEADER" Double-Grip LOCK

A double-gripping, absolutely non-slipping tie that binds the cross and lateral wires, giving solid strength with wonderful flexibility. Leader Fences do not sag or bow and will stand the heaviest side strain. They are built in many different styles in heavy and medium weight. All wire guaranteed standard Imperial gauge with the best of galvanizing and workmanship. Before you buy another rod of fence **SEE OUR AGENTS OR WRITE TO US FOR CATALOGUE** We are the oldest and biggest Wire Fence Co. manufacturing in the West, and are equipped with the latest and most up-to-date wire fence machinery. All our stock is shipped fresh from the looms, bright and clean, untarnished and unaffected from long storage. We also manufacture an extensive line of ornamental lawn fencing and gates, steel frame drive and walk gates, etc.

FULL PARTICULARS IN CATALOGUE

### The Manitoba Anchor Wire Fence Co. Limited

Corner Beacon Street and Henry Avenue      WINNIPEG, MAN.

You saw this advertisement in this magazine. Don't forget to say so when writing.

to members of the High School teams or Short Course teams.

Placing	Score	Name	Address
<b>WHEAT</b>			
1st	96	Wilfred Rae	Roblin
2nd	95	H. J. Neville	Moosomin
<b>OATS</b>			
1st	96	L. Bullied	Holland
2nd	95	Wilfred Rae	Roblin
<b>BARLEY</b>			
1st	96	Wilfred Rae	Roblin
2nd	95	H. J. Neville	Moosomin

**Left Out**

Honest Agriculturist — "We don't need you women to help us run things. Didn't we men pass the compensation law, protecting everybody except farm-hands and domestic servants?"

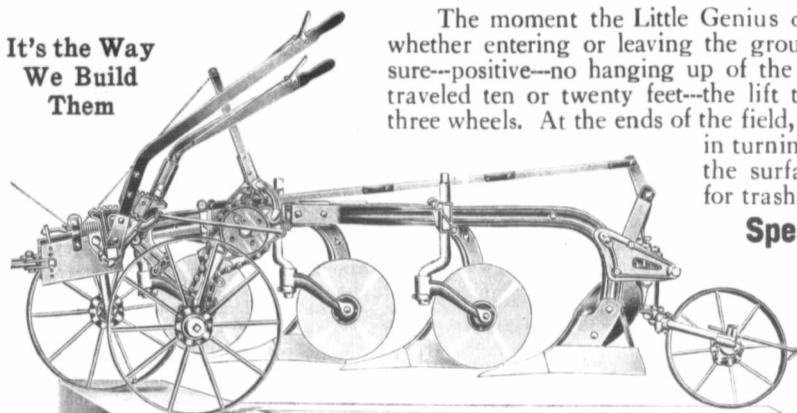
"His Wife—"Yes, and I'n both."

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# Little Genius—Power Lift on All Three Wheels

It's the Way We Build Them



973 P&O No. 2 Little Genius HIGH LEVEL LIFT WITH GREAT CLEARANCE

Built By PARLIN & ORENDORFF CO., Canton, Ill., U.S.A.

International Harvester Company of Canada, Limited, SALES AGENTS FOR CANADA

WINNIPEG ESTEVAN BRANDON CALGARY REGINA SASKATOON EDMONTON YORKTON LETHBRIDGE NORTH BATTLEFORD

The moment the Little Genius operator pulls the trip rope, whether entering or leaving the ground, he gets action--instant--sure--positive--no hanging up of the rear end until the plow has traveled ten or twenty feet--the lift takes immediate effect on all three wheels. At the ends of the field, when the bottoms are raised in turning, they are raised high above the surface, giving ample clearance for trash.

### Speaking of Clearance

We would like you to compare the clearance between the bottoms of the Little Genius with that of any other plow—you will at once discover the secret of the remarkable success of the P&O Little Genius in trashy ground. The Little Genius has 19 inches of bottom clearance.

**B**EARING scraping has become a trade; many men in an engine factory do nothing else. There is always a demand for good bearing scrapers. It is possible, however, for an inexperienced man to do a fair job if he uses care and patience.

The usual form of scraper is shown in Figure 1. These scrapers may be purchased, but are usually ground or forged out of an old ten-inch half round, smooth file. The teeth should be ground off the file before forging. During the forging and tempering it is necessary that the scraper never be heated hotter than a cherry red. If heated to a yellow heat, the edges of the scraper will crumble, and scratches in the bearing will result. The smoothness of the bearing depends a great deal upon the condition of the scraper. The scraper must be kept sharp and keen, with enough, but not too much, cutting clearance. The scraper may be ground occasionally on the emery wheel, but it should always be whetted afterward on a fine oilstone. Scratches and chatter marks must be avoided. The former are the result of a scraper that has been overheated in forging, or that has not been sharpened smoothly. The latter are the result of too much cutting clearance on the scraper. The



## Scraping and Fitting Engine Bearings

By OTTO L. LEWIS



scratches are easy to prevent, but the chatter is more difficult to

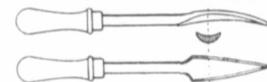


Fig. 1—Proper form for Scraper

control. It may be largely overcome by scraping first in one direction and then in another. The scraper should be kept sharp; a dull scraper results in a serious loss of time.

Many mechanics are not careful enough about clamping a rod or shaft while scraping. The piston end of the rod should clear the side of the vise as shown in Figure 2. If swung over against the vise as shown by the dotted half circles, Figure 2, the rod may be clamped under a strain as shown in Figure 3.

This is almost sure to bend the rod, throwing the piston out of line with the cylinder. It is queer that a mechanic does not notice such things, but he does not always do so.

Care must be taken not to

spring the crank shaft. Most crank shafts are strong and springy enough to stand some strain, but they should not be imposed upon. If an extra vise is available, the shaft may be held in a vise, if not, the shaft may be clamped to the bench, as shown in Figure 4. The hard wood blocks that support the shaft must be thick enough to raise the fly wheel flange of the shaft above

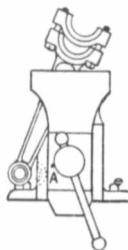


Fig. 2—The right way to clamp a connecting rod in vise.

the top of the work bench; the blocks must be placed directly under the clamp.

Before scraping a rod to a shaft,

the rod should be marked with steel stencils so that (1) the position of the cap on the rod is shown; (2) the location of the rod on the shaft is fixed; (3) the end or end position of the rod is determined. In a factory where many rods and shafts are on the floor it is also necessary to mark

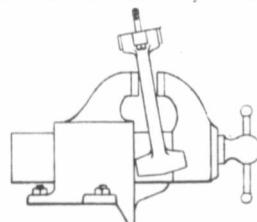


Fig. 3—Showing the wrong way to clamp a connecting rod in a vise.

the shaft number on the rod. When a repair man removes the rods from a motor he should notice the factory system of marking, so that he can replace the rods in the same position. This is quite important. Figure 5 shows a common system of marking a rod. The 3 on the rod and the 3 on the cap should be on the same side. The 3 also shows that the rod is for number 3 crank pin. The 123 shows that the rod is for shaft number 123, which number is usually found on the fly wheel flange of the shaft. When the shaft number is placed as shown the rod should have an oil pipe

or some other distinguishing feature on one side. This distinguishing mark should face the fly wheel. If there is no such mark the shaft number should be stamped on the fly wheel side of the rod. The scraper should always observe these marks, so that the rod may be assembled on the shaft in the same position in which it was scraped.

The bearing having been prepared for scraping, a thin coat of lamp black, Prussian blue or red lead mixed with a little machine oil is rubbed on the journal of the shaft. The bearing is then tightened on the shaft until it can be turned with some force. The nuts should be tightened

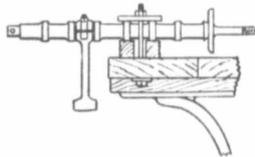


Fig. 4—Showing how a Crank Shaft may be clamped to the bench.

gradually and evenly so that the cap will draw in its place without distortion. After tightening the bearing it is well to tap it with a soft hammer to remove any strains. Some factories allow their scrapers to hammer the bearing quite severely in order to round the babbitt to fit the shaft. This is a time saving method, but is not considered the best practice.

The bearing having been tightened on the shaft, it is rotated a few times, removed from the shaft, and the high points scraped. The beginner usually uses too much lamp black on the shaft. Only enough should be used to spot the high places.

The scraping should be continued until a good bearing is obtained and the bearing has the proper tension on the shaft with all the nuts firmly screwed on. What this tension is depends upon the bearing metal and the liners. As a rule, the fit should

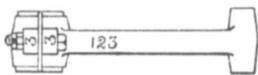
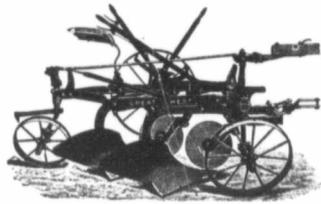


Fig. 5—Method of marking a connecting rod and bearing cap.

be "stiff" if the liners are brass, and "free" if the liners are die cast. A bronze bearing must fit more loosely than a babbitt bearing.

End play must be provided for, or guarded against. As a rule the end play of an automobile crank shaft is taken up at the rear bearing. In this case, each of the other main bearings should have one sixty-fourth to one-sixteenth of an inch end play to allow for the expansion of the shaft. As a rule, the rods should fit the shaft without end play, the end play being allowed at the piston end of the rod. Many rods have

# Massey-Harris High-Grade Farm Implements

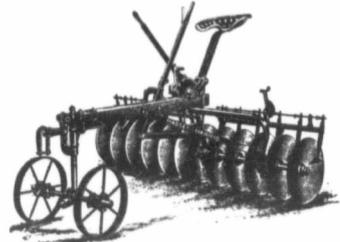


## Great West Plows



☛ Built especially to meet conditions in Western Canada and they have made good. Wheels are set well out, making the Plow run steady. It is amply strong for all conditions of soil. Convenient Levers and easy-acting Foot Lift make it easy to handle. Bottoms are of the well-known high standard of Massey-Harris construction.

☛ Not only do they do the most satisfactory work possible, but this is accomplished with a minimum of effort on the part of team and driver; lightness of draft and the convenience and comfort of the driver have received special attention, as also the points of strength and durability.



## Massey-Harris Disc Harrows



☛ Being equipped with Pressure Springs, the Gangs are held to their work on rough and uneven ground, on ridges and in furrows, so that the entire surface is cultivated.

☛ Should one Gang strike an obstruction, it may rise and pass over it without disturbing the other Gang, or without danger of injury to the machine.

☛ Angle of Gangs is readily controlled by a single, easily operated Lever.

☛ Bearings have oil-soaked Maple Bushings and Spring Oil Caps.

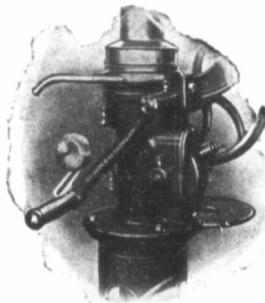
☛ The Low Hitch takes all the weight from the horses' necks.

## Massey-Harris

☛ The Massey-Harris Separator is easy to fill, easy to turn and easy to clean—simple, safe and durable.

☛ The new Speed Indicator enables the operator to turn the Crank at just the right speed to get the best results.

☛ All parts of the Bowl are heavily Nickel-Plated over Copper.



## Cream Separator

☛ Skims close with hot or cold milk because of the Improved Bowl.

☛ The Self-Balancing Bowl is a feature which adds much to the efficiency, easy-running and durability of the machine—it runs without vibration and with the least possible friction on the Bearings.

## Massey-Harris Co., Ltd.



Head Offices  
TORONTO, CANADA

—Canadian Branches at—  
Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Yorkton, Calgary, Edmonton.  
E. G. Prior & Co., Ltd., Victoria, Vancouver and Kamloops.

—Agencies Everywhere—

little or no shoulder to prevent end play. In such cases it is necessary to scrape in the fillets very carefully.

### To Prevent Auto Freezing

It very often happens that the automobile owner is responsible for freezing his engine by thinking "it won't get cold enough tonight," and keeps it up night after night until finally a night comes when it does get cold

enough, and the result is his cylinders are burst. Freezing water is not particular just where it breaks a cylinder, and frequently it is cracked in a place very hard to weld, and is thereafter one continual source of trouble.

A good habit to form is one that, when you don't know, don't guess, but drain.

It is better to spend time putting in water than paying to have cylinder and radiator troubles repaired.

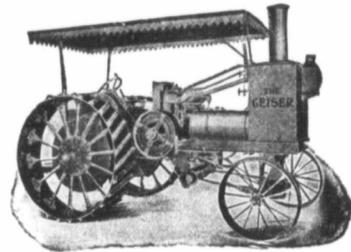
A good anti-freezing solution is

one part alcohol, one part glycerine and four parts water. This solution will not freeze at twenty degrees below zero but it will leak out and evaporate. If you will take a sample every time you put in extra water, dilute it a little more than that which is in your engine, and set it in a cold place, you can tell when to put in more alcohol. Glycerine will not evaporate, so does not need replenishing so often.—R. A. Bradley, Colorado Agricultural College.

# BARGAINS

In Small Engines, Threshing Machines (both new and second hand). This is positively the finest opportunity ever offered in these perfect goods at

## LESS THAN MANUFACTURER'S COST



**OHIO ENGINES**

15 H.P. Standard (new)	\$328.75
12 H.P. Standard (new)	306.50
11 H.P. Special Hopper cooled (new)	189.00
7 H.P. Special Hopper cooled (new)	115.80
12 H.P. Standard (rebuilt)	200.00
8 H.P. Standard (rebuilt)	175.00

**INGECO KEROSENE ENGINES**

25 H.P. Standard portable (new)	\$893.60
12 H.P. Standard stationary (new)	414.15
10 H.P. Farm Engine, hopper cooled (new)	256.35
8 H.P. Farm Engine, hopper cooled (new)	197.90
6 H.P. Farm Engine, hopper cooled (new)	148.70
2 1/2 H.P. Farm Engine, hopper cooled (new)	55.00

**BADGER ENGINE**

14 H.P. Standard stationary (rebuilt)	\$200.00
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**GEISER ENGINES AND SEPARATORS**

AA Sep., 40x60, complete (rebuilt)	\$1,000.00
A Sep. 36x56, complete (new)	1,064.29
C Sep. 30x46 no blower (new)	597.25
5 Sep. 27x39, complete (new)	693.55
4 Sep. 24x32 Straw Car (new)	351.12

**GADE ENGINE**

6 H.P. air cooled (rebuilt)	\$125.00
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**TRACTORS, STEAM**

35 H.P., double cylinder (rebuilt)	\$2,500
25 H.P., Northwest (rebuilt)	1,200

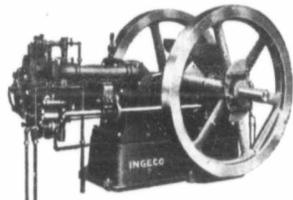
**GASOLINE TRACTORS**

45 H.P. 4 cylinder Tractor (rebuilt)	\$1,900
45 H.P. 4 cylinder Tractor (new)	2,250

**PORTABLE ENGINES**

25 H.P. Standard portable, Ingeco (new)	\$893.60
22 H.P. single cylinder, portable, Geiser (new)	800.00
22 H.P. single cylinder, portable, Geiser (rebuilt)	600.00
20 H.P. single cylinder, portable, Geiser rebuilt	500.00

Also have a couple of 20 to 22 H.P. portables which will rebuild and sell at about \$350.00 each.



Supply is limited and there will be no "repeating" when these specific machines are sold.

CASH ONLY—Except in case of tractors and portables for which reasonable secured terms will be considered at increased prices.

## R. S. EWING ASSIGNEE 200 Union Trust Bldg. WINNIPEG

ONE of the most unique features of a gasoline engine is its safety from explosion. Many people in the beginning feared them because they feared gasoline. As a matter of fact, no one ever heard of a gasoline engine "blowing up" unless the cylinder had first been cracked by a blow from the outside or in some other way. The cardinal principles upon which they are made render explosion impossible. Let us see why.

If we put a drop of nitroglycerine in the cylinder of a gasoline engine and explode it, there would be sufficient impulse as a result to possibly start a small engine. If we increased the amount to two drops we would double the force of the explosion. This would continue with each addition of glycerine until the point was finally reached where the cylinder would be shattered or where the entire engine would be smashed into fragments.

If we put a drop of gasoline into the same cylinder and attempted to ignite the charge, we would get no result; the mixture would be too weak to explode. If we doubled the dose the outcome would still be negative. By adding drop after drop we would finally reach a point where a weak explosion would take place. This could increase in intensity up to

### The Gasoline Engine the "Safety First" Power

By XENO W. PUTNAM

at the point where exactly the right amount of gasoline would be introduced to create the most explosive mixture possible to create with one cylinder full of air. After that, as we added more gasoline, drop by drop, we would decrease the force of explosion because the mixture would be too rich, until presently a point would be reached when there would be no explosion.

Here is the point upon which the safety of the gasoline engine depends; there is a certain mixture of gasoline vapor and air which produces the maximum explosion possible to obtain from gasoline, and that is the point for which the cylinder of the engine is constructed. No heavier explosion than the maximum force can be obtained by any combination of blunders, carelessness or accidents, and the cylinder is made to stand the full force of such an explosion as its minimum (as well as maximum) load. The worst that gasoline can do is

within the normal capacity of the engine.

There is no danger of getting an overcharge of explosive gas in quantity into the cylinder because a complete cylinder full of the gas at its most explosive stage is the normal load of the cylinder. When a gasoline engine is running very rapidly it might be possible, of course, for slightly more than one cylinder full of gas to get jammed into the cylinder at once, since gas is compressible; even at that, there is far more margin between the normal and the safety limit of the cylinder than between the two loads of gas at the utmost variation imaginable.

It is hard for many people to realize how safe the gasoline engine itself is from explosion, because so few realize that the introduction of too much gasoline weakens the explosion. Too much steam in a boiler—that is, too high a pressure—causes trouble. We cannot cause trouble in that way with a gasoline engine

because we cannot get excessive pressure. It is intended to create with each stroke every particle of pressure it is possible to develop out of any variation of the fuel. We think that, because more nitroglycerine would be dangerous, more gasoline ought to, but such is not the case. If we varied the proportions of the substances out of which nitroglycerine is created we might weaken the force of that explosion.

Gasoline is dangerous out of its place, in the open air, because it there has room to mix with enough air to raise it to its maximum firing proportions. When it is once drawn into the engine cylinder it is as safe from harmful possibilities as a criminal in the Tombs. Accidents often occur with gasoline but never around engines unless there is a leak in some pipe or the gasoline in some way escapes into the open air. A basin of gasoline used for cleaning purposes may be dangerous—usually is. The same gasoline, capable of several horse power hours of work, could not by any combination of accidents be made to explode harmfully in an engine cylinder. So long as it remained a part of the engine's fuel system it would be absolutely safe.

# Burning Kerosene

By R. J. DOLPH

THE subject of using kerosene as a fuel for the farm gas engine is becoming more interesting each year on account of the high price of gasoline. The time is probably not far off when the lower grades of fuel will take the place of gasoline entirely and already several companies are offering the farmer engines which will burn any low grade fuel which will flow through a feed pipe. A great many farmers have tried to use kerosene in their regular gasoline engines with varying success.

In the following I will endeavor to show how I remodeled a 32-horse power gasoline engine to successfully handle kerosene.

Referring to the accompanying drawing, which is an end view sketch of the cylinder, showing only the necessary parts for explanation, A is the regular constant level fuel chamber or mixer from which the fuel is led to the spray nozzle in the intake manifold and adjusted by the needle valve B. As originally equipped, the gasoline was pumped in through the pipe C, and overflow through the pipe D, thus returning to the tank. The rest of the piping shown was my arrangement for the use of kerosene. E is a one quart tank mounted at one side of the cylinder and connected to the fuel chamber or mixer A, through the bottom of same. F is the exhaust pipe, which has a series of holes drilled along each side between the exhaust cage and the elbow as shown. Around this part of the pipe is wound a coil of one-fourth inch pipe connected up as shown and over this is a covering of asbestos to retain the heat which blows through the holes in the exhaust pipe and heats the fuel as it passes around the coil.

The two drain cocks H, and I, empty into the cup J, which returns the fuel to the tank through the overflow pipe D. To start the engine the operations are as follows:

Assuming, of course, that the supply tank is full of kerosene, the drain cock H is opened to drain out any kerosene which is left in the mixer, after which it is closed and the tank E filled with gasoline. The cock I is then opened and cock K is closed. The engine is then started in the usual way and the oil pumped by the fuel pump will come out through the drain cock I, and return to the supply tank instead of going to the mixer, the engine running on the gasoline supplied by the tank E. As soon as the gasoline gets

too low in tank E, the engine will begin missing and the cock I should then be closed, the kerosene being hot enough by this time so that it will vaporize and form an explosive mixture in the cylinder.

The cock K is used for regulating the fuel temperature and is left open only when running regularly on gasoline as when it is open the fuel does not pass around the heating oil.

This engine has a water valve not shown, which feeds a spray of water into the cylinder which is very necessary in burning kerosene and greatly improves the running, even when gasoline is used.

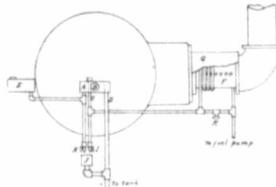


DIAGRAM SHOWING HOW KEROSENE HEATER WAS MADE.

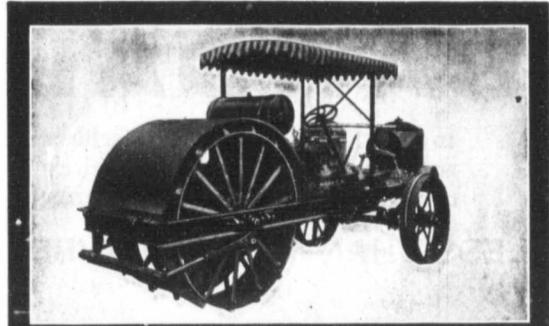
I do not know just why the water when mixed with the fuel causes the engine to operate better, for there are a great many theories regarding this, but I am well acquainted with the results. It causes the mixture to burn slower, thereby giving a better cushion to the piston and an action nearer to that of a steam engine. I think it also helps to keep an even temperature and prevent preignition and I know from my experience that it reduces carbon deposits.

Different results are obtained from different engine designs, so I will give below a few points which I have gathered by experience with engines of the ordinary type.

The engine should be run as hot as possible without danger of going beyond the limits of the cylinder oil and cooling system, in order to more readily vaporize the fuel.

The best possible grade of oil should be used and a little more, as the unburned portions of the fuel tend to destroy the lubricating properties of the oil on the piston.

The throttling type of governor gives best results if the engine is not loaded steadily, as it retains a more even cylinder temperature but if heavily loaded there is not much difference. If the load is light most of the time the hit and miss governor will give best results if the jacket water can be kept hot on account of the higher compression and higher air velo-



## The Kinnard FOUR PLOW Tractor

### The Old Reliable Flour City Line

The development of the Flour City line was guided by the demand for a tractor of the highest efficiency. Its success is due to a combination of practical features, embodied in a strong and simple design.

When you consider that it is the oldest tractor in the field, that its steady progress has kept it in advance of all others, you will realize that our efforts have been devoted to perfecting instead of promoting.

It is built in four sizes, the "KINNARD" representing the smallest type, will pull four plows, and embodies the very latest in tractor designing and construction.

Our 1916 Catalogue will be sent on request.

**KINNARD-HAINES CO., 828 44th Ave. North  
MINNEAPOLIS, MINN.**

You saw this advertisement in this magazine. Don't forget to say so when writing.

**C**LEAN, reliable, uniform, powerful fuel---that is what you get when you come to our tank stations and buy SILVER STAR or ROYALITE KEROSENE. They are the safest, cheapest fuels for the owner of an oil-burning tractor.

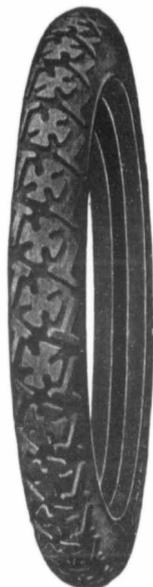
**THE IMPERIAL OIL COMPANY Limited**

BRANCHES THROUGHOUT CANADA

You saw this advertisement in this magazine. Don't forget to say so when writing. W

cities which the pa The should as po head, there any ur which does n A h compr better The gener added near t with s If th when the us be mi satisf Tra O: "Tr occurs sign no to be t person no one and re It may ienced Gross, tural C

"Maltese Cross"



"Non-Skid"

# SMILES OF SATISFACTION

are never absent from the face of the car owner who has had the good sense to have his automobile equipped with the

## "Maltese Cross" Tires

Their quality, comfort, and "Sense of Security" cannot be expressed in descriptive language. It cannot be appreciated till it has been EXPERIENCED.

LOOK FOR THE  
Trade Mark  
ON THE ROAD



"The  
TREAD Mark  
of Quality"

The latest addition to the "Maltese Cross" family is the "PARAGON" a pattern tread at a moderate price.

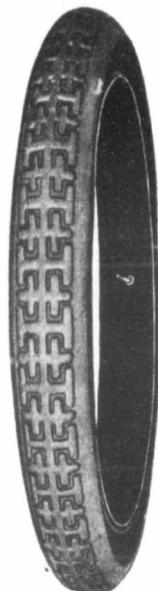
Manufactured Solely by

## Gutta Percha and Rubber Limited

Not in any Trust or Combine

Factories: Toronto. Western Branches: Fort William, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver

"Maltese Cross"



"Paragon"

cities in the intake passages, which are better able to break up the particles of fuel.

The combustion chamber should be as nearly hemispherical as possible with valves in the head, especially the intake, so there will be no pockets to retain any unburned portions of the fuel which causes dirty engines and does not mean economy.

A high engine speed and high compression seem to tend toward better operation.

The same mixing valve can generally be used if water is added and it should be placed as near the intake valve as possible with smooth and direct passages.

If these points are remembered when remodelling an engine for the use of kerosene there will not be much difficulty in securing satisfactory results.

### Tractor Works Best Where One Person is "Engineer"

"Trouble with the tractor often occurs when the operator can assign no cause. This is most likely to be the case when two or three persons handle the machine and no one is definitely "the engineer" and responsible for the machine. It may also happen to an inexperienced "engineer," states E. R. Gross, of the Colorado Agricultural College, at Fort Collins.

"The timing of the spark and adjustment of valves are just sufficiently delicate to cause much trouble if they are allowed to shift slightly on account of a loose bolt or are slightly changed by one operator without the knowledge of the others.

"It is necessary to have one person who is the engineer and have him as well informed as possible on his machine. Every day he should learn something more about it and its operation, until he can truly say at all times just how every part is and thus locate trouble as soon as it occurs. Real trouble, time-wasting trouble, will come to such an engineer only through unavoidable accidents and these will be rare.

"The expert sent out from the factory cannot operate the tractor as well as the engineer who operates it daily, yet he may be able to find trouble the operator could not locate. It is the expert's business to locate trouble, the operator's to avoid it. Too many are satisfied if a machine runs. That is not enough. Does it run right? Are all bearings perfectly lubricated and properly adjusted? Is there pounding, even to the very slightest degree? Is the valve and spark adjustment such as to give the highest power? No one can answer these questions so well as the operator, if only the operator knows. You can't get an operator

who knows these things for your tractor, but you should get one who will know, when he has been on the job a short time."

Farmers' Friend Boss Harrows Cannot be Purchased for \$12.00

In the February advertisement of the Christiansen Harrow Co., it was stated that the price was \$12.00. This was a typographical error, as the price should have read \$20.00. We make this statement in order to be fair to the Christiansen Harrow Co., as it is

an impossibility for any concern putting out a harrow of Christiansen quality to market it at anything like \$12.00. We trust our readers will accept this explanation of the error.



The sailor had been showing the lady visitor over the ship. In thanking him, she said:

"I see that by the rules of your ship tips are forbidden."

"Lor' bless yer 'eart, ma'am, replied Jack, "so were the apples in the Garden of Eden."

### Farmers Holding Wheat and Oats Should Read the Following Very Important Information from McBean Bros.

While the price of wheat and oats may appear high you must remember the conditions governing these prices, and, as we have already stated the great loss sustained by excessive rains in the winter wheat states and this combined with the devastation going on in the countries at war forces us to repeat that if this war continues for another year, it will not be a question of the price of wheat but where will the wheat come from to supply the demand. What we are engaged by the large Chicago operators, but if the attempt is made and they should succeed in breaking prices several cents per bushel lower, all you have to do is to sit tight on your cash wheat and oats and not sell a bushel as it will only be a matter of a short time when the market will recover and go higher than ever. Europe must have your wheat and oats as the United States surplus is cut down millions of bushels and it is of very poor quality. In another month cars will be plentiful, and we would strongly urge farmers to ship their own grain and don't sell a bushel on track. Wait until grain is unloaded before selling. If you have not the time to ship before seeding, we figure it will be just as profitable after, as prices will be high all summer. Just have patience and wait for your cars as you will make big money by shipping your own grain.

We advance well up against shipping bills, and in making liberal advances this year have enabled a large number of our farmer friends to hold their wheat, thereby helping them to clear as high as \$300 a car extra.

If you cannot wait for shipping instructions ship to Fort Arthur or Fort William as your rail-own grain requires. Advise McBean Bros., Winnipeg, Man., so that we can check up the grades, etc. If you need money, draw on us through any bank, with shipping bill attached to draft.

Remember, that we only want a share of your grain.

## MCBEAN BROS.

Feb. 7, 1916.

GRAIN EXCHANGE, WINNIPEG, MAN.



## McGregor of Ford

RECENTLY ONE OF OUR FRIENDS FROM ACROSS the line was standing on the sidewalk in one of our larger Canadian cities viewing a march past of some of our soldier boys. The Kilties were going by.

"How typically Canadian are the kilties," he remarked. "We, on our side of the big pond associate the Highland uniform as much with Canada as with Scotland. Why is it?"

The reply was to the effect that it was because the Scotch had contributed so largely to the settlement and upbuilding of the Dominion and so many Canadians of Scottish ancestry had made themselves worthy of high ranks in the history of Canada.

Among these Canadians of Scotch parentage who have won a place among Canada's great builders of industry we must reckon Gordon M. McGregor of Ford, Ont.

About the year 1850 Mr. McGregor's grandparents set out from Glasgow, Scotland to settle in what was then a new and far away country—Canada.

A few years later we find them located at Sarnia, Ontario, where a son, William, was born.

When still a young man William McGregor took a very active interest in the business and political life of the country and was elected a member of the Dominion Parliament, serving his country and his district well and faithfully for twenty years.

Gordon McGregor about whom this is written was the son of William McGregor and was born at Windsor, Ont. As Gordon McGregor grew to manhood he capably assumed much of the business cares of his father.

William McGregor eventually became interested in the Walkerville Wagon Co., at Walkerville, Ontario, and, shortly after, his son Gordon McGregor, was made manager of the firm. Here the son began to show that business foresight that has made him one of the prominent figures in the business world of Canada.

About this time an event took place in the carriage and wagon industry that caused the greatest concern. This was the advent and the establishment of the automobile as a practical vehicle.

Some dealers and builders were so alarmed that they thought their business would go to immediate rack and ruin and that the auto would supersede horse-drawn vehicles entirely. Others were cool-headed enough to see the advantages that this new industry afforded and governed themselves accordingly.

Among the latter was Gordon McGregor, who believed that he could successfully enter upon the business of manufacturing automobiles and looked about him for wise methods of doing this.

He got in touch with many manufacturers and looked over many makes of cars. Finally, he decided on one make and effected arrangements for its production in this country. The car he chose was the Ford.

He then tried to induce some of his friends in Canada to invest in the project and encountered all the usual cold, disheartening difficulties attendant upon the organization of a new and untried proposition. If they could have but looked ten or eleven years ahead he would have had no worries over the organization of a company even double or quadruple the size.

No stock was offered for sale outside of the Dominion until all Canadians had been given an opportunity to subscribe.

Finally, in August, 1904, they organized the company with a capital of \$125,000.

Then came the difficulties of manufacture and for three years it was a constant struggle to win success.

But success came and a greater success than the founders ever dreamed of—a success abounding in truly marvelous facts and figures.

And this is the story of Gordon McGregor of Ford, Ontario, and of the establishment of the Ford Motor Company of Canada, Limited.

To-day, half the population of four towns depend upon the Ford Company of Canada for their earnings. These are Ford City, Walkerville, Windsor and Sandwich.

The last census states that the average family consists of five persons. As there are over 3,000 employees in the towns mentioned above whose work is devoted to the manufacture of Ford cars, this official census figure shows that there are over 15,000 people that look to the Ford Company for their support. This does not include the nine cities in Canada in which Ford branches are established, which would add over 3,600 more.

And Ford employees are paid three times as well as the average as shown by government wage reports.

In April, 1915, a time when most Canadian manufacturers were following a policy of retrenchment, the present Ford schedule of wages was adopted by which the company virtually handed to its employees \$50,000 a month increased wages and reduced the working hours from nine to eight per day.

Surely, this is a great boon to Canadian workmen and their families. It is a boon to Canadian merchants who benefit by the increased purchasing power of all these families. It is a boon to the entire country in time of war when living expenses are higher than ever before.

And these employees have responded in like measure to the Empire's need for her people's support, Ford City alone having made what is probably a record contribution to the Patriotic Fund of \$34 per capita.

More than 300 Ford employees have enlisted for overseas service, and the Company is spending thousands of dollars in moving pictures which are offered free to assist in recruiting work all over the Dominion.

What an immense expression of confidence in the ultimate and unquestionable success of British Arms and the allied cause was this great wage increase!

But it was not the only evidence of the Ford Company's faith in the Empire.

Before the outbreak of hostilities the Company decided to reduce the price of the car by \$60. When the war came upon us the Company might well have been pardoned for withholding this reduction for a time. But they never even considered it. The reduction was made the same day war was declared.

And you can realize how real this confidence in the victorious prosperity of Canada was when you consider that the prices of Ford cars are set in accordance with the estimated production for the coming fiscal year and not by any means are they based on the profits of the preceding year.

\$652,000 has been spent on new buildings in Ford City since the war began.

Over \$1,000,000 has been spent on new buildings in four Canadian cities since war began, making a total expenditure for new buildings of approximately a million and three-quarters.

\$1,000,000 has been spent in new equipment since war began.

900 men have been added to the pay roll since war began.

And if there is needed further proof of this Company's absolute conviction in the progress and prosperity of the Dominion, it may be found in the fact that another \$60 reduction in the price of the car was made last August—making a total reduction of \$120.00 since war began.

This new price requires an output of 40,000 cars this year.

Then, too, the price of Ford parts has been reduced by \$147 per car—a reduction that means a big increased economy to Ford owners.

Such immense expenditures and price reductions as these are of the greatest benefit to the general welfare of the nation under existing conditions. They form one of the greatest possible influences towards boosting the prosperity of Canada.

Remember that all but \$16.88 worth of the material that goes into the construction of a Ford car is bought here in Canada—and it would all be bought here if it were possible to get it.

Truly, the Ford is, after all, a Canadian Car, built by Canadians. Very few Canadian manufacturers are able to show such a support to Canadian industry as this.

The Canadian Ford Company is basing this year's factory production plans on just double the business done last year.

They stake everything on the conviction that Canada is bound to prosper. They place all on the belief that Britain and her allies are bound to win.

McGregor of Ford and his Canadian associates may be pardoned for feeling proud of this record.



## The Wagon Shop That Became the Largest Automobile Factory in the British Empire

Back in 1903, the town of Walkerville, Ontario, was possessed of a concern called the Walkerville Wagon Company.

If, on some day when business was not rushing, the general manager, Gordon M. McGregor, wished to take a little stroll, he could walk around his shop in about 2 minutes by the factory clock.

Nobody would have believed at that time that this shop would, in a few years, develop into the largest plant of its kind in the Empire having a floor acreage of over 435,000 square feet and making 3 times as many cars as any other automobile factory in the British Empire. But so it has come to pass.

Through the efforts of Mr. McGregor and his Canadian associates, this wagon shop has been turned into the great Ford plant at Ford City, Ont.

The factory today is one of the industrial show places of Canada. Here are the highest paid automobile mechanics in the Empire who put their best into the building of a car that has won its way into the confidence of the Canadian public.

Here are hundreds of machines designed by Ford engineers, which are marvels of the industrial world.

Many of them would do the work of an ordinary sized automobile company in a week or so. But because of the demand for Ford cars they are kept busy the year round.

Here a new Canadian Ford is born every three and one-half minutes.

Here workmen are busily engaged in making additions so that the production of cars may keep pace with the demand. There never has been a time since war began when gangs of men were not at work expanding the plant, literally building for the future.

Look in at the power plant and you will see two monster 650 horse-power gas engines. What a contrast to the early days when the factory power was derived from the hind wheel of a Model "C" car!

In the immense heat treatment plant, Vanadium steel, the most expensive and best of steels, is heat-treated the Ford way. Here each steel part is especially prepared for the stress and strain it will have to withstand in the completed car.

The machine shop contains many wonderful sights for the visitor. There are long rows of very expensive gear cutting machines. And there is the great machine that mills 48 cylinders at one time! And another that drills 41 holes at once in a cylinder casting from sides, top and bottom. Marvelous speed and equally marvelous accuracy!

Then there is the handsome office building in which close to 200 workers are employed. In all there are over 30,000 people dependent on the Canadian Ford Plant for their support.

In this plant the Ford car is constructed practically in its entirety— even the steel, as mentioned above, is refined here.

Furthermore, and here is a record rarely found in other large Canadian factories, all but \$16.88 worth of the material used in the making of the Canadian Ford is bought right here in Canada. Few products can lay claim to being so strictly "Made in Canada" as the Ford car.

Consider what this means to Canadian industry when it includes such immense purchases as 25,000 tons of steel, 1,500 tons of brass, etc.,

120,000 wheels, 200,000 lamps, and other materials in proportion. Practically the entire output of several large Canadian factories employing hundreds of workmen is taken by the Ford Plant at Ford City, Ont.

But great as this influence is for the increased prosperity of the Empire, it does not stop there. All over the Empire are Ford Dealers who are important factors in increasing the wealth and prosperity of their communities.

The spirit of faith in the future that has prompted the Ford Canadian Company to proceed with a policy of full-speed ahead in times that have seemed to many to require the use of extraordinary caution and conservatism, is a happy, progressive, enthusiastic spirit that is radiated in every city or town of any size in the whole Dominion and in the Empire over the seas through the Ford Dealer whom you will find there.

Besides this there are the nine branches in Canada and one in Melbourne, Australia, four of which have been rebuilt since war began at a cost of over \$1,000,000, that are powerful supports to these dealers in being elements of first importance in adding to the wealth and progress of the nation.

But, phenomenal as the development of the Ford Plant has been, its great success was not attained without its share of great difficulties.

The first three years of its existence were somewhat precarious. The first car was not shipped from the factory until six months after the company was organized. Nowadays, 20,000 cars would have been shipped in that time.

The first main building was a two and a half story brick structure and the entire plant occupied about one acre of ground. The machinery consisted of one solitary drill press.

From 1910 on the business increased so fast that it was difficult for the plant capacity to keep pace with the sales and additional buildings and equipment were constantly being constructed and installed.

In 1911 the output was 2,400 cars, in 1912, 6,500 cars were built, and so on up to this year's estimated production of 40,000 cars.

The executives of the Canadian Ford Company make no consideration of the war. They are so thoroughly Canadian in their ideals that they take the prosperity of Canada and the triumph of Britain and her allies as accomplished facts.

No stops have been made in their plans for progress—not the slightest hesitation has been evidenced in developing this great Canadian Plant to its highest degree of efficiency on account of the war.

As evidence of this \$400,000 has been spent on new buildings at Ford City—a million dollars has been spent on new equipment—\$965,000 was expended on branches in four Canadian cities—and 900 men have been added to the payroll—all this in a belligerent country during the progress of the greatest war the world has ever seen.

In addition, the price of the Ford car has been reduced \$120 since the memorable August 1, 1914.

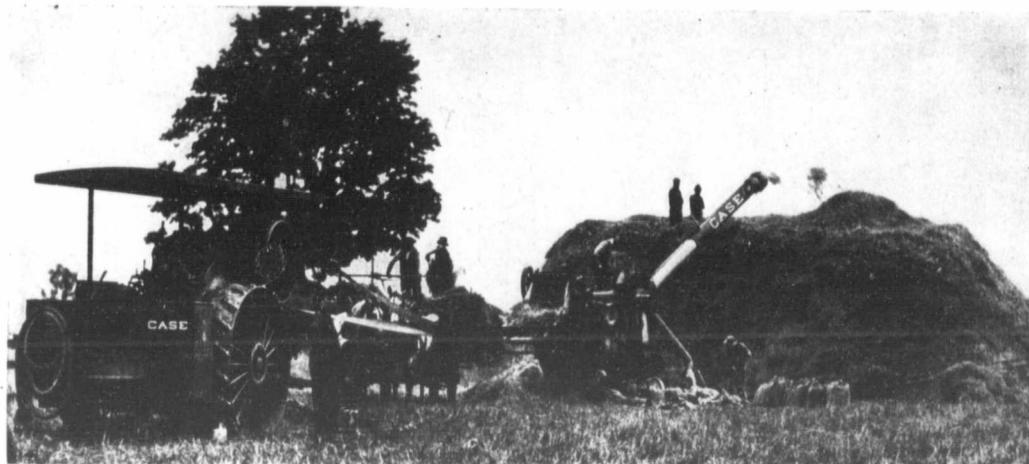
So then, this is the story of the wagon shop that became the great Canadian Ford Plant. An industry that is proud to say that it builds its product from Canadian material, with Canadian workmen and that backs its Canadian patriotism with its hard cash.

## Ford Motor Company of Canada, Limited Ford, Ontario

Ford Runabout . . .	\$480
Ford Touring . . .	530
Ford Coupelet . . .	730
Ford Sedan . . .	890
Ford Town Car . . .	780
f. o. b. Ford, Ontario	



All cars completely equipped, including electric headlights. Equipment does not include speedometer.



## Farmers Everywhere are Choosing Case Tractors.

Whichever size of Case tractors is suitable for your farm, whether it be steam, gas or oil, you can bank on its being the best of its kind in the market, made honestly and conscientiously to uphold our name and fame.

In the field and in our laboratories we have carried on tests and we know from experience what is best to incorporate in a tractor. In its class each Case tractor is a masterpiece, embodying all the best features.

Why, then, choose as your investment a tractor that has fewer years of experience behind it? Case has been in business 74 years. You would not buy an experimental automobile. Then, why, a tractor except from a company long engaged in making the best agricultural machinery?

# CASE

### Steam Tractors in All Sizes

Case steam tractors need no introduction. They are world famous. For years they have led in the field of steam power. Each year, while others devoted their efforts to gas, we have continued to refine our steam product, because we maintain that in certain localities steam is best.

Case steam engines develop more power per pound of weight than any other. The boilers on Case engines are so carefully constructed as to meet the most rigid law requirements. They have won in every contest for fuel and water in which they have been entered.

Seven sizes: 30 - 40 - 50 - 65 - 75 - 80 and 110 H. P. Our catalog describes them in detail. Send for it.

### Gas and Oil Tractors

Since 1892, when Case built the pioneer gas tractor, we have spent thousands of dollars to make Case Gas and Oil tractors the most perfect on the market.

We have experimented at our own cost—NOT at the cost of our customers.

Case tractors are not merely assembled but entirely built by skilled workmen in the Case plants. All parts of Case tractors are easily accessible. There are no complicated parts to remove when slight adjustments are necessary. All working parts are enclosed or fully protected.

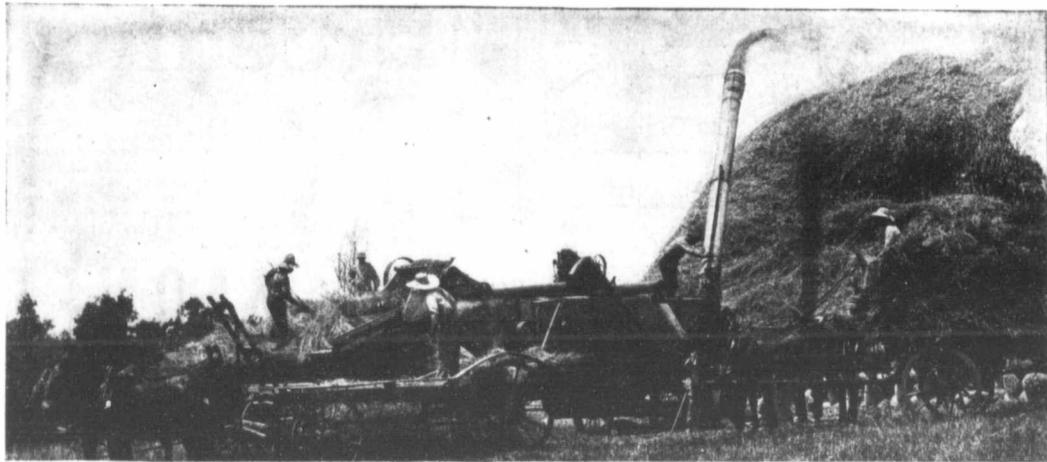
Before buying a tractor learn all about Case tractors by sending for the latest Case Machinery Catalog. Your name on a postal brings it.

THE NEW 1916 CASE CATALOG IS WORTH WRITING FOR.



**J. I. CASE T. M. CO., Inc.**

**750 Liberty St. Racine, Wis.**



## Thousands of Case Threshing Machines in Use.

Case threshing machines are numbered by the thousands. In the United States, Canada, Europe, South America and the Phillipines they are satisfying the most exacting requirements.

For seventy-four years Case has been building only the best threshing machinery. Each year has added thousands of new users. Why? Because Case users are our best proof of satisfaction. They have found Case machines grain-savers--profit-producers. They have passed the good word along the line. Today Case sells 3 machines to 1 of any other make. What better evidence of Case supremacy can you find?

Your safest investment in buying a threshing machine is to buy a CASE. They are backed by years of experience--they are built to Case standard. You know what that means.

# CASE

### A Few Reasons why Case Machines are Revenue Producers

1. Frame is sturdily constructed of steel channels. No danger of warping and getting out of shape.
2. The big cylinders of Case machines, with their steady motion, are thorough separators. With this feature the most unfavorable weather conditions will not stop threshing, for the big cylinder handles damp and wet grain easily.
3. The cylinder teeth are made of special steel, made to our own formula and treated in our own shops. The strength of Case cylinder teeth is the result of extensive experiments in the field.
5. Our system of oiling with pressed steel compression cups for hard oil makes it possible to lubricate all working parts while machine is in operation.

Just add to these reasons the fact that Case machines are proof against such dangerous elements as fire - wind and water.

Think for a moment what that means. Hundreds of owners have lost their machines by fire because they had wooden machines.

No farmer can afford to take chances. Especially in the busy season, for delays are serious and every minute counts. With a Case machine you are always protected. "BETTER BE SAFE THAN SORRY".

The new 1916 Case Catalog gives ALL the facts and the REASONS WHY. Be sure and get YOUR copy. Your name and address on a card brings it.



**J. I. CASE T. M. CO., Inc.**

**750 Liberty St. Racine, Wis.**



**FEEDING AT END OF WINTER**

It always is more difficult to keep stock cattle in good condition toward the end of the wintering period than earlier. The fodder has lost its feeding value to some extent and is less palatable. An amount that would have been sufficient earlier, will not be enough along toward spring. The animals will not clean it up as well and what they do eat is lacking in strength. This is always more noticeable where the stock have been wintered largely on dry fodder. Where alfalfa and silage can be fed there is not this tendency for stock to lose in flesh at the end of the feeding season. Many do not have silos as yet, and on such farms these rough feeds that have deteriorated as a result of the exposure, should be supplemented with some strong concentrate in order to keep the stock from running down. It would pay in most cases to feed some concentrate to stock cows and heifers all winter if the roughage is very poor.

The temptation under these circumstances is to think that since it is not very long until the pasture season will open the cattle can get along and make up for it after they go on the grass. It is really poor policy to do this, and especially in the case of the cows and heifers that are to drop calves the coming season. These should by all means be fed some cottonseed cake and perhaps a little corn or kafir during the closing weeks of the feeding period.

It never pays to let cows and heifers come out of the winter skin-poor. Their calves will be weak and the per cent of losses high. The heifer will be in no condition to nourish the calves properly and it will take all summer on good pasture to get them back in condition. The young

heifers that bring calves under such treatment will never grow out into good-sized cows. They will have received a stunt that they cannot overcome. This is one reason why breeding cows in the herds in the western provinces have a tendency to become smaller in size than is the standard for the breed. This developing of the young heifers is one of the weak points in the growing of cattle, and every precaution possible should be taken to see that they are so fed that they will not be stunted at this most trying period of the year.

**Watch Sows at Farrowing Time**

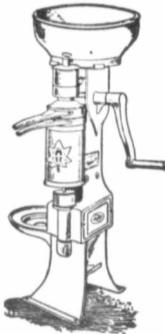
It is important to save the early litters. Every pig lost lessens the chance for profit. To be on the safe side an attendant should always be present at farrowing time, but should not interfere with the sow unless necessity calls for his assistance. The raiser should always cultivate the confidence of his animals by quiet and humane handling; this care and attention in times of necessity will pay big returns. The pigs upon arrival should be rubbed dry with a gunny sack and quietly removed to a place of safety. For this purpose it is well to provide a covered basket or box containing gunny sacks. In cold, damp weather it may be well to warm a brick, wrap it in a gunny sack, and place it in the basket to warm up the new arrivals. If the sow is very long in farrowing it may be well after two or three hours to place the little pigs carefully and quietly where they can get some nourishment and then replace them in the basket until the mother is through.

For twelve hours before farrowing and for twenty-four hours afterwards, the sow should have no feed. During this period all the fresh, clean water that she may desire should be accessible. The water should have the chill



Courtesy of Canadian Kodak Co.

**"Breeding"**



means much the same in the stock barns as it does "in society." Whether in commercial life or the social circle, it has everything to do with success or failure. A well-bred man will not make much of it if he can't CONSERVE the OPPORTUNITY his "breeding" showers upon him. Neither will a "record milker" bring much gold to the man who owns her if he dissipates ever so little of her product every day with a faulty separator. Get a

**"MAGNET" Cream Separator**

and you will get the last possible ounce of precious butterfat.

**The Clean SKIMMER**

is not the lowest priced machine made but it is the best value in any Cream Separator known. Quality, Character and the highest possible efficiency is first guaranteed by the severest tests, then a modest profit to the manufacturer is added over bare cost of material and construction.

The "Magnet" is made in Canada by Canadian engineers who have first of all gained their experience on Canadian dairy farms in all essentials to a separating machine that fits it perfectly and economically to every requirement. The result is the "Magnet"—a separator that more than fulfills the last promise made in its name.

We will easily prove what we say by showing you the "Magnet" in your own dairy. The design and construction of the machine is what has compelled us to double the output of our factory this year.

**The Petrie Mfg. Co. Ltd.**

Head Office and Factory: HAMILTON, ONT.  
WINNIPEG, CALGARY, REGINA, VANCOUVER, MONTREAL, ST. JOHN, EDMONTON, LETHBRIDGE.

You saw this advertisement in this magazine. Don't forget to say so when writing.

**GET-A-HEADSTART- IN-THE-SPRING**

YOU wouldn't lubricate a good watch with cold lard. Yet it is equally foolish to use cheap oil on an expensive tractor. The fine machinery of your tractor will be well oiled in the coldest days in March and April if you use



the oil that will stand a zero cold test. Polarine takes care of the cylinders and burns clean when its work is done. It leaves a minimum of carbon.

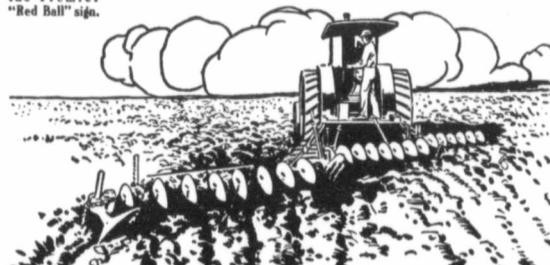
Your tractor was worth buying. Polarine will make it a paying investment. It keeps it working easily and tirelessly. Polarine is suited to its lubrication needs—in any temperature.



Buy Gasoline and lubricants under the Premier "Red Ball" sign.

**THE IMPERIAL OIL COMPANY Limited**

BRANCHES THROUGHOUT CANADA



You saw this advertisement in this magazine. Don't forget to say so when writing.

taken off. The first feed after farrowing should be very light, preferably a bran mash. The best indicator of the amount of feed necessary for a sow and her pigs is her condition and the condition of the youngsters themselves. The sow should receive enough to keep her and her pigs in a fair condition, and yet she should not be overfed. Overfeeding of the sow often causes scours in the pigs.

**Cream Separator Care**

The hand separator is indispensable on farms where cows are milked. No one now questions the profitableness of the separator as an investment. It will pay for itself in a comparatively short time in the cream saved.

In order to get the very best results from the use of the separator, it should have the right kind of care. The following rules briefly state what this care should be:

Put the separator in a bright dairy room that can be easily cleaned and that is always free from odors of all kinds.

Set the machine perfectly level and bolt it to a solid foundation, preferably concrete.

Oil thoroughly each time it is used.

Be sure that the parts are properly assembled, then start the machine gently and slowly.

Maintain the proper speed and keep an even pressure on the handle at all times.

When separation is completed, flush the bowl with a quart of skim milk or warm water.

Having set the cream into cold water and disposed of the skim milk, take the bowl apart and rinse with lukewarm water.

Using hot water, washing powder and brushes, scrub all parts that come into contact with the milk.

Rinse with hot water, then place in boiling water for a few minutes and hang up to dry.

Wipe frame of separator and clean the room.

The necessity for thoroughly cleansing and scalding the separator every time it is used can not be too greatly emphasized. Cream from an unclean separator has very poor keeping qualities, soon develops a decided "off flavor" and becomes second grade. Cream of this kind brings financial loss to the purchaser whether he is selling it on quality basis or not. Poor cream makes poor butter and poor butter returns a low price to the producer, whether the creamery is co-operative or otherwise.

The financial loss caused by unclean separators is frequently not fully appreciated, because it is indirect; it is, however, none the

less real. Good business management of the dairy demands therefore that the separator be thoroughly cleaned each time it is used.

**Value of Skim Milk**

Skim milk is an ideal feed for hogs and especially brood sows and growing pigs. On the dairy farm the calves must also be raised on skim milk. It is especially important that the heifer calves be properly developed, as the keeping up of the herd depends upon the dairy farmer's ability to properly raise the calves. This by-product is one of the most important sources of revenue on the dairy farm, and those who are not making the most of it are failing in making the profit they should from the milking of cows.

In supplementing such carbonaceous feeds as corn, skim milk can be classed as a nitrogenous concentrate. Feeds rich in muscle-making nutrients must frequently be purchased and they are always higher in price than the carbonaceous or fat-making feeds.

In the process of separation of the milk, nothing has been removed but the butter fat. All the protein remains and it is in a more digestible form than that found in any commercial feed. There are plenty of substitutes for fat that are a great deal cheaper than butter fat.

To get the best results from skim milk it should never be fed alone. In combination with corn it will produce as good gains on pigs as corn supplemented with tankage, linseed meal, or other commercial feeds rich in protein. A proper amount of skim milk used with farm-grown carbonaceous feeds will return a much higher money value than the feeding of large quantities of skim milk without so combining it with other feeds. There seems to be considerable difference of opinion as to the money value that should be credited to skim milk. This will depend largely upon the skill and knowledge of the feeder in using it in such proportions as will make ideal combinations with these other feeds.

In an experiment in which pigs were fed skim milk alone as compared with others fed skim milk and grain, the skim milk pigs gained but three-quarters of a pound daily, consuming twenty-seven pounds of skim milk to every pound of gain. In a lot fed one pound of grain to every four pounds of skim milk, the average daily gain was one and four-tenths pounds, and it required only two and one-third pounds of grain and nine and one-third pounds of skim milk for each pound of increase. When combined with grain, five



It costs less to buy a **DE LAVAL** than to buy experience

EACH year some 40,000 farmers, who have bought at one time or another, "cheap" cream separators, discard the inferior, cream wasting machines and replace them with clean skimming De Laval.

These men bought the "cheap" machines because they thought they were "good enough" or "just as good" and that by purchasing such machines they could save a little money. They actually would have been better off in most cases had they bought no separators for they lost most of the money they spent for the "cheap" machines, besides all the cream these machines have failed to get out of the milk.

No one ever saved money using a "cheap" cream wasting separator or an old or half-worn-out machine. No one ever got back to the money spent for such a machine by continuing to use it. Those who bought "cheap" machines and got out of the difficulty best are the ones who quickly discovered their mistake, discarded the inferior machines and put in real cream separators—De Laval.

There are nearly 2,000,000 farmers who have bought De Laval, and every one of these had just as many opportunities to buy "cheap" separators as any one else. They did not do it and are now money ahead. They have avoided paying the high cost of experience, and their De Laval have paid for themselves many times over. It always pays to buy a separator of proved, known superiority.

The nearest De Laval agent will be glad to let you see and try a De Laval on your farm, without obligating you in any way. It is better to take advantage of this opportunity than to pay dearly for your cream separator experience. If you don't know the local De Laval agent, simply address 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 Green Feed Silos.  
Catalogues of any of our lines mailed upon request.  
**MONTREAL PETERBORO WINNIPEG VANCOUVER**  
60,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

You saw this advertisement in this magazine. Don't forget to say so when writing.

OFFICIAL AWARD RIBBON



Big Ben



—took first

prize in the alarm clock class at the San Francisco fair.

Big Ben was shown every day of the fair, almost ten months. He was judged on appearance, performance, pedigree. He carried off the Medal of Honor, the highest award on alarm clocks.

Big Ben is shown by all good dealers. Ask to have him put through his paces. In the United States \$2.50. In Canada \$3.00.

Western Clock Co.

La Salle, Illinois Makers of Westclox

You saw this advertisement in this magazine. Don't forget to say so when writing.

Twelve Months of this Magazine for One Dollar

or six pounds of the skim milk has a feeding value equal to a pound of gain.

While skim milk does not have an actual market value, it can be credited with a cash return based on the prices of the other feeds with which it is combined. If corn is worth 50 cents a bushel, skim milk can be made to return a value of 25 to 30 cents per hundred pounds in the feeding of pigs. This estimate is based on combining the skim milk and corn in the proportions to give a properly balanced ration. This, in pig feeding, would be at the rate of about three or four pounds of the milk to each pound of corn. If eight or nine pounds of milk should be fed to each pound of corn, the skim milk would not return more than 15 or 16 cents a hundred. The market price of the pork produced also enters into the value of the skim milk. A good rule for calculating the value that should be returned from 100 pounds of skim milk in pig feeding, is to multiply the price of pork per pound on the market by five. Another rule that has been used is to estimate 100 pounds of skim milk to be worth half the price of a bushel of corn. Since the price of pork and the price of corn usually rise and fall together, either one of these rules will give approximate values for the skim milk.

Skim milk is too valuable a feed for calves and pigs to be carelessly handled. To get the best results it should be fed as soon as possible after separation and should under no circumstances be kept in dirty vessels. Fermentation will begin to take place at once and not only will food value be lost, but the effect upon the animals may be most serious. Since the skim milk is so valuable for both calves and pigs, it is a good plan to arrange to have the most of the calf-feeding take place at a time of the year when there are no little pigs to feed. If most of the calves are dropped in the fall they will be old enough to get along without milk by the time the brood sows and pigs need the milk in the spring.

**The McKenzie Seed Catalog**  
20th Annual—Better Than  
Ever for 1916

From start to finish the 20th Annual Seed Catalog of A. E. McKenzie Co., Ltd., Brandon and Calgary, is a work of art. Illustrated with nearly two hundred and fifty engravings reproduced from photographs of the produce of McKenzie's seeds, tastefully arranged, showing grasses, vegetables, flowers and fully described with that masterfulness which denotes practical knowledge and experience of the various subjects, it stands out in advance of any of its predecessors.

This 96 page seed book is indispensable to the progressive farmer and gardener.

So completely and carefully is every subject handled that while not voluminous it contains immeasurable information, suggestive, explanatory, logical and of extreme practical value.

The originality and delightful simplicity of the cover is unique, which has, in all probability, never been equalled in Canada.

All interested in seeds should not fail to obtain a copy of this beautiful book. It is free for the asking.

**WHEAT FOR POULTRY**  
When to Feed It and When It Is  
Dangerous

While wheat is the best and safest grain to feed to poultry, it should never be fed alone. In itself, it is not a balanced food. It should always be fed in conjunction with other grains, the mill by-products and animal food. In general, it is not advisable to feed damaged wheat to poultry. There is one exception to the rule, however. Weevil-infested wheat will not hurt chickens and can be safely fed.

Wheat that has sprouted in the shock is never a safe poultry food. Much sprouted wheat is turned down by the millers and is sold to the feed stores as chicken-feed. The sprouting doesn't injure the feeding quality of the wheat, but sprouted wheat is likely to be moldy, and moldy grain should not be fed under any circumstances. Moldy grain causes quite a number of poultry diseases, notably aspergilosis, a disease as deadly as its name would indicate. This disease is also caused by using moldy litter or chaff. The disease is caused by the mold spores being introduced into the fowl's system, where they grow and spread. The respiratory and digestive systems are usually attacked.

Wheat screenings are usually a safe poultry food. Strictly speaking, screenings are not damaged grain. They are the small or shrunken grains that pass through the screens while milling. They are richer in protein than sound wheat, and if too much dirt and weed seed are not included, it is an economical practice to purchase and feed screenings.

The by-products that result from the milling of wheat are good and cheap poultry foods. Wheat bran and middlings are much richer in protein than whole wheat and are invaluable in formulating a laying ration. Both are made of the outer portion of the wheat grain. They are, relatively, cheap foods, and it certainly would pay the farmer to exchange a portion of the grain he has reserved for his chickens for these by-products.

**Columbia Batteries**

For steady, all-day running, use COLUMBIAS. For instant response, use COLUMBIAS. For bells, blasting, barn lanterns, wagon lights, telephones, signals and autos, use COLUMBIAS—the rugged, full-powered battery. It's borne the makers' name for 27 years and is sold in every part of the world.

Canadian National Carbon Co., Limited  
99 Fenton Road, Toronto

Fabrostock spring-clip binding posts, no extra charge. They prevent short circuits.

**WHAT THE FARMER CAN DO WITH CONCRETE**

**This Valuable Book FREE**

It's not a catalogue but a book of information—brim full of valuable, money-saving facts for the farmer.

It tells how to construct fire-proof, weather-proof, wear-proof buildings and other farm improvements of indestructible concrete—the most economical of all building materials.

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.

Clip the coupon below. Fill in your name and address and mail to-day.

**Canada Cement Company Limited,**  
Herald Building,  
MONTREAL.

**CUT OUT AND MAIL**

CANADA CEMENT COMPANY LIMITED, Herald Building, MONTREAL. 773  
Gentlemen:—Please send me a free copy of "What the Farmer can do with Concrete". 9

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# FARM STRUCTURES

## Two-Family Farm House

By HERBERT SHEARER

THERE is a great deal of pleasure in studying house plans, especially with a little money waiting in the bank for building purposes. It is good discipline to match one's ambitions against the amount of money available for the new home.

Many times farmers have built pretentious houses and worried over the expense afterward. Many farm women have killed themselves trying to take care of such houses. It is much better to build a small well-arranged house and to make it comfortable with good heating and ventilation and other modern improvements.

The design and plan shown by the accompanying illustrations is a combination house that may be used for one family or two.

rooms and a washroom in the basement fitted with a shower bath. All plumbing is connected with the septic tank by a line of four-inch, vitrified sewer pipe with leaded joints.

Pumping engines are becoming so universal on farms that home water works call only for the additional fixtures and piping to carry the water where it is wanted; and it is not expensive when the cost is balanced against what our city friends pay for similar service.

One hundred dollars will buy all of the fixtures and piping necessary for a modern bathroom and the same system of pipes will supply fresh water and dispose of waste water both for kitchen and bath.

Kerosene and gasoline engines



Something Like a Home

Sometimes a valuable farm hand would like to get married and live on the farm; possibly a son or daughter would prefer to spend the first years of their married life under the parental roof, yet in a separate apartment. The expense is less than to provide two houses.

If the upper rooms are not wanted for housekeeping purposes, the bedrooms will come in handy for extra farm help or for the children as they grow older.

The plans show a splendid concrete basement divided into rooms that may be kept at different temperatures. There is a question whether it is advisable to have the milkroom in the basement of the house. But there can be no serious objection if the room is light, has good drainage and is otherwise sanitary. It will be cooler than the usual separate dairy house, and the cost is less when made as shown in this arrangement.

The house is planned for hot and cold running water on all three floors. There are two bath-

rooms and a washroom in the basement fitted with a shower bath. All plumbing is connected with the septic tank by a line of four-inch, vitrified sewer pipe with leaded joints. Pumping engines are becoming so universal on farms that home water works call only for the additional fixtures and piping to carry the water where it is wanted; and it is not expensive when the cost is balanced against what our city friends pay for similar service.

One hundred dollars will buy all of the fixtures and piping necessary for a modern bathroom and the same system of pipes will supply fresh water and dispose of waste water both for kitchen and bath. Kerosene and gasoline engines

have been so much improved that pumping water for house and barn uses is now a pleasant farm chore. More use is made of running water in farm homes than ever before. The change would have come about long ago if men instead of women had been obliged to carry all of the water for the house. Livestock helped to put power behind the pump handle.

Many improvements have been added. One of the latest is a separate water heater that stands on



## KODAK on the FARM

Before you begin the improvements, during the progress of the work and after the improvements have been completed—Keep a Kodak record.

In every phase of farm work and farm life there are pictures that are interesting and valuable. And you can make them.

Ask your dealer or write us for illustrated booklet, "Kodak on the Farm."

EASTMAN KODAK CO., LIMITED, 606 KING ST. W., TORONTO.

### KILL-EM-QUICK—The Time-Tested Gopher Poison

It's On the Package as well as In Our Advertising



## GUARANTEED!

KILL-EM-QUICK, the old, original, time-tested gopher poison is guaranteed on every package with a money-back guaranty that backs up every word printed in our advertising.

KILL-EM-QUICK is guaranteed to kill all the gophers where it is used according to simple directions, for 1 cent an acre. If it fails, we will return the purchase price.

### Absolutely Certain Death

Gophers like its odor and sweet taste, they always find it. The tiniest particle kills instantly. Safest; no danger in handling. Easy to use; simply stir into moistened oats or ground feed. Quickest; one application cleans them out. Cheapest; 1 cent an acre or less.

Don't Be Misled, Get the Genuine Accept No Other.

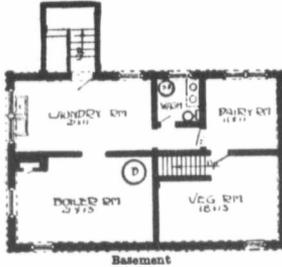
Get Kill-Em-Quick from your druggist. If he can't supply you we ship direct upon receipt of the price 3 sizes, 50c, 75c, \$1.25; enough for 40, 80, 160 acres. Send for FREE Gopher Book.

KILL-EM-QUICK CO., Ltd. Successors to Mickelson-Shapiro Co. Dept. C WINNIPEG, CANADA



the concrete floor of the basement and looks like a small, round coal stove, and that is what it really is, but there is a compartment where water is heated, circulated, and re-heated until the one hundred and fifty gallon hot water reservoir contains a hundred and fifty gallons of hot water, and it stays full and hot day and night, year in and year out, because the old man shakes the grate and drops in a shovel of hard coal at night and another in the morning.

The good wife may do her Monday washing; all members of the

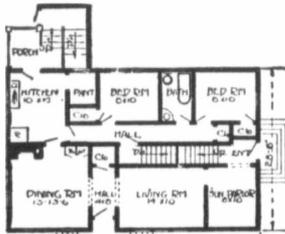


Basement

family may have their warm or hot baths; the dairy utensils are washed in hot water and still the hot water boiler is full and the water remains hot.

Concrete walks are becoming quite popular on the farm. They are made wider and longer than they were a few years ago; wider for looks and longer to reach out and connect with the concrete barnyard.

If this house is well built by using buildings paper and double boarding it may be heated with one fire in a good hot-air furnace. An eight-room house usually is considered the limit for



Ground Floor for No. 1 Family

hot air, and this house has ten rooms, but the heat pipes may be short, which is one of the main considerations.

There is no objection to using a hot-water heating system in a house as large as this. Many prefer hot water as the heat is more even. A hot-water heating plant costs more than a hot-air heater, but it is cheaper to run; that is, you get better value for the coal consumed, which counterbalances the extra interest on the first cost.

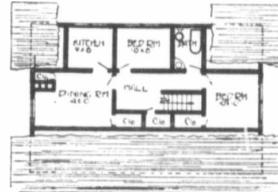
Fashion dictates that inside woodwork shall be plain, no beading whatever and very few curves. The most expensive rooms are

finished with plain, straight bands of wood instead of mouldings. From the baseboard to the crown moulding at the ceiling, including window casings, door casings, plate rail and the finish of built-in sideboards and bookcases, all are straight and plain with square or slightly rounded corners.

The idea is to make the insides of the different rooms smooth for easy cleaning, both to save labor and to prevent the accumulation of dust, because dust harbors disease-carrying bacteria, so that the health of the family depends a good deal upon the design of the interior woodwork, and the manner in which it is built into the house.

There are three outside entrances to this house. There may be four if the back steps are carried up to the second floor. a good pantry may be built on the second floor if another window is built in the gable end.

The old-fashioned porches are different from the ordinary. The porch roofs may be extended out far enough to protect the steps by making strong brackets. There should be no porch pillars.



For No. 2 Family

The Farmer's Workshop

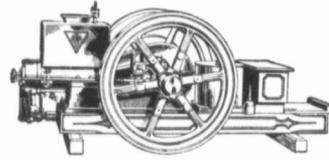
The statement that "man is a tool-using animal" appeals peculiarly to the farmer, especially in this mechanical age when labor-saving devices, special machines and high-pressure implements keep step with the demand for efficiency.

Every farm should have a well-equipped workshop with a bench, forge, vises and tools for working in wood and iron. At this season when outside work is slack, the shop can be made the center of much profitable industry, not only in making necessary repairs, but in the creation of new things of use and beauty for the farmstead and the home.

The farmer of the future must be a mechanic because machinery assumes an increasing importance in farming operations. This is illustrated in reviewing the history of the traction engine—the failures are invariably due to lack of skill in operating the steel horse or inability to make repairs. The farmer is distinctly handicapped who must run for the blacksmith every time a part breaks or something goes wrong.

Mechanical power can be used

Alpha Gas Engines



The Men Who Use Them Save Money

You can save money by using an Alpha Gas Engine just as do many other men. It will do work you cannot get done at all without power. It will do other work that is now costing you far too much in time and labor.

An Alpha Gas Engine is a saving investment any way you look at it. It will save money you now must pay out to get work done that requires power, because you can own and operate the engine at less cost than that of hiring some one with an engine.

It will do quickly work that you are now doing by hand and wasting a lot of valuable time over. It will pump water and do other similar jobs without attention and leave you free to get other work done. Your wife or your boy can start and operate it at many jobs to which you now must give your time. Having an engine will relieve you of the odd jobs that are time-wasters and give you more time to attend to the important work on your farm.

You need an engine and the sooner you buy one the quicker you will save the cost of the engine. Get an Alpha Gas Engine now, put it to work and it will pay for itself in a few months.

Ask for catalogue, prices and complete information. Made in eleven sizes, 2 to 25 H. P. Each furnished in stationary, semi-portable or portable style, and with hopper or tank cooled cylinder.

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 Green Feed Silos.

Catalogue of any of our lines mailed upon request.

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

You saw this advertisement in this magazine. Don't forget to say so when writing.

Buy Gasoline under the



Premier "Red Ball" Sign

GIVE your tractor a fair chance to do its best work. Buy a fuel for it that is dependable and powerful. Buy Premier Gasoline from our tank stations direct. You are sure of getting a reliable product at the lowest basis of price.

THE IMPERIAL OIL COMPANY Limited  
BRANCHES THROUGHOUT CANADA

You saw this advertisement in this magazine. Don't forget to say so when writing.

with profit in the farm workshop for the turning of lathes, sawing, drilling, grinding tools, etc.

"Quality first" is a good rule in buying anything, but it applies with extra force in buying tools. A poor tool is nothing but an aggravation. For example you can buy a hammer for ten cents that will look very much like the one that costs seventy-five cents. The cheap thing flies off the handle, its face becomes dented and its claw lose its grip on a nail-head at the critical moment—tending to produce more profanity than profit. High-grade tools last a lifetime, give satisfaction and are the cheapest in the long run.

In addition to the tools and machinery of the workshop, there should be a shelf or cupboard for paints—either ready-mixed for immediate use, or a supply of white lead, linseed oil, turpentine and dry colors for the home-made article. Cans of paint should be kept covered with air-tight lids. Brushes can be kept soft in a can of turpentine. The liberal use of paint on buildings and implements betokens a thrifty nature, for paint is comparatively cheap and prolongs the life of wood and iron.

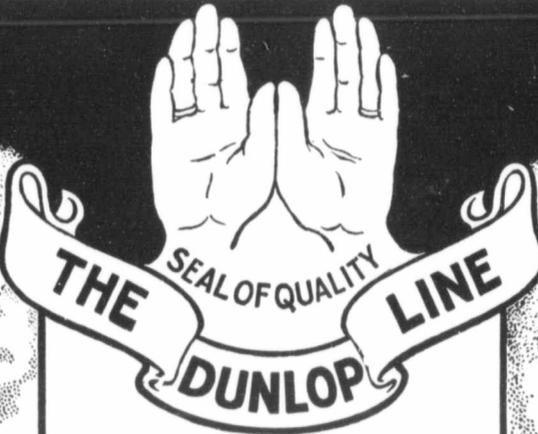
A stove in the workshop makes a comfortable place to spend a winter day tinkering with some of the many things that constantly spring up for attention. It makes a mighty good place for the boys to congregate for fun and work when they can't get out of doors in bad weather, and provides the means of a fascinating occupation that will fit them for success as the mechanical farmers of the future.

The farm workshop will pay for its cost in a few years by saving steps and loss of tools. Instead of leaving wrenches, hatchets, etc., where they were last used, or tossing things into odd corners, the central shop makes "a place for everything" in the way of a tool. The satisfaction of finding it when you want it repays the timely effort of "keeping everything in its place."

**Start Early in Order to Have a Good Garden—Hot Beds and Cold Frames**

A hot bed is almost indispensable to a good and early garden. The underheat for a hotbed is best supplied with fresh horse manure from the stable. Manure which has considerable straw in the combination is the best material to generate heat. This should be forked over and over until it is well broken and mixed. If the mass refuses to heat as promptly as desired, add a few pails of hot water.

There are two ways of constructing hot beds, one upon the ground surface, the other by sinking a pit from eighteen to thirty



**THE SEAL OF QUALITY  
DUNLOP LINE**

As the widest-known trade mark in Canada. As the Seal of Quality in all that pertains to Rubber Goods. As the certain indication that the Dunlop Tire & Rubber Goods Co., Limited, gladly stand back of the article, The "Two Hands" trade mark is the buyer's non-failing guide and non-varying assurance.

The home of the "Two Hands" is in Toronto. There are branch homes in all the leading centres.

When the "Two Hands" Trade Mark is affixed to

## Dunlop Thresher Belting

You can know that you are getting Canada's Best.

Link yourself up with the name "Dunlop" and those "Two Hands." They are your protection.

**Dunlop Tire & Rubber Goods Co., Ltd.**

**Head Office and Factories: Toronto**

BRANCHES—Victoria, Vancouver, Edmonton, Calgary, Saskatoon, Regina, Winnipeg, London, Hamilton, Toronto, Ottawa, Montreal, St. John, N.B.

inches deep, or more, very early in the season, this requiring a longer period of underheat. The sunken pit has the advantage in steady and lasting heat, but is at a disadvantage as being liable to flooding with surface water, and, unless proper conditions are favorable such as a knoll or spot thoroughly drained, should be avoided, as even a partial flooding will ruin the effectiveness of the hot bed. The best location for

a hot bed is on the south side of a building or of a tight board fence.

A hot bed that is to be used for one season only can be made with very little expense, but for those who intend to continue the use of the hot bed it is best to use good material and good workmanship. After the size of the bed has been determined, a frame or box without top or bottom is made of just the right size to admit of using

sash for a cover. The sash should slant to the south, consequently the front of the box will be lower than the back. An eight-inch front and a twelve-inch back will be about right, though many other forms are used. There are several designs in glass arrangements, varying from the ordinary window sash to the regulation standard of six by three feet, preference for convenience in handling being in favor of the

latter, as in cases of sudden change of temperature or during April showers, these can be put in position easier and quicker than a few small ones of different dimensions. The frame should be regulated to the size of length and width of the sashes at disposal, and so arranged that, when the sash is placed in position, it will be thoroughly water-tight.

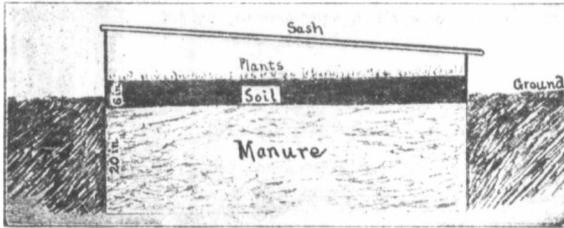
**Give Plants Proper Start.**

The amount of manure used will vary in proportion to the heat required, but usually a depth of twelve inches will suffice. In filling the bed, put in a thin layer of manure at a time and press it down firmly. Care must be taken to see that each layer is spread evenly and packed thoroughly. Six inches of rich, mellow earth is needed for a seed bed. After the bed is heated through it is

answer the purpose. Even in the coldest weather, ventilation should be provided, if only for a short time each day. The sash should be raised from the side opposite the wind to avoid direct draft.

Great pains must also be taken with the watering. Water only during the middle of the day so that the surface soil about the plants may have time to dry before dark. Otherwise the dreaded damping off of the plants may be induced. Covering of some kind such as old carpet must be provided for the bed at night in order to maintain the heat. Lay the cover on the sash before the sun gets low in the afternoon and allow it to remain until nine or ten o'clock in the morning, depending upon the weather.

Transplanting to a cold frame



Cross Section of a well made Hot-bed.

wise to allow the soil used for the seed bed to remain heated and well moistened for a few days in order to start the weed seeds before the garden seeds are put in. The weed seeds will begin to germinate within a day or two, when the earth may be worked over on the surface with a rake which will destroy the tiny plantlets. It often happens that the heat in a hot bed is so intense when confined by the earth covering that it would "burn" the vegetable seeds if they were planted at once, hence the advantage of a few days' delay in this matter. In the meantime the frame should be well banked on the outside with the same heating material as was used inside the frame. Keep a thermometer in the seed bed of the hot frame to determine just the temperature of the soil. When the temperature of the soil is reduced to about 85 or 90 degrees, and can be so maintained, the seed can go into the earth. Plant the seeds shallow and make the earth firm about them so that the roots will take food from the soil at once.

A growing plant must have air as well as heat to do its best. Lift the sash for a time during the middle of the day, especially when the sun is shining brightly. It may be necessary to cover the glass with a mixture of whitening or lime and water to somewhat protect the plants from the intense heat of the sun. Sheets of old newspapers spread over the glass during the middle of the day will

should be done whenever the plants begin to crowd, but they, of course, should be well established before the work is done. Tomatoes should be reset when the second set of leaves are formed. Transplanting makes the little plants stocky. Set plants in the cold frame two by four inches. Much more cold frame than hot bed space is necessarily required, but the expense of operating the cold frame can be much reduced by using cloth covers instead of glass. In fact, these covers do equally well as regular sash for much of the hot bed work, as for lettuce and cabbage. Use medium weight sheeting, tacking tightly over the frame, and paint with raw linseed oil. Give three or four coats and the sheeting will stand any amount of rain and will answer nicely in place of glass for nearly all purposes.

**In Search of His Home**

Rudely awakened from sleep, at about 2.30 a.m., by his doorbell, the peaceable resident stuck his head out of the window and in no very pleasant manner demanded to know what was wanted.

"Scuse me, sir," answered a muddled voice. "Does Jones live here?"

"Jones? Of course not. What the devil do you mean by ringing people's bells at this time of the morning? Who are you, anyway?"

"Who'm I?" asked the disturber, apparently surprised. "Why, I'm Jones!"

## WESTERN KING UNION MADE OVERALLS



**You can't buy better.**

*"Made in Winnipeg"*

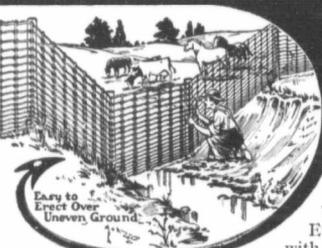
**Every garment guaranteed.**

**Western King Mfg. Co. Limited - Winnipeg 52**

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## PEERLESS PERFECTION

### THE FENCE THAT STAYS "PUT"



**PEERLESS** Perfection is one of the easiest fences to erect, because it stays "put." It can be erected over the most hilly and uneven ground, without buckling, snapping or kinking. Every joint is locked together with the well-known "Peerless Lock." The heavy stay wires we use prevent sagging and require only about half as many posts as other fences.

**Peerless Farm Fence**

is made of the best Open Hearth steel fence wire. All the impurities of the steel are burned out and all the strength and toughness left in. Makes the fence elastic and springy. It will not snap or break under sudden shocks or quick atmospheric changes. Our method of galvanizing prevents rust and the coating will not flake, peel or chip off.



Send for catalog. It also describes our full line of farm gates, poultry fencing and ornamental fencing. Write for it today. It is sent free on request.

**The Banwell-Hoxie Wire Fence Co., Ltd.**  
Winnipeg, Manitoba      Hamilton, Ontario



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## UNION BANK OF CANADA

**With Cash in the Bank You Can Buy to Advantage**

Everything costs more when you have to buy on credit. Why not practice self-denial awhile, if necessary, open a Savings Account in the Union Bank of Canada, and with the money in hand, buy at cash prices. The saving will help your balance to grow.

**BRANCHES IN SASKATCHEWAN**

Abley, Adanac, Albank, Arcola, Asquith, Assiniboine, Bounty, Buchanan, Bruno, Cabri, Camora, Carlyle, Craik, Cupar, Cut Knife, Dinsmore, Dummer, East End, Esterhazy, Estevan, Eyebrow, Filmore, Gravelbourg, Guernsey, Gull Lake, Herbert, Houghton, Humboldt, Indian Head, Jansen, Keisler, Kerrobert, Kindersley, Landis, Lang, Lanigan, Lawson, Lemberg, Loverna, Lumsden, Luseland, Macklin, Major, Maple Creek, Maryfield, Macrorie, Mellort, Milestone, Moose Jaw, Moosomin, Morse, Netherhill, Neudorf, Ogema, Outlook, Oxbow, Penze, Perdue, Papot, Plenty, Prince Albert, Qu'Appelle, Regina, Robsart, Rosenville, Rosetown, Saskatoon, Scott, Sceptre, Shaunavon, Simpson, Sintaluta, Southey, Strassburg, Swift Current, Tessier, Theodore, Togo, Tompkins, Vangard, Veregin, Viceroy, Vidora, Wapella, Wawota, Watrous, Webb, Weyburn, Wilkie, Windthorst, Wolseley, Yorkton, Zeeland.

**Head Office, Winnipeg**  
Total Assets over \$90,000,000  
Deposits over \$72,500,000

You saw this advertisement in this magazine. Don't forget to say so when writing.

# Farmers' Week at M.A.C.

The full story (or its main "news" features) of the "Farmer's Week" at Manitoba Agricultural College has already been told so far as it can be reproduced by the newspaper press. But the most praiseworthy efforts that our contemporaries have done or anything that we can do will never sufficiently set forth the splendid character of much that was in that week's performance, nor will it ever overstate the importance of certain of its results.

This is notably the case with respect to the competitive grain exhibit. In point of quality (and fairly uniform quality, too) there has never been anything like it shown in Western Canada. When we recall the first attempts to get men to show their hand in this way at this annual gathering and contemplate the magnificent effort of last week—there isn't a word for it in well earned praise and congratulatory language.

We have found that the last thing the staff of Manitoba Agricultural College, are concerned about is personal publicity. In these pages on many occasions the sterling character and modest bearing of that fine body of men and women has been referred to, so that when anything does appear reflecting particularly on one or more of them individually it may be taken that something very unusual has been done. At this time Professor T. H. Harrison, chief of the Field Husbandry department, must be singled out for "decoration" although it happens that his medal has not yet been struck.

The history-making grain show and all that it means to the prov-



T. H. Harrison, B.S.A., Professor of Field Husbandry, Manitoba Agricultural College

ince and also directly to advertising the Dominion was very largely due to the energy, enthusiasm and good sense of Professor Harrison. Untiring zeal under the best of conditions is the price one will always have to pay for getting the farmers to come out and to come up to time. Certainly the character and abundance of this year's crop was a big lever, but after all allowance has been made the personal element had the making or the breaking of the higher quality of this year's exhibit. It also has everything to do with the eminently satisfactory and artistic way in which it was displayed.

And the fact that our friend is an "old boy" of the M. A. C. is one of the proudest reflections of the moment. We can number quite a few young men who have gone out from this college to fill the chairs of other and justly celebrated institutions of the kind, and

# REGISTERED SEED

## THE FINEST STOCKS KNOWN

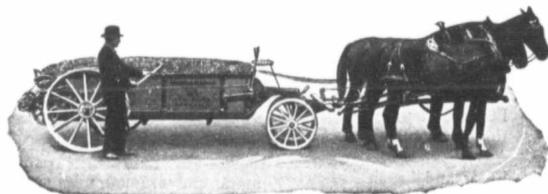
- "LION" RED CLOVER
- "LION" ALFALFA
- "LION" ALSIKE
- "LION" SWEET CLOVER
- "LION" TIMOTHY
- "LION" WESTERN RYE GRASS
- "PRIZE MAMMOTH" MAIZE
- "PERFECTION" SWEET
- "ROYAL GIANT" SUGAR BEET
- DWARF ESSEX RAPE
- MILLETS
- REGISTERED MARQUIS WHEAT
- REGISTERED RED FIFE WHEAT
- REGISTERED VICTORY OATS
- REGISTERED BANNER OATS
- REGISTERED ABUNDANCE OATS
- NEW GREAT LIZO OATS
- FLAX PEDIGREE No. 57
- FLAX PEDIGREE No. 154
- SHEPHERD BARLEY
- SPRING RYE
- SPELT

EVERYTHING IN FIELD AND GARDEN SEEDS  
Write To-day for Catalogue



**STEELE, BRIGGS SEED CO. Limited**  
WINNIPEG, CANADA

You saw this advertisement in this magazine. Don't forget to say so when writing.



## A Real Spreader— Not Merely an Unloader.

The Massey-Harris No. 4 Low-Down Spreader spreads the load uniformly to a width of seven feet although the Bed measures only half that width. The Divided Upper Beater is the explanation.

### Low-Down—Easy to Load.

The Low-Down Feature will be appreciated by the man who is using this Spreader.

### Light Draft—Easy on the Horses.

The simple, direct drive—the small size of the Beaters—the taper shape of the Bed—the Broad-Faced Wheels—the careful fitting of all parts—these combine to secure light draft.

*Descriptive Booklet tells all about its many other Points of Superiority.*

**Massey-Harris Co., Limited.**  
Head Offices—Toronto, Canada.

— Canadian Branches at —  
Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current,  
Yorkton, Calgary, Edmonton.  
E. G. Prior & Co., Ltd., Victoria, Vancouver, Kamloops.  
— Agencies Everywhere —

You saw this advertisement in this magazine. Don't forget to say so when writing.



S. Larcombe, Birtle, winner of grand champion "Marquis" Wheat at the Manitoba Agricultural College Seed Show with a score of 99 points

THE ART OF BLACKSMITHING AS APPLIED TO THE TRADE

No. 1 (First of a Series of 12 Articles by an Expert Blacksmith)

In preparing a series of articles on blacksmithing as applied to the farm we thought it well to give a general idea how iron and steel are manufactured, as it materially helps in forming these into the forms desired by the operator. Also a general description of grey iron, malleable iron and steel castings. During the last eight or ten years, power farming has become more general than in the previous years. With power farming came the additional excuse, also shortage of farm help, so much so that at the present time the vital question of the farmer is how to get the best results out of his equipment. As we see it, would suggest instead of taking the farm to the blacksmith shop, bring the smith shop to the farm. With this idea in view we will submit the following articles, which will give a general insight into this trade and will appear in the following order:

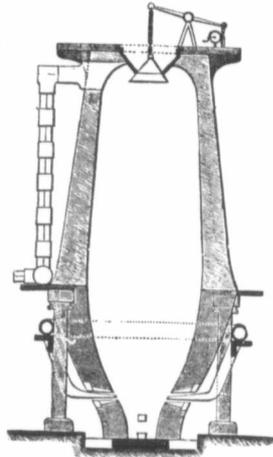
- 1. Manufacturing of iron.
2. Manufacturing of steel.
3. Forge and tools.
4. Forge and fires.
5. Anvil and tools.
6. Floor and bench tools.
7. Iron and steel forging.
8. Welding.
9. Tool dressing.
10. Hardening and tempering.
11. Blacksmithing outfit suitable for the farm.
12. Grey iron, malleable iron, steel castings.

Manufacture of Iron—Making Cast Iron

Iron Ore—Any iron bearing mineral from which the metal can be castrated at a profit is iron ore. Iron is never found chemically pure in nature. Chemically pure iron is soft and ductile, has a high melting point and can be forged and welded. Rich ores of iron contain from 60 to 68 per cent of metallic iron, lean ores 30 to 40 per cent, very few furnaces using less than 50 per cent of iron. The impurities which consist of oxygen, silicon, phosphorous, lime, sulphur, magnesia, aluminum, manganese, titanium, etc., occur in small amounts.

Blast Furnaces—Iron is reduced from its ores by fusing them together with lime in a blast furnace. The lime acts as a flux and is obtained by the use of lime stone and marble. A blast furnace is usually an iron shell lined with some refractory substance, such as fire bricks or fire clay. Into this furnace are placed layers of fuel, flux and iron ore, the fuel fired and the whole mass raised to a high temperature by means

of an air blast to hasten the combustion. The blast furnace is continuous in its operation. The ore flux and fuel are charged into the top of the furnace, and the ore and flux are melted by the intense heat and toppled out at the bottom. The amounts of fuel, lime-



Section of Blast Furnace

stone and ore must be carefully calculated in order that the ore may be properly reduced. The furnace is so operated that the impurities in the fuel and ore may combine with the flux in the form of slag which is lighter than the iron and floats on its surface. The slag is drawn from the furnace when necessary from a hole in the side above the hearth or bottom, while the iron is tapped from a hole at the front and bottom of the furnace and flows into iron or sand moulds where it cools. This form of cast iron obtained by this process is called pig iron.

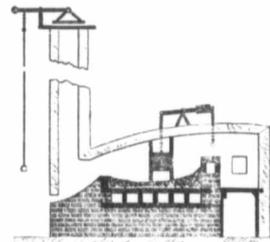
Composition of Cast Iron—The best and purest grades of cast iron are made in blast furnaces using charcoal for fuel. This is due to the fact that charcoal does not contain sulphur, while coal and coke does, and also because the ash is of such a nature that the impurities pass into the slag rather than into the iron. Cast iron as made by blast furnaces generally contain from 92 to 96 per cent of metallic iron, the other 4 to 8 per cent consists chiefly of impurities in the form of carbon, silicon, manganese, phosphorus and sulphur, from 2 to 6 per cent being carbon. While it is true that the five elements mentioned are impurities in iron the first four are really the elements that make cast iron of commercial value. Cast iron has a granular or crystalline structure, and is hard and brittle.

It can be cast in almost any desired shape, but cannot be forged or drawn into wire.

Making of Wrought Iron

Nature and Composition—Wrought iron has a fibrous structure and can be forged and welded. It is practically free from carbon, silicon and other elements contained in cast iron. It may be made direct from the ore, but the greater part is made from cast iron by the removal of its carbon, silicon and other impurities by the puddling process.

Hand Puddling—In the manufacture of wrought iron by hand puddling, the cast iron obtained from the blast furnace is melted on the hearth of an open hearth furnace, which is usually similar to that illustrated below. The hearth is generally made of cast iron plates carried on brick walls or on iron supports. It is usually about 5 or 6 feet in length and 4 feet in width, opposite the charging door and is lined with a refractory substance, the roof being a fire brick arch. The heat is obtained ordinarily from a bituminous coal fire in the fire placed to one side of the hearth. The area of the grate varies from 6 to 10 square feet or more depending on the character of the iron, the draft and the fuel. Between the grate and the hearth is a fire brick wall called a bridge



Puddling Furnace

wall, that extends across the furnace and is of sufficient height to keep the fuel from getting over in the hearth and, the molten iron from running over on the fire. In many cases the bottom and sides of the furnace are hollow, and have water circulating through them to keep them cool. Another bridge wall called the alter prevents the metal from overflowing into the flue leading to the chimney. In the middle of the side there is placed a sliding door with an opening large enough to admit the puddler's rabble. The rabble is a long iron bar with which the melting charge of metal and slag is stirred by the workman. The furnace is charged with 500

pounds of pig iron, which is carefully placed on the lid of the furnace or is broken up and piled around the sides. When the charge is melted the puddler stirs the fluid mass with his rabble, while his assistant changes the draft and the fire to suit the different stages of the process. The impurities of the iron are taken up by the molten flux or burned out. In about an hour pasty masses of metal begin to appear, which the puddler works into spongy balls weighing from 60 to 80 pounds each. These are well worked at a high temperature to get rid of the slag, and finally removed from the furnace and hammered or squeezed into the form called a bloom. The bloom is then taken to the rolling mill and rolled into various commercial forms.

Mechanical Puddling—In the various puddling machines in use the flame is led from the fire box to a hearth of varying form and construction, moved by machinery. In some forms this hearth is barrel shaped and turns on a horizontal axis, in other forms it is circular and is so arranged that it may be mounted on a vertical shaft and rotated, but in one form the hearth starts at an angle from 10 to 15 degrees from horizontal. In most cases the metal is further stirred or mixed by broad bladed rables operated by the workman or by machinery. The advantages claimed for these machines are that greater masses of metal may be handled, and that there is greater uniformities of the product together with a saving of the fuel and expense. Hand puddling is also injurious to the health of the workman.

Effects of Reheating Wrought Iron—It has been found by experimenting that the straight of the puddled iron as rolled into the bar is increased each time it is heated and worked up to about the sixth working. Each heating and working beyond this point decreases the strength until at about the twelfth it will be as weak or weaker than after the first rolling from the puddled bar. Careless heating may, however, injure the iron in one or two heats. This gives us a fair idea how wrought or commercial iron is made. The next series will explain how steel is manufactured.

Lucky Hubby

Mrs. Green: "Do you eve. flat ter your husband?" Mrs. Wyse: "Yes, I sometimes ask his advice about things."

# IT IS ALL YOUR FAULT

If you have not got the best Threshing Machine and Traction Engine, it is all your fault. For we have it for you.

There are scores of reasons why the Red River Special Threshing Outfit is the best and most profitable for you to purchase. There are so many of them that they cannot be enumerated in this advertisement.

The best way for you to get a list of them is to write to Nichols & Shepard Company, Battle Creek, Michigan, or to any of their branch houses for their latest catalogue. It is free and will be promptly sent to you upon request.

It describes in detail the principles upon which the great Red River Special works to BEAT all the grain out of the straw.

It tells about the Big Cylinder and The Man Behind the Gun.

It describes the Beating Shakers, the Graduated Adjustable Steel Chaffer, the Over-Blast Mill and Large Sieves.

It tells how and why it Saves the Farmers' Thresh Bill.

It shows how it makes most money for the Thresherman.

In fact, it tells wherein it is the best thresher.

Now if you have not got one, it is your fault. You can buy it just as reasonably as you buy others.

You cannot afford to start out this coming season with an incomplete threshing outfit, nor an old worn out one.

Get a Red River Special and be in shape to get a long run and the best jobs.

It is your fault if you are not equipped with the very best.  
Send for Catalogue.

**NICHOLS & SHEPARD CO.**

*(In Continuous Business Since 1848)*

Builders Exclusively of

**THRESHING MACHINERY**

Red River Special Threshers, Feeders, Wind Stackers, Steam and Oil-Gas Traction Engines

**BATTLE CREEK, MICH.**

BRANCH HOUSES (With Full Stock of Repairs) At

WINNIPEG, MANITOBA

REGINA, SASKATCHEWAN

H. P. NORTON COMPANY, CALGARY, ALBERTA

**Farmers' Week at the M. A. C.**

Continued from page 39

who have distinguished themselves by sheer ability and their moral backbone.

Professor Harrison went out into the world for a time to get his seasoning in the serious things of the field and had the very best opportunity a young agronomist

sor Bracken referred to as out-classing anything in wheat sample he had ever seen.

Mr. Larcombe's score card was probably unique. It gave him 99 points and the bushel weight was 67 3/4 lbs. When it is recalled that the sample with which Mr. Seager Wheeler secured the world's championship was only given 96 1/2 points it will be seen



Students from the Virden, Boissevain and Morden Short Courses in competition at the M.A.C. during Farmers' Week. These students competed in the judging of weed plants, weed seeds, seed grain and all classes of live stock.

can have on this continent under that wizard of the field—Angus Mackay of Indian Head. His alma mater again owns him and every fresh opportunity but serves to confirm the wisdom of his appointment to the place he occupies on the college staff.

But the "man who broke the bank" that held the prize money in this great event was one who had long ago stepped out into the front rank of men who can and who will do things. We refer to Mr. S. Larcombe, of Birtle, who captured more than half of the prizes at the disposal of his dis-

where Mr. Larcombe's Birtle variety stands. This throws into strong relief what Manitoba can do—what any intelligent man in it may do if he will but take the pains, and no one will more whole heartedly acclaim the genius and success of this new world's champion than will Mr. Wheeler of Rosthern, Saskatchewan, for we know he is built that way.

One of the noteworthy features of Mr. Larcombe's wheat was that it stood in the field throughout the rains of last October, but he had his stooks carefully "capped."



Students representing Manitoba Agricultural High School engaged in seed judging competition at M.A.C. during Farmers' Week. Three of these boys came from Roblin, three from Stonewall and three from Holland.

trict (the Northwestern) while he topped everything by securing the sweepstakes grand champion for his exhibit of "Marquis" wheat—the sample which Profes-

It is also indicative of the man's thoughtfulness and painstaking care that he had all these capping sheaves removed and threshed separately.

More will no doubt be heard of this ninety-nine-per-cent wheat. The rules called for a half-bushel sample with another half-bushel held in reserve by the exhibitor to forward to the government if required. Mr. Larcombe is sending forward his reserve half-bushel which will be shown at forthcoming American and Eastern Canadian shows.

**Some Doubt**

"What are you going to run—the mile or the two-mile?"

"I don't know. I can tell you better at the end of the mile."

**CASH For Raw Furs**

Highest Prices paid—no commission deducted—I pay all express or mail charges, and mail you a bank draft same day your shipment is received. Just tag your furs and ship to me to-day, or drop a line and I will send you tags and price list.

**E. M. Smith**  
(Fur Dealer)  
74 Sherbrooke Street  
WINNIPEG, MAN.

**Your Name Wanted!**

Send it to us on Coupon and

**Get Our 1916 Catalog**

Showing

**Implements and Hardware Supplies  
Plow Shares, etc.**

**H. R. HAWKEY & CO.**

Mail Order Specialists

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CUT THIS COUPON AND MAIL IT TO - - -

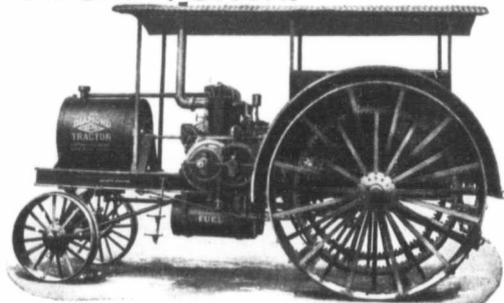
H. R. HAWKEY & CO., WINNIPEG, MAN., and we will Mail you Free our 1916 Catalog

Name .....

P.O. ....

..... C.T.F.

**FOR SALE, CHEAP**



Brand new 40-70 Diamond Gas Tractor, has never been run. List price \$4,000—will accept \$3,200 with reasonable secured terms. Cash \$3,000. Immediate delivery.

Also Steam Plowing and Threshing outfit, complete as follows, used only one season:

- 25 H.P. S. & M. Simple Cylinder Rear Mount Alberta Boiler Traction Engine, with Mechanical Pump and Heater, equipped with Plowing Attachment, syphon and Hose. List Price..... \$3,230.00
- Two Water Tanks ..... 80.00
- Two Pumps and Hose ..... 50.00
- Great West separator, latest style, 16 Bar Cylinder equipped with No. 2 S. & M. Feeder, Hartley Grain Register, S. & M. Blower and extra set Balata Belts ..... 1,500.00
- 150 feet 8-inch 5-ply Sawyer Canvas Belt..... \$4,935.00

The government specifications for Alberta and Saskatchewan on this boiler will be supplied on request; 175 lbs. allowed.

This outfit has done the following work:  
Engine—Brush Broke ..... 500 acres  
Disked ..... 500 acres  
Cross Plowed ..... 300 acres

Separator Threshed—53,000 bushels of all kinds of grain. Price as it stands ..... \$3,500.00

One Verity 8-bottom Engine Gang, equipped with cross-bottom. Has only plowed 400 acres. List price \$700.00. Our price..... \$ 500.00

Two John Deere 24-inch Brush Breakers with extra shears. In good repair. Have only plowed 500 acres. List price \$200.00 each. Our price, each ..... \$ 150.00

One Emerson Double Disc Harrow, 10 ft. wide with engine hitch; used two years. Cost price \$180.00. Our price..... \$ 100.00

One John Deere Double Disc Harrow, 10 ft. wide with engine hitch; used one year. Cost price \$180.00. Our price..... \$ 100.00

The above machinery is all in first class condition and of the latest types. Will serve its purpose as well as new goods. All of this machinery belongs to W. D. Staples, Dominion Grain Commissioner, who has been obliged to discontinue his farming operations and lease his farm on account of his son, who was manager, being on active service at the front.

These goods are snaps in every case and will not last long at the prices we quote. If at all interested, you had better get in line at once.

Address: W., Box 3164, WINNIPEG, Canada

**Family Group Photos a Specialty**

AT

**STEELE & CO., LTD.**

Main St. and Bannerman Ave.

WINNIPEG

**Of Interest to Manitoba Women: Short Course in Home Economics Training**

One of the most popular lines of practical education offered in Western Canada in recent years has been the teaching given at the short course schools under the direction of the Manitoba Agricultural College. In the short course schools in different parts of the province during the past two or three months the attendance in each case constantly increased as the course progressed, and in a number of cases there was a demand at the conclusion of the course for its extension.

Women who are interested in home economics training will be glad to learn that the Manitoba Agricultural College is giving a short course in home economics, extending from April 10th to June 29th.

An advertising announcement of this course appears elsewhere in this issue, and full particulars may be had by writing President Reynolds, Manitoba Agricultural College, Winnipeg. See page 57.

**Patmore Products**

The finest soil and the most salubrious climate in the world will not produce a good turnip unless the makings of a good turnip are in the seed when it is handed over to the soil.



Here is a sample of what first rate seed will do in Manitoba. In the caes of the cartload of Swedes shown in the first picture the grower writes to the seedsmen (Patmore Nursery Company of Brandon) from whom he purchased his seeds:

"Your 'Hall's Westery' Swedes, sown June 3rd, 1915, in drills two feet apart and singled out to 12 inches between the plants. The whole crop was uniform in size and was estimated at 1800 bushels per acre. The wagon box full in

Order now from the Attractive Prices given below



We Erect Fencing and Supply Posts

**FENCES IN 20 ROD AND 40 ROD ROLLS**

No. of Wires	Height in Inches	Inches between Stays	Safe Lock Fences Made of All No. 9 Hard Steel Wire Spacings	PRICE PER ROD FREIGHT PAID TO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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The Price will be the same to all other stations having the same freight rate from Port Arthur as those listed. A correspondingly low price to all other stations.

**NOTE**

These are only a few of the styles we carry in stock. Drop us a card for complete list with prices freight paid right to your station.

**GUARANTEE**

We guarantee SAFE LOCK FENCE to be made of the Best Hard Steel Wire, with the best galvanizing, and the strongest lock of any fence you have ever seen. If not convinced on arrival of goods return them to us and we will refund your money.

All Fences made of full Government gauge wire

**TERMS:** All Small Orders and orders for Stations where there is no Agent, must be accompanied by Cash. Carload orders to Stations where there is an Agent, to be accompanied by \$100.00 Cash and balance subject to Sight Draft attached to Bill of Lading.

**CO-OPERATE:** Farmers should get together and buy in car lots to save money. We offer a special price on posts to Farmers' Organizations so join with your local Grain Growers' Association and buy your fence and posts in carloads. It is worth while.

**ADDRESS**

**The Safe-Lock Fence Company  
600 5th Street, Brandon, Canada**

the photo is the produce of two drills 180 ft. long."

In the second picture we have a demonstration of alfalfa success from a good start. The grower is proud to be photographed atop of



his alfalfa patch which has just made a fair start from Patmore's "Montana" seed. This was sown on breaking without inoculation of the soil on June 3rd, 1915. The photo was taken on 17th of the following month.

**The Empire Loan Company's Annual Report**

The twelfth annual report of this financial corporation is another striking testimony to the stability of Canadian finance.

If the profits are somewhat less than in the previous year, this has been due to the careful husbanding of resources and reducing the borrowings of the company. Its assets now amount to \$1,019,966, and the net profits for the year are \$57,459 as compared with \$66,182 in 1914. This slight falling off is explained above, but it is not surprising under the strenuous war times covering the operations of the whole year. Indeed any marked increase under the circumstances was never to be looked for.

There is however the very satisfactory record that in spite of everything not only was an 8 per

cent dividend declared, but the healthy sum of \$12,050 is being carried forward to the credit of profit and loss and is available for use for any unforeseen conditions that may arise during the year.

## Lump Jaw

The first remedy to cure Lump Jaw was

**Fleming's Lump Jaw Cure**

and it remains to-day the standard treatment, with years of success back of it, known to be a cure and guaranteed to cure. Don't experiment with substitutes or imitations. Use it, no matter how old or bad the case or what else you may have tried - your money back if Fleming's Lump Jaw Cure ever fails. Our fair plan of selling, together with exhaustive information on Lump Jaw and its treatment, is given in

**Fleming's Vest-Pocket Veterinary Adviser**

Most complete veterinary book ever printed to be given away. Durably bound, indexed and illustrated. Write us for a free copy.

**FLEMING BROS., Chemists**  
Church Street - Toronto, Ont.

Name this magazine when writing advertisers

**RIDER AGENTS WANTED**

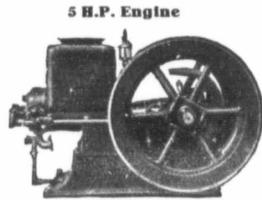
To every locality to visit and exhibit a 1916 Hyslop Bicycle with latest improvements.



Name this magazine when writing advertisers

# Complete Crushing Outfits

5 H.P. Engine, with Crusher and Rubber Belt, \$161.00 7½ H.P. Engine, with Crusher and Rubber Belt, \$233.00



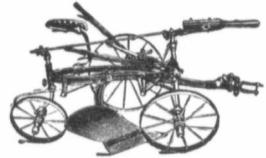
5 H.P. Engine

**The Engine You Really Need. Price \$195.00 7½ H.P.**

This Engine will use less fuel than any engine of the same rating, and is guaranteed to develop more horse power than any engine of the same or nearly the same rating. Sold anywhere. Webster Magneto, extra price, \$12.50

**BETTER ENGINES ARE NOT MADE**

**Celebrated Eclipse Plow**



**Celebrated Eclipse Plow.** 1915 Prize-Winner at Plowing Matches.

12 inch Gang ..... \$65.00 14 inch Gang ..... \$67.00

**Stover Grinders**

**LOW DOWN** Crushes every kind of seed. **WELL BUILT** Fine or coarse plates.

**Grinder Plates**

7 inch, per pair \$1.50  
8 inch, per pair \$1.65  
10 inch, per pair \$2.00  
12 inch, per pair \$2.25



**Saw Blades**  
From \$5.50 up

**Harrow Teeth**

Guaranteed Quality. 5c

**Channel Steel Harrows**

A very popular high grade harrow at a very low price.



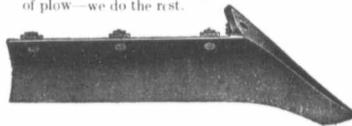
60 tooth, 3 section, 9 ft. \$13.50  
100 tooth, 5 section, 15 ft. \$17.50  
120 tooth, 6 section, 18 ft. \$21.50

**Guaranteed Plow Shares**

Prices subject to change without notice. If money is sent in good faith goods will be shipped.

12 inch Shares each, \$1.80 15 inch Shares each, \$2.25  
13 inch Shares each, \$2.00 16 inch Shares each, \$2.25  
14 inch Shares each, \$2.00 18 inch Shares each, \$2.50

Give number and letters stamped on share—and name of plow—we do the rest.

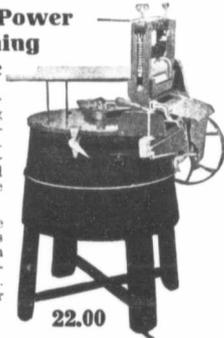


**WE HANDLE**—Cordwood Saw Frames, \$18.00; Power Straw Cutters, \$35.00; Wheel Barrows; Pulpers; Pump Jacks, \$5.50 and \$7.50; Dry Cells; 35c each.

**Stover Power Washing Machine**

Our complete Power Washing Outfit, consisting of 1½ H.P. Engine, Washing Machine and Belt. Complete at \$60.50.

All gears are covered. Has safety release on wringer. Reversible. Wringer. Pure Rubber Rolls.



22.00

**CLEAN YOUR GRAIN WITH Canadian Stover 1½ H.P. Engine Price - \$38.50**

## THE CANADIAN STOVER GASOLINE ENGINE CO. Ltd.

BRANDON, Man.

### The Isle of Pines

Since writing in our January issue something of what this sunny little Isle in the South Atlantic has to offer in climate, soil and social amenities to the toil-stained home seeker of the prairie, we are happy to know that a large number of our readers have been pursuing the matter, and that some of them are likely to seek a home in some alcove of its rich fruitlands.

Its productive wealth covers so many things that even in a series of articles it is scarcely possible to do justice to them and to the economic possibilities of the Island apart from its marvellous advantages as a health resort. Bananas, tobacco, coffee, oranges, lemons, limes and grape fruit are only a few of the things that grow here with no greater care and with a fraction of the labor that is necessary to raise wheat in Manitoba.

#### Pineapples

Isle of Pines pineapples are equalled nowhere else in size and flavor. The fruit averages six to twelve pounds and has attained to as high as 27 pounds. It has a thinner rind than the

other Southern product and the eyes are not as deep. The pulp is exceptionally juicy and highly flavored. Because of its superior qualities, these pineapples are served at the best hotels and restaurants in New York City.

When one considers that the Isle of Pines pineapple retails at from 50 to 75 cents each, with a big demand at these prices, it is plainly seen that their culture is a profitable one.

The pineapple grower on the Isle of Pines reaches the New York and Chicago markets as cheaply as the Florida planter—and gets his fruit to market ahead of the Florida grower on account of unexcelled shipping facilities from the big dock at Los Indios. The Isle of Pines pineapple develops far earlier—and requires no artificial cultivation.

Pineapples can be planted at any time of the year. There is no dormant season. The plants usually bear in 18 months, sometimes earlier, and bear for five years, when replanting becomes necessary. There are 7,000 plants to the acre and the average yield is 320 crates. A conservative estimate is a profit of \$1 per crate—the profit during the past two years has been double this, owing to the big demand in the States for these pineapples.

**Twin City Oil Tractors**

**4 Sizes Covering Range Of Work in Which Tractors Are Economical**

## The Twin City "15"

**The Smallest Tractor You Can Afford to Buy**

**YOU** know light, cheaply constructed farm machinery will not stand up. It constantly causes repair bills and breaks down just when you need it most. The Twin City "15" weighs 7650 lbs.; has four-cylinder, vertical motor of most efficient type; burns kerosene, distillate or gasoline; has two speeds and automobile control. It will handle four 14 in. plows under ordinary conditions, run 24 in. separator and all other stationary work. It is large enough to do the work required on most farms with considerable reserve power to spare.

Do not buy a Tractor until you see the Twin City. You cannot afford to experiment this year. Send for our illustrated catalogue at once, descriptive of our four sizes of Oil Tractors.

**MINNEAPOLIS STEEL AND MACHINERY COMPANY**  
923 Logan Ave. West, WINNPEG, Man.

Twin City "40"  
Twin City "45"  
Twin City "25"  
Twin City "15"

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**"Selling to Farmers All Over the World."**

Interview with Mr. H. V. Stewart, Manager of The International Stock Food Co., Limited, Toronto

By J. L. MIDDLETON

If you have ever visited Mr. Stewart at his office in Toronto you have no doubt seen, with great interest, the actual shoes worn by Dan Patch, 1.55, the greatest harness horse the world has ever seen.

Learning that I was from the "Thresherman," Mr. Stewart welcomed me to his private office and gave me information about his company. That astonished me, and it will no doubt come as a surprise to the reader to learn just what an important factor the International Stock Food Co. is amongst farmers all over the world.

We spoke first of Dan Patch and I remarked that Dan's picture was to be found in nearly every Western farmhouse. "Why," said Mr. Stewart, "not only in the West but in the East you will find that picture wherever you go."

You will find Dan Patch's picture in farms throughout the length and breadth of America, throughout the British Isles, and I venture to say in many a ruined farmhouse in Belgium and France a copy of that picture still hangs on the wall. We have had millions of the picture made in order to supply people requesting a copy."

"Are International Stock preparations used, then, outside America?" I asked.

"Most assuredly," said Mr. Stewart. "At the present time we are filling orders for the West Indies, South Africa, New Zealand and also for the Yukon. See, here is a letter from a veterinarian with the forces in Belgium. And, besides, South America is one of our best markets."

"Out in Western Canada you have farmers from all parts of the world—the United States, England, Scotland and Ireland, Scandinavians, etc.—strangers in a new country, but I will venture to say that they find one thing that is familiar to them and that is the "International." 3 feeds for one cent, package.

"Mr. M. W. Savage bought Dan Patch, 1.55, in 1902, and commenced to give him "International Stock Food Tonic" every day. During the next six years Dan broke the world's record 14 times and paced 73 miles over all kinds of tracks, averaging 1.59½—ample proof that International Stock Food Tonic gave him more strength, endurance, speed, pure blood and helped to make him the world's Champion Harness Horse.

"Down in our 700-acre Stock



Double Hip Braces Lock Each Separate Rafter

Each Separate Rafter Locked at Ridge with Double Steel Braces

Post Braces Set in Snug to Every Post

**At Last—A Barn of Definite Strength**

AT LAST—a barn that brings you unyielding strength just at the points you need it most. Naturally, you look for strength in steel barn construction. There are other essentials of course. But just as you need four wheels to a cart, so you want *definite* strength at every point where strain is greatest.

**PEDLAR'S STEEL BARN**

are making history in the Canadian farming world. They have set aside, for all time, the day of heavy wooden beams and posts. They have made unnecessary the loss of space from steel posts jutting far out from the walls, or projecting to the hips. They bend to the farmer of to-day the barn of to-morrow. They bring him ALL the room—ALL the strength—ALL the protection and convenience the science of steel construction has evolved.

**Inherited Security**  
The same famous "Pedlar" coverings that have provided such protection to the wooden frame barns in the past are now found in Pedlar's Steel Barn. "Wardle Patent" Barn. "George" Shingles, in big, generous size, 24 in. x 24 in.; or if preferred, 26 gauge "Perfect" corrugated, galvanized iron roofing is supplied. Once the 26 gauge corrugated iron is placed on the wall frame, not one inch of wood appears from the outside. Pedlar's Steel Barn—Wardle Patent—Barn is absolutely LIGHTNING-PROOF, FIRE-PROOF, RAIN-PROOF, RUST-PROOF, and WIND-PROOF.

**PEDLAR'S Steel Brace**  
"Wardle Patent"  
See for yourself the clear, open space and greater roominess in all parts of the Pedlar Barn, made possible by Pedlar's Steel Brace "Wardle Patent"—not a new idea, but a brace that has proved its value through the test of ten years' usage. Notice how it sets up close to every post, entirely out of the way.

**Surprises Await You**  
Once you see Pedlar's Steel Brace "Wardle Patent" Barn, surprises await you at every turn. Roof and gable windows, metal framed and glazed with wired glass, reflect abundance of light to all parts of the barn. "Pedlar's Superior" Barn ventilators supply ample ventilation and are proof against the nuisance of birds. Extra ventilation when threshing is available through the windows, which are made to open and close. Eave-trough, conductor pipe and complete accessories properly drain all water from the roof. Eave and Gable corners make an airtight covering at these vulnerable points.

**Double Hip and Ridge Braces**  
Lock Each Separate Rafter  
Safety in steel construction rests on a positive hold at the ridge and hip. So at these points in the Pedlar Barn you will find a double set of steel braces on each separate rafter. Think of it! Each separate rafter. These powerful braces, placed right at the points of strain, mean as much to you as a solid steel beam from wall to ridge—and without excessive cost. No wonder the Pedlar Barn is stronger! No wonder you can expect to find it as firm and rigid fifty years from now as it is to-day!

**Everything Complete**  
Everything comes to you complete to the smallest detail ready to set in and erect in a few short days. Would you like to know more about Pedlar's Steel Barn "Wardle Patent" Barn? Wouldn't you like to see plans and blue prints of just the size of Pedlar Barn best suited to your own farm? We will gladly send you without obligation whatever complete plans and working drawings without delay.

**An Advantage you Have Never Been Offered Before**  
An advantage found only in Pedlar's Steel Barn "Wardle Patent" Barn is the fact that you can operate your hayrack in the ridge or in either of the hips. An exclusive convenience that points still further to the scientific thoughtfulness called forth in Pedlar construction.

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Send me, without delay, Plans, Working Drawings and Cost Complete, of a Pedlar Steel Barn "Wardle Patent" Barn. It is understood that I will put me under no obligation to you whatever.

Size of barn \_\_\_\_\_ Name \_\_\_\_\_  
x Address \_\_\_\_\_  
Height of post \_\_\_\_\_ ft. \_\_\_\_\_

THE PEDLAR PEOPLE, Limited

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80 LOMBARD ST., WINNIPEG

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Farm we feed International Stock Food Tonic to the two hundred brood mares, colts, racers and driving horses, every day. In this way we know exactly what the Tonic is accomplishing. Every day, too, we receive thousands of letters from farmers testifying to its worth. Here are two letters postmarked Saskatchewan in this batch of mail. Let's open them and see what they say. The first is from William Johnson, Alaska, Sask. He writes: 'I use International Stock Food Tonic whenever an animal gets out of condition, as it tones up the system and improves the digestion and starts them in the right trail

again.' Now, the other one—from E. Cotterell, Aneroid, Sask.: 'I have used International Stock Food Tonic for 5 years now. It is a fine preparation for all animals, especially for overworked horses—to build them up again. Besides which it is so reasonable to purchaser.'

"And how has the war affected your prices?" I asked.

"We have not raised our prices at all. We always keep on hand enormous stocks of all materials used and these materials have doubled and trebled in value since the war started. We could, if we desired, make big immediate profits by selling these stocks;

then we would have to raise our prices for International Stock Food Tonic and our other preparations. But we are working with an eye to the future. It is truer to-day than it ever was that if we gave you the formula for our preparations you could not get them made up at a drug store for anything like our prices, because we buy raw materials in such huge bulk and so get bottom prices.

"You can imagine the size of our organization," said Mr. Stewart, as I rose to leave. "Do you realize that we have a local dealer in practically every place where the Dominion of Canada has a post office?"

# A WOMAN'S TALK TO WOMEN

—By—  
LILLIAN BEYNON THOMAS



Mrs. A. TOOTH, M.P.  
First woman appointed in Manitoba as  
director of the Grain Growers' Association

## MANITOBA WOMEN VOTERS

IT WAS a wonderful sight down at the Manitoba Parliament buildings, when the women of Manitoba were enfranchised. The galleries were crowded—chiefly with women, all eager and interested. The suffrage colors, purple and yellow, were to be seen everywhere. "Votes for Women" banners were much in evidence, and a strong feeling of suppressed excitement was felt on the floor of the house and through the galleries. A great step in democracy was about to be made, and everyone felt the solemnity of the occasion.

On the floor of the house most of the members were in their places. In the absence of the Premier, Hon. Thos. H. Johnston was to move that the bill enfranchising the women be read a third time, and passed. But before the house was called to order, and the mace placed on the table, the speaker sent word that the executive of the Political Equality League of Manitoba was to be given seats on the floor of the house. This was an honor never before accorded to women, and only to distinguished men. It was a graceful tribute to the women, prompted by kindly feeling, and the women appreciated it at its full value. The women filed in silently and took their places at the back of the chamber, the mace was placed on the table, and the session, the most memorable in the history of the province, was begun.

The routine business was hurried through, so that the women should not be kept waiting, and Bill No. 4 was read by Mr. Johnston. It is not customary to have long speeches on the third reading of a bill, but with so much feeling filling the house, everyone wanted to speak. Mr. Johnston, who is not only a suffragist, but a feminist, made an excellent speech, one that showed his thorough sympathy with the measure, and with all the work that women are trying to do to improve conditions.

The speaker asked if the house was ready for the question. There was a second of tense silence, then Mr. McPherson, of Portage la Prairie, was on his feet, begging the women not to go to his constituency, when they wanted to run for Parliament, but hinting that Virden would be a good place to start. Scarcely had he sat down when Mr. Wilton, of Assiniboia was on his feet, also suggesting that the women would be wise to go to Virden for a constituency when they wished to go into Parliament. Just why the member for Virden should

be chosen, as the one who should be opposed by a woman, the women did not know, but some of them at least made up their minds that such a good suffragist as Dr. Clingan would not be the first one opposed.

Following these speeches, Mr. McConnell, of Hamiota, and Mr. Baskerville, of Emerson, made impassioned speeches in favor of woman's suffrage. These men carried the whole audience with them in their enthusiasm, so that everyone was laughing and ready to shout on the least provocation. It was an exciting time and the excitement did not grow less while Mr. Dixon and Mr. August spoke briefly in favor of the women, and Mr. Hamelin spoke in opposition, but said he would not oppose the bill.

Again came the speaker's voice: "Are you ready for the question?"

A deep silence, a solemn silence, fell on the whole assembly as the speaker put the question. A deep chorus of assent rang through the chamber, and not a sound of dissent. "In my opinion the Ayes have it."

The bill was passed, the women were people, persons, voters. It seemed too good to be true. From the gallery rose a clear, sweet voice, singing "O Canada," and soon it was joined by a great chorus of voices, all filled with emotion. Quickly following that came "For they are jolly good fellows." As soon as those in the galleries sang through that rollicking chorus, and gave three cheers, the members on the floor of the house, who were all on their feet, shouted, "The Ladies," and in a splendid chorus, sang back:

"For they are jolly good fellows," and gave three rousing cheers and a tiger. A voice in the history of Manitoba will be feeling between the men and the women of the province be better than it was that day, and on the Tuesday night following, when the women gave a banquet in honor of the legislature that had passed this remarkable piece of legislation, the first province in Canada to take this great step toward democracy.

## Women's Party Leagues

There are some women in Manitoba who never took a prominent part in the suffrage campaign, and some who opposed it, who are now anxious to organize women's party leagues. Their idea seems to be to organize the women into Liberal and Conservative Associations, along the same lines as the men's organizations. In this object the suffragists of the province are not interested. The dream of the suffragists is that the women on the whole will remain independent and will vote for the party that will bring in the legislation that they desire. Of course, there will be women with strong party affiliations, women who will refuse to believe that their party will do anything wrong, but the addition of such women to the electorate is not of great value to the country. It is the vote that cannot be counted by either party, before the election, that swings the election. Of that vote, those who would prostitute politics to their own ends, have a wholesome fear.

But of one thing the suffragists of Manitoba are sure, and that is, that the great majority of the women who worked for the franchise will not join party leagues of any kind. The Political Equality League is going to work harder than ever as an independent league, to educate the voters, and promote important legislation. With the present laws on our statute books, it seems incredible that the most party bound woman could think of joining any party organization. The first year as voters must be spent in getting the laws that bear so heavily on women and children changed. Let us remain free to vote for those who will give advanced legislation. What does

it matter to a wife who has been turned out penniless after thirty or forty years of hard work whether the law is changed by a Liberal or a Conservative government? What does it matter to a mother who has been robbed of her children whether we get an equal guardianship law from a Liberal or a Conservative government?

The Political Equality League is holding a convention February 16-17, and it is hoped to change the name of the league to Political Educational League, or some good name, showing that the objects of the league will be education and legislation. The league will be independent and ready to vote for the party that is ready to pass the laws it desires. On the enfranchised women of Manitoba there rests a great responsibility. We must do our best for the country, and our sisters in other countries may point to our deeds as an argument why they should have the franchise.

We hope that the women of Alberta and of Saskatchewan, when they are enfranchised, will join us, in working for better legislation regardless of old party affiliations. There is one thing, our grandmothers never voted, so we cannot follow suit.

## Widows' Pensions

A law that will be of interest to many women on the prairie is now being introduced into the Manitoba legislature. It is a law providing pensions for widows who have children they are not able to support. The theory is, that a child is better kept in the home than in an institution, and strange to say it has been found that it is cheaper to keep a child in its home than in an institution. In order that the children may be properly cared for by the mother, a grant is made to the widow, so much for each child she has to support. The grant is supposed to be enough to enable the mother to keep her home and her family together until the children are able to support themselves.

We have all heard for years of the value of children to the state, but this is the first recognition of that value, by the state. In the past the widow has had to support her family as best she could and in many cases she had to go to work every day and leave the children to run the streets. The result of this condition has been bad. Many children have become criminals because of this neglect, but it was a neglect the mother could not help. If this bill, granting pensions to widows, passes, the widows of Manitoba who have children they are not able to support, will be given a grant, on condition that they keep the home in good condition and care for their children as all children should be cared for by the mother.

There are other mothers who should share in such help, such as the mother whose husband is an invalid, or a criminal, or insane, but no doubt that addition to the law will come in time. I believe that this is the first widows' pension bill that has been introduced into a Canadian legislature.

## Organizations

In Manitoba there are now quite a number of provincial organizations of women, or of men and women. It seems only a short time since the Women's Christian Temperance Union was practically the only provincial organization of women, open to women of all classes and of all religious beliefs. The next was the Home Economics' Societies, which met a long felt need, and to which the women rallied in great numbers.

Previous to the organization of either of these societies was a suffrage organization started among the Icelandic women, but it never reached great importance as a provincial organization. The Political Equality League came next, and as a provincial organization is gaining force

all the time. But even that did not meet all the needs of the women of the province, and an organization destined to have great influence among country women is the Women Grain Growers' organization, which has already provincial importance. Another organization that has reached provincial importance, especially since the war, is "The Daughters of the Empire," and everywhere Red Cross Societies are drawing in workers.

With all these organizations, fully alive and spreading out, there should be no need for any district to lack an organization that will draw the people of the district together, breaking down the barriers that have been built up by denominationalism and that have grown up between city and country. This is the chief work of all these organizations, no matter what the avowed object. The women of a district can learn to work together and co-operate in the larger things of life, equally well, whether making shirts, or studying sanitation, or government or considering the temperance question. The great thing is to get the people of the district, or village, or town, or city together. Once let a band of women get together for some worthwhile object, and soon they will be considering questions and facing problems as practical issues, that before they considered quite out of their province.

There is such a thing as over-organization, which leads at times to misunderstandings; and there is under-organization, which leaves too much of the work in the hands of a few. Too often the few think they are the only ones in the organization who can do the executive work, and as soon as an executive thinks that, it is time for a change. A large organization gives executive work to a large number of people, and by so doing, trains a lot of workers. The organization that trains the most competent workers does the best work. The organization that depends on a few is always weak, and in danger of going to pieces if the strong few, for some reason, cannot do their work.

The great work in the years to come will require all our workers and as many workers as we can train. The object of all our organizations should be, to make strong capable thoughtful women, women who can take up any needed work, and do nobly whatever is to be done. It matters little by what name a society is known, as long as the object is big, and the members of the society are big enough to keep the object before them, regardless of any personal gain, that may come to them.

## Celebrating Manitoba Victory

The women of Vancouver rejoiced with the women of Manitoba on their victory for suffrage. All the suffrage societies in Vancouver, and there are quite a number, got together, and held a great meeting to celebrate the passing of the bill in Manitoba. As one Vancouver woman said, "We were determined to be in on the shouting, anyway." At this meeting they had one member from each political party who was interested in this great reform and not afraid to say so.

In British Columbia the situation appears to be much the same as it was in Manitoba two years ago. The Conservative government has such a great majority in the house that it can do just as it likes, and it has liked to do such remarkable things, that at last the people have been aroused. Charges of graft and misuse of public funds have been made, but whether the great majority of the people believe the charges or not can only be proven by an election, and that must take place within a few months.

The suffragists of British Columbia have not definitely gone into politics

Continued on page 55

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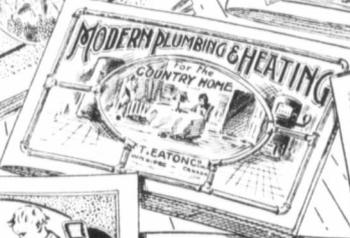
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# OUR YOUNG CONDUCTED BY Cousin Doris. FOLK

## Girls' Cosy Corner

**MOTHER'S "HANDS" AND "FEET."**  
By Susanne Weddell.  
We know the nicest game to have  
Toward the end of day,  
When mother comes to sit with us,  
To play a little bit with us,  
And this is the best of it with us,  
It chases "tired" away.

We play it just as soon's she comes.  
Hands and feet it takes.  
Teddy is the feet, you see,  
'Cause he runs faster much than me,  
And I'm the hands; that's hard to be  
'Thout making some mistakes.

First mother says, "I wish my 'hands'  
Would pick up all those books;  
And I do b'lieve my 'feet' forgot,  
When they were jumping such a lot,  
They mused the covers on the cot;  
How terrible it looks."

Then Ted and I jump quick to see  
Which one can be most fleet.  
We're not our own selves any more,  
As we run quickly 'round the floor  
And in and out the playroom door;  
We're mother's "hands" and "feet."

"I wish my 'hand,'" she says, "would pick  
Those playthings off the floor."  
And then, before she could count ten,  
They're all back in their place; and then  
She sends her "feet" away again  
To shut the closet door.

And when the room is morning-clean,  
Yes, every speck of it,  
She brings a footstool for her "feet"  
And folds her "hands" in her lap so sweet,  
Then rocks and sings just for a treat,  
Till they're not tired a bit.

Oh, it's the nicest game to have  
Toward the end of day,  
When mother comes to sit with us,  
To play a little bit with us,  
And this is the best of it with us,  
It chases "tired" away. —Advance.

## Letters

Goodhue, Sask. **▼**  
Dear Cousin Doris: As my brother  
takes the Canadian Thresherman, I  
thought I would write. I am 12 years old  
and I am in the sixth grade at school, and  
now that our school is out, it sometimes  
seems very lonesome. We have six horses  
and two colts and about twenty-seven  
cattle, out of which we have six milk  
cows. Our farm is about five and a half  
or six miles from any town the closest is  
called Stenen.  
Well, I guess I will close and would  
like any boys and girls at my age to write  
to me. Hoping to see my letter in print,  
I remain,  
Arne Anderson.

Reston, Man., Feb. 15th, 1916.

Dear Cousin Doris: I thought I would  
like to write again. I saw my last letter  
in and got a prize for it. There was no  
certain thing to write about this time, so  
I will write about the first men who came  
to Alabama in the United States.  
Alabama is an Indian name. De Soto  
was the first white man who entered the  
state. That was in 1540. The Indians  
did not like his coming. They considered  
the country their own, so they opposed  
his progress in several battles. De Soto  
found the Indians more civilized than in

other sections he visited. They had a  
place called Maubila, near the Tombigbee  
and Alabama rivers. There was eighty  
nice houses, each large enough to contain  
a thousand men. Round them was a  
high wall made of immense trunks of trees  
set deep in the ground and close together,  
strengthened with cross-timbers.

De Soto and his men entered the town  
and were treacherously attacked by ten  
thousand of the Indians. The Spaniards  
resisted the attack in a battle which  
followed, for nine hours. It resulted in  
the destruction of the town and the killing  
of six thousand Indians. The Spaniards,  
too, suffered terribly. They lost eight  
men, forty-five horses and all their baggage  
and camp equipage. The Spaniards were  
the ones most to blame. This country  
belonged to the Indians and the Spaniards  
had no reason to come after the Indians.  
The Indians were wild and fought des-  
perately. Whenever a Spaniard fell into  
their hands they treated him cruelly.  
The Spaniards were cruel to men, women  
and children.

De Soto grew tired of having the cruelty  
of his men returned upon them, therefore,  
he invited a powerful Creek chief to meet  
him for a friendly talk. The chief scorned  
the invitation, called the white men by the  
names they deserved. He said he would  
never cease making war on them as long as  
they stayed in the country. He carried out  
his threat, too. They killed scores of  
people, and put their heads on poles.

De Soto crossed northern Georgia and  
north-eastern Alabama to Maubila, where  
they had that terrific fight of which I have  
told you. The next winter was a severe  
one, passed by the Spaniards in the country  
of the Chickasaws, around the tributaries  
of the Yazoo. In the spring a furious en-  
gagement took place with the Chickasaws,  
in which the Spaniards came near being  
annihilated. In April, the forlorn rem-  
nant began again tramping through the  
wilderness, blindly groping for the land  
where De Soto had been told he would find  
great quantities of gold.

In the month of May, 1541, de Soto and  
his men reached the bank of the Mississippi  
River. The men stood gazing upon it  
with admiration. They were the first  
Europeans to see this mighty river of  
which they had heard so much. They  
thought the gold which they were looking  
for was not far away now. This part of  
the country was only peopled by savages  
and wild beasts.

It was not until 1620 that the Pilgrims  
came to Massachusetts. In 1682, Robert  
Cavalier de la Salle descended the Mis-  
sissippi River to its mouth and named the  
country Louisiana. In 1783, Great

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### Be Ready for the Baseball Season

SEE THAT BIG CATCHER'S MIT of fine  
chrome tan leather, thick, heavy padding. Edges well  
bound, double stitched, thumb laced to suit shape. Full  
on that full size Feller's Glove. Felt bow plate and  
strong in it. All edges well bound, firmly sewn. And  
the ball—it's a winner—full of life. Made of all-wool  
yarn, rubber centre, homelike cover, his regulation size  
and weight. The bat is made of fine selected grain  
ash, oil finish.  
Think how much better you'd be able to play with

this full, league-size outfit. Think of the fun you'd  
have if you owned it all yourself.  
**BE THE FIRST BOY IN YOUR LOCALITY TO GET THIS OUTFIT.**

I want to see the liveliest boy in each locality get this  
fine, big outfit. I have a plan that will easily bring it to  
him, complete. Are you going to be the boy? Are  
you going to enjoy the fun this dandy league-size outfit  
will bring? Write me today and I'll gladly tell you how  
you can get it.

**R. G. TOBIN, Manager, 122 Mail Bldg, Toronto, Ont.**

Britain ceded to the United States all  
territory east of the Mississippi, except  
Florida, which she ceded back to Spain.

At that time, Alabama was almost en-  
tirely in the occupation of the Indians.  
There was a garrison of troops (Spanish)  
at Mobile, one at St. Stephens, on the  
Tombigbee.

During the War of 1812 with Great  
Britain, there was a great deal of fighting  
with the Indians of Alabama. The Creeks  
were the principal tribe. They were  
stirred up to war by Tecumseh. This  
aroused the adjoining States to action.  
Generals Jackson, Claiborn, Floyd and  
Coffee entered the Indian country and  
defeated the Indians at Talladega.

On the 11th of January, 1861, the  
State seceded from the Union and joined  
the Southern Confederacy. Forts Gaines  
and Morgan, defending the entrance to  
Mobile Bay, were besieged and taken by  
the United States in 1865. The most of these  
people are now good and fond of this  
country (the United States).

Hoping this will escape the w.p.b.  
Julia Fraser, (Age 14)  
Reston, Man.

## Canadian Boys' Camp

### A DOG SOLLOQUY

By Helen M. Richardson  
They've cut my tail off but I can't tell  
why,  
Unless some foolish whim to satisfy,  
I'd like to have it back to wag at will,  
This little stub I have to keep so still.



Juvenile War Lord: "Ere! Someone else 'ave a go—I'm sick o' war. It  
aint in reason ter expect a bloke ter be the Kaiser three days runnin'!"

I saw a horse with one the other day,  
That stuck out in the same ungraceful  
way.

I pitted him, the flies were pestering so,  
And how to keep them off he did not know.  
Since the one instrument that God had  
made

For his relief was "docked," so someone  
said

God could have made us without tails  
if He  
Had deemed it wise, or so it seems to me.  
Then why should man seek God's work to  
improve,

Knowing the dog himself does not ap-  
prove  
This docking principle just to attain  
A little stub that causes us such pain.

A dog talks with his tail, some people say  
I did with mine before 'twas cut away.  
Three raps meant, thank you; one, I  
want some meat;

Two were a question mark; when shall  
I eat?  
While numerous raps at random were to  
satisfy,—

I'm at your bidding if you want to play.  
But this poor stub that ached so when  
'twas made,

Stands straight and stiff and so has  
always stayed.  
I prithee, friends, give heed unto my plea,  
And leave dog's tails as they were meant  
to be.

Since nature gives to each poor beast his  
due,  
Leave our ears just as she intended, too.  
Then as we fawn about you, day by day,  
You'll hear us thank you in our canine  
way.

### WHAT MAN OWES TO THE DOG

In his delightful essay on "Our Friend  
the Dog," Masterlink observes: "Man  
loves the dog, but how much more ought  
he to love it if he considered, in the in-  
flexible harmony of the laws of nature,  
the sole exception, which is that love of  
a being that succeeds in piercing, in  
order to draw closer to us, the partitions,  
every elsewhere impermeable, that sepa-  
rate the species! We are alone, absolute-  
ly alone, on this chance planet; and  
amid all the forms of life that surround  
us, not one, excepting the dog, has made  
an alliance with us."

### KING ALBERT AS A NEWSPAPER REPORTER

When King Albert of Belgium, as  
Prince Albert, put aside his title and  
became a newspaper correspondent, he  
travelled a good deal, visiting France,  
Austria, Britain, Scandinavia and the  
American continent, including Canada.  
In this "day the democratic prince was  
able to study the commercial advantages

of other countries, as well as broadening his views and educating his mind. In order that he should not be recognized during his expeditions King Albert grew a beard, wore glasses, and trimmed his hair in a new way. His disguise was so effective that many of his countrymen to whom he was a familiar figure passed him without recognition in the various towns he visited.

The Royal reporter seriously worked at the profession he adopted. In the United States he was employed by a Minneapolis newspaper at a salary of \$15 a week. The King's employers were quite unaware of his identity, and when he returned with poor "copy" he was as a badly hauled over the coals as were his less aristocratic colleagues. A story was told by his conferees of the way he endeavored to obtain copy.

Whilst on a Brooklyn newspaper Albert wanted entry into a house where a murder had taken place. He was stopped by a policeman, who demanded his card. The blue-blooded reporter did not happen to have one, so the representative of the law roughly ordered him off.

A rival reporter who noticed the incident afterwards went up to the policeman and said, "Do you know that man you were speaking to was Albert Prince of the Belgians?" "Well," answered the unenlightened policeman, "Mr. Prince should have shown his card, for I've never heard of that paper." In his reporting days King Albert volunteered to write on any subject connected with sport. As an all-round athlete he was especially qualified as an authority on outdoor games. He can box, fence, ride, shoot, and swim. There are few subjects on which King Albert could not write a good article. He has a knowledge of metallurgy, mining, shipbuilding, motor cars, and aviation.

SCOUTING IN ENGLISH SCHOOLS

Scouting is becoming a part of the curriculum of the English schools. E. Young, headmaster of the County school at Harrow, has turned his whole school, which contains some hundreds of boys, into one large troop of scouts, the scheme being so arranged, that the same organization of patrol and patrol leaders holds good both for school work and for scouting. During the summer the patrols take it in turn to camp on the school grounds, under the supervision of the headmaster from fifteen to twenty-five boys being always under canvas. When in camp the boys have to do their own cooking and look after themselves, the only exception being that they have a substantial meal provided for them in the middle of the day. Manchester Grammar School is taking up scouting in a similar way. It has been decided to start a troop consisting entirely of boys in the school, and it is expected that about 150 will be enrolled.

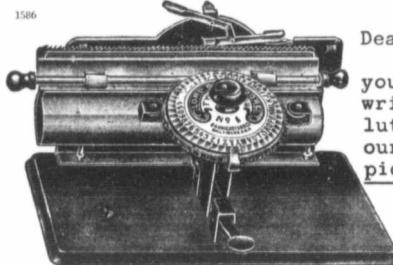
PRIZE TO BOYS FOR THE BEST BIRD HOUSE

"The spring will soon be here, the birds will be returning from their Southern haunts, glad to be home again, and will be eagerly looking for conven-

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ient home quarters. A few have interested themselves in the birds of our province, realizing that they are a most valuable asset both in town and country for the destruction of various pests, and a more general movement ought to be inaugurated to protect the birds, and to help them in their patriotic work, as pest destroyers.

"Nothing is more interesting and educational than the study of animal life, and no greater pleasure can be had than in making a material provision for birds. Although not generally recognised, birds are very responsive to kindness, and make most interesting friends.

"Don't you want the birds living near you this spring, brightening the whole season and protecting us and our trees from insects? There is nothing that

horbom coming to visit you. It is worth while. Start right now and put up a few bark covered bungalows for the birds.

"Do not make the doors or holes too large. The birds appreciate your protection and will soon learn that you mean well, and will come to your bird houses and feeding devices and they leave a message for other birds which may follow. Show that you are a bird protector by putting feeding shelves on the trees above the cats, right now, and the Chickadees will tell the Warblers that it is a good place to stop.

"The 6th Scout Law is: A Scout is a friend to animals. He should save them as far as possible from pain, and should not kill any animal unnecessarily, for it is one of God's creatures. Killing an

Leaders of patrols and troops are chosen from the boys themselves, and competent men who are interested in the movement are appointed as Scout-Masters by warrant from Headquarters to give the necessary instruction in Scouting and Athletics.

The scout is expected to stick to his parents, to his superiors, to his employers, and to his country through thick and thin. He must be prepared at any time to save life and to help others. A scout must always be polite, particularly to women and children, old people and invalids. The Scout must be thrifty, and pennies saved must be put in the bank. Cigarette smoking, drinking of intoxicants, is of course, prohibited. Such, in brief are the laws.

The boys' training is varied and covers a wide range. Such subjects as woodcraft and campaigning, which will be popular with every real boy, are taken up thoroughly. Boys are sent to the woods and forests to learn the secrets of nature. Animals' foot tracks will be followed up and studied. The different kinds of animals will be observed in their natural state. The Scout will learn which are the best wild roots, fruits, and plants for food, so that in emergency he can sustain himself.

All these things will not be accomplished at once, but provision is being made to develop the boy along every possible line, not only for their own good, but for the good of the country, and to have them understand and know everything that the veteran campaigner has learned from bitter experience.

How to form a Patrol. Any boy who wishes to join the Scout movement will find it an easy matter. The Headquarters for Manitoba are at No. 128 Industrial Bureau, Winnipeg. Any young man over the age of 18 can become an Assistant Scout Master, by getting together eight boys, thus forming a patrol. He should then register with the Provincial Secretary at Headquarters and apply for a warrant. The age limit for boys is from 11 to 18. All further information can be obtained by writing to the Secretary, Alex. T. MacIntosh, esq., No. 128 Industrial Bureau, Winnipeg.



A Swimming Party of the Souris Troup, Boy Scouts

birds more cheer to us than the birds, and there is no home more easily made than the bird home, and no family enjoys it more than the birds. Therefore, you should build bird houses, and you cannot make a mistake in putting up too many. It is good for the children to know and love birds and it is a great benefit to the country to have birds. It is ennobling to protect them and no home or garden is complete without them. They are protectors of our shrubs, trees and vegetables, and they destroy millions of insects in obtaining their daily food. It cannot be urged too strongly that we set up bird houses in March, that they may become weather worn and made artistic with age, as birds have always lived close to nature and an old box covered with bark looks better to them than a newly painted affair.

"Birds pass through the province in millions during April and go further north for more trees and better protection. You can stop them on their way if you use them rightly. In the summer they will appreciate a bird bath, and you will soon have all the birds in the neigh-

bour for food is allowable, and to encourage the practice of this law, and help in the destruction of these insect pests that are getting all too numerous in our province, the Provincial Secretary offers a prize for the best bird house, workmanship and design to be considered.

"All houses sent in will become the property of the Provincial Association and will be distributed in parks, etc., for the benefit of the birds. We expect hundreds of bird houses to be sent in, in response to this appeal, all houses to be in the hands of the Provincial Secretary, No. 131-132 Industrial Bureau, not later than noon on the 3rd of April.

WHY A BOY SHOULD JOIN THE B.P. SCOUT ORGANIZATION

The B.P. Scout Idea has taken a firm hold in Canada. To-day we have fully 10,000 who have taken the oath and subscribed to Scout Laws.

The boys are organized in patrols of eight. Three patrols make a troop.

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# OUR WOMEN FOLK

CONDUCTED BY  
PEARL RICHMOND HAMILTON



### BE STRONG

Be strong!  
We drift not here to play, to dream, to drift;  
We have hard work to do, and loads to lift;  
Shun not the struggle—face it; 'tis God's gift.

Be strong!  
Say not, "The days are evil. Who's to blame?"  
And fold the hands and acquiesce—oh shame!  
Stand up, speak out, and bravely, in God's name.

Be strong!  
It matters not how deep entrenched the wrong,  
How hard the battle goes, the day how long;  
Faint not—fight on! To-morrow comes the song.

Maltbie Davenport Babcock.

### JUDGE NOT

Judge not; the working of his brain  
And of his heart thou canst not see;  
What looks to thy dear eyes a stain,  
In God's pure light may only be  
A scar, brought from some well-fought fight,  
Where thou wouldst only faint and yield.

The look, the air, that frets thy sight  
May be a token that below  
The soul has closed in deadly fight  
With some infernal fiery foe,  
Whose glance would scorch thy smiling grace,  
And cast thee shuddering on thy face!

The fall thou darest to despise,—  
And of the angel's slackened hand  
Has suffered it, that he may rise  
And take a firmer, surer stand;  
Or, trusting less to earthly things,  
May henceforth learn to use his wings.

And judge none lost; but wait and see,  
With hopeful pity, not disdain;  
The depth of the abyss may be  
The measure of the height of pain  
And love and glory that may raise  
This soul to God in after days!

Adelaide Anne Procter.

**Home Economics**  
Annual Convention at Manitoba  
Agricultural College

NOT to get behind anything else in the march of progress, the Annual Convention of the Home Economics Societies of Manitoba eclipsed all previous record in attendance, in enthusiasm and in the extent and importance of the work it accomplished in two days close attention to business. Mrs. H. M. Speechly, of Pilot Mound presided at the opening session of the first day.

President Reynolds in a happy address extended the usual courtesies of the college to the ladies while they remained in Session, and outlined his own ideas of the splendid work which was peculiarly the women's own in the community life.

S. T. Newton, Superintendent of the Extension Service, read an exhaustive and most encouraging report of the H.E.S. work for the year. The local societies had increased to 68, having slightly more than doubled their numbers since last annual report was made. Mr. Newton detailed the work which the College Extension Staff had accomplished in dressmaking, millinery, and

home nursing, etc., and outlined certain projected legislation with regard to the Home Economics Societies which the Hon. Minister of Agriculture had in contemplation and which apparently had the unanimous support and hearty approval of the ladies present.

In describing the patriotic efforts of the various societies, Mr. Newton quoted some gratifying figures—notably in the case of Selkirk. The ladies at that point had forwarded no less than 15,000 articles for the use of the soldier lads at the front.

### Change of Name

Mr. Newton referred to a proposal which had been made to change the name of the society to a title which would more fittingly describe the increasing activities in the Woman's realm in the country. If the other provinces now in line with Manitoba were willing to accept the name of "Women's Institutes," it was generally felt that Manitoba would readily agree to this or indeed any form that would be at once comprehensive and uniform. The advisory board had considered it but felt it advisable to let the matter stand over for another year when possibly the conclusion of the war would suggest many things which were not now in sight.

In the afternoon session Mrs. R. M. Thornton, of Deloraine presided. This was a very largely attended and enthusiastic meeting. The medical inspection of schools was perhaps the leading topic of the discussion and was introduced by Dr. Mary Crawford who spoke as to its results in Winnipeg.

Dr. Crawford's quiet, forceful, intensely earnest manner always commands the interest of her audience whatever subject she elects to speak upon. In this case the weight of experience was felt in her convincing statements, and there could be no rebutting her very reasonable points. Compulsory education was a plank in her platform and where compulsory education was operative, compul-

sory medical surveillance would be observed as a matter of course.

Mrs. H. W. Dayton followed and described what had been accomplished in Virden as the direct result of the influence of the H.E.S. What had been done in the discovery of unsuspected and neglected diseases among the school children had won the appreciation of the whole community. Virden had been the first town in the province to take this matter in hand and no doubt its example had led to many other towns having taken it up and prosecuting it in the same thorough and energetic manner.

Mrs. Dayton saw no "problem" in introducing this great work for the children into any school. "Our trustees arose at the annual meeting," Mrs. Dayton exclaimed, and said: "look what we've done for the schools; you'll have to be big enough to allow the men to think they are doing it, but see, it's done."

Mrs. Speechly agreed with the previous speakers with regard to the urgency of medical inspection of schools and that it should be made compulsory and placed in the hands of the community health officer. Mrs. McBeath, of Headingly who, like Mrs. Speechly, is a school trustee, explained that her district had a municipal doctor, and it was being agitated that he should inspect the schools in the municipalities. The district nurse was perhaps the solution if doctors could not be obtained. The delegate from Robin, who had been a district nurse, stated that their great difficulty was the indifference of parents who when warned of defects of children took no steps to have them rectified.

Something of a novelty was imparted to the serious deliberations of the Convention when at roll call the various delegates who responded were asked to speak very briefly on the subject of rest rooms, Red Cross work or any special activity which was being pursued by their society and the cumulative show-

ing of these "experiences and testimonies" was extremely gratifying.

### Rest Rooms

Mrs. J. D. McKenzie, of Portage la Prairie, spoke on the municipality rest room of that town. The council gave the women rooms in the municipal hall and furnished it. Representatives from each ward form a committee to manage the rooms and a 10 cent lunch supplied the running expenses.

Premier Norris was one of many distinguished visitors to their rest room in Portage, who had expressed themselves in the most complimentary terms to the ladies who had charge of it. The committee, at the request of the council, had looked after the poor of the municipality and had now undertaken to cast a motherly eye on the schools. As for the cost it only amounted to 45 cents per quarter section at the initiation which had since been reduced to 10 cents.

"Rest Rooms on the Co-operative Plan" was the topic of Mrs. H. Sykes, of Shoal Lake. Grain Growers and Agricultural Societies, together with the town people, operated the room in that town and in addition to its more external uses the room was used for the 'get together feeling' in the community.

Mrs. J. T. Armstrong, of Manitow, and Mrs. C. H. McNeirn, of Miami, outlined the experiences of an H. E. Society in keeping up such a room. Mrs. Armstrong was of the opinion that the financial burden should not be laid upon the society, but if the room could not be got any other way the H.E.S. should undertake it. Such a place was a necessity from both town and country viewpoints. The cost of upkeep she would estimate as between \$240—\$300.

### Community Centres

Rest room in Miami, according to Mrs. McNeirn, meant a splendid place for interchange of ideas. Men had many places to meet and women needed a community centre, open to all parties and creeds. So the rest room was the rural club house. "When intelligent women are elected to parliament," stated Mrs. McNeirn, "we'll have libraries in connection with the post office. In the meantime there's the rest rooms." Recipes were kept on file, books and magazines interchanged, and flowers cultivated either as house plants or in garden plots. Sewing classes were held there, and in general it was the centre of the activity of the women of the community. The future might hold the rest room as the beginning of demonstration farm for women where labor saving devices for household as well as things pertaining to the out-of-door work would be tried out.

Mrs. Crewson, of Burnside, strongly commended the effort of the women of Portage la Prairie, and suggested that any society feeling doubtful of the innovation should visit that city.

In the latter part of the afternoon the delegates were conducted over the college plant by a number of the girl students.

### Evening Meeting

The ladies who attended the Tuesday evening meeting had the unexpected privilege of hearing the Hon. Duncan Marshall, Minister of Agriculture of Alberta. According to the printed programme the hon. gentleman was slated for Wednesday evening but owing to a misunderstanding he had booked the previous date and had made his arrangements accordingly.

Mr. Marshall's powerful address on the subject of keeping the young folk on the farm is referred to elsewhere in this issue. Primarily addressed to the fathers, it went home no less to the mothers of the young people and that it is destined to revolutionize more than

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"More bread and better bread"

one family "time-table" in Manitoba is a "dead certainty" in the mind of this writer.

The eloquent words of Revd. J. W. Hindley on the subject of "Woman's Part in the State," cannot receive justice in the brief notice to which our space confines us. Mr. Hindley occupies no second place among men in his advocacy of woman's title to every claim "that harms not distinctive womanhood" and in his own vigorous and whole-hearted fashion has done yeoman service for the enfranchisement of women in the United States as well as since coming to fill the "Central Congregational" pulpit in Winnipeg.

**Second Day's Sitzings**

Mrs. J. R. Dutton, of Gilbert Plains, presided at the morning session on the second day of the Convention which showed not the slightest evidence of waning interest. The first item on the programme was an address by Revd. H. W. Murchie, M.A., on "The Social Side of Rural Life." He was glad to announce that a "bureau of rural life," dealing with the recreative problem in country communities had been established in connection with the extension department of the college.

"Let us solve the problem of recreation in rural life, and we have solved the 'How to Keep the Young People on the Farm,'" asserted Mr. Murchie.

"Why did the boy, the middle-aged man, the old man, leave the farm? Not altogether for economic reasons, for the retired farmer did not go into other businesses. They go to the city for social reasons. This was not necessary, but the fact was the best blood was drafted off, and to the great impoverishment of country life."

The gathering of material wealth was not the first consideration of mankind. In the past Manitoba men and women had been so busy amassing a bank account that there was no inspiration left in social life.

In a survey of Turtle Mountain district, for instance, it was discovered especially in places remote from towns, that there were no provisions made for recreation.

Social reconstruction must begin at home. Recreation was impossible where drudgery was the rule, and this brought out the necessity for the installation of labor-saving devices.

Mr. Murchie cited an instance that had come under his observation where the buying of a gasoline engine with household appliances had revolutionized the household.

**The Home Library**

Another question was that of the home library. A few good books meant incitation to intellectual enjoyment. The school came after the home. Indeed, the school was a natural point for beginning this social reconstruction, since all creeds and languages were interested in the child.

Mr. Murchie made an eloquent plea for the use of schools as social centres. Country people needed a lesson in working and playing together. When and where only this lesson was learned would co-operation be possible.

"The child who can make a sacrifice for the sake of his team," he said, "will be able to co-operate when he comes to manhood."

Mr. Murchie commended the Boy Scouts and Girl Guides and urged the Home Economy members to help on these organizations where possible. Boys and girls' club of some kind should be part of work of every H.E. Society.

In conclusion, he urged the co-operation of the societies in the rural life department. "We seek invitations," said Mr. Murchie: "we will go where we are wanted."

Following Mr. Murchie's address, Miss E. M. Eadie gave a series of very interesting practical demonstrations of labor-saving devices for the home. This was really "a study of the equipment of the M.A.C. for teaching household science and household art."

At this session Mrs. Speechly, of Pilot and Mrs. Watt, of Birtle; Mrs. Dayton, of Virden and Mrs. Ross, of Selkirk were elected to the governing board of the society.

Mrs. G. T. Armstrong, of Manitou presided at the afternoon session at which the principal speakers were Mrs. J. S. Woods, of Oshawa on the work of the Women's Auxiliary of the Grain Growers' Association; Professor Baker, of Saskatchewan University on "Poultry: A Profitable Side Line," and Professor Jackson, of M.A.C. on "Child Life."

Professor Jackson's observations were of an unusually striking nature, opening up as they must have done fresh avenues in the thoughts of many present to a correct understanding of the child mind. They were evidently the fruit of long, careful and intensified study and delivered with that piquancy of interest that is never absent from the "born teacher." This one address was worth the time of the whole convention and we are glad to be able to give a fairly complete resume of it at the end of this report.

**A Message from Saskatchewan**

The felicitations of 160 Homemakers



**THE IRREPRESSIBLES**

Nurse (of Private Hospital), "A message has just come in to ask if the hospital will make a little less noise as the lady next door has a touch of headache."

Clubs of Saskatchewan were tendered to the meeting by Mr. Sam Greenway of the Saskatchewan University Extension Department. Mr. Greenway as a bird of passage was "spotted" in meeting with his bright young hopeful and readily responded in his own happy style to a request that he should speak for Saskatchewan.

One important impromptu feature of this great gathering of Manitoba's women folk was the passing without a single dissenting voice a resolution in favor of the proposal on the part of the Provincial Government to abolish the bi-lingual act as it now stood on the statute book.

Not the least noteworthy feature of all was the "Industrial Exhibit" of the Home Economics Societies in which seven societies took part. This is a new departure but certainly a very happy idea on the part of the Extension Department and was skilfully engineered by Mr. J. H. Evans of that department. Really excellent displays were made by Virden, Selkirk, Hartney, Birtle, Killarney, Headingly and Minnedosa, and the judges had a difficult task because of the uniform merits of the different competitive items. In the bread contest, 27 entries had to be dealt with—the "labor-saving" competition, however, only offering two subjects which both happened to be refrigerators. Finally Virden was awarded first place for Society Exhibits and second honors were given to Birtle. Mrs. W. A. Elliott, of Pilot Mound is champion baker and Mrs. W. D. Dodge, of Birtle was a very close second. Mr. Evans made the very proper suggestion in connection with the "Bread" display that in sending exhibits of the kind, every unit should be protected by oiled paper so that it might be kept in perfect condition until at least the judges had finally disposed of it.

We much regret that space is not available for quite a number of other important features of this fine gathering which we should very much like to give in detail. The competitive essays are now being carefully read and adjudicated. When the result is known we shall be glad to give the fullest publicity to the honors list and no doubt it will be our privilege to publish one or more of them in full.

**THE BIOGRAPHICAL SIGNIFICANCE OF INFANCY**

By Prof. V. W. Jackson, to the Home Economics Convention

Until all else became eclipsed by the world's present cataclysm of man's ambition and destructiveness, there were two great irresistible tidal waves of some cosmic upheaval going around the world,—the enfranchisement and recognition of women, and the necessity of prohibition for the dignity and respectability of life. Of these two great waves of thought and consciousness the former has the greater significance as it affects half of the human race, and implies a far greater social change than prohibition. And it is for this very reason that its dangers are greater and its pilorage necessarily more careful. For the world will lose more than it gains, if it loses womanly intuition that surpasses understanding, and womanly dignity and susceptibility that surpasses manly ambition.

The great problem is, How can women attain to equality, and retain these great psychic virtues peculiar to their sex? This world is enriched by the differences in the beauties and the virtues perfected in each of its two great classes, men and women. Girls have a keener appreciation of art and beauty, and a greater memory than boys, and in school naturally excel in literature, art and language. On the other hand, boys naturally excel in mathematics, logic and science owing to their greater self-reliance and instilled sense of proportion, and it is in this lack of the sense of proportion, of the law of averages, of the per cent of importance of things that women will have their greatest difficulty in attaining to political equality.

We must, for some time, expect their greater contribution to society along lines for which they are by nature better endowed, and one of these lines in which woman's intuition is better than all logic and judgment, is motherhood, or the Biological Significance of Infancy. The woman is prompted and guided by a power that permits of no error, and yet that power might be increased and strengthened for the world's greatest task of conserving childhood by better knowledge of the biological significance of adolescence which constitutes one-third of our lives. If we stop to think that a colt is as old in six days as a child is in six years, and that a chicken is as old in six minutes as a colt is in six days, we must be brought to a consciousness that this long period of infancy in human life has some great significance.

The chicken is pre-born, pre-determined, by its instincts, and is completely born on leaving the egg and just repeats the careers and habits of its ancestors. The colt wabbles on its legs a few hours and then off it goes as wild as a cayuse, and it will take three years to break it into harness. But the child misinterprets its mother's few steps backwards as a dwindling or vanishing of the parent into space and the goodness from its eye causes it to cry. But it soon feels a correspondingly increased joy when the mother re-appears in its eye again and gradually grows larger and larger until it fills its eye optically and therefore physically. It is a long time finding out how near things are and how far things fall, and it is a year or more before it can balance itself and walk; and dreams and visions are its books, and pain or joy its thoughts.

What, then, is the significance of this long period of infancy? It stands for plasticity, teachableness and individuality, and only in so far as this is recognized and applied to infancy, does the boy rise above the brute, or the girl above the butterfly. The child is the father of the man. Childhood is the foundation of destiny; a destiny beyond material welfare. Childhood is the source of the craving for the beautiful and the ideal, and since it had its origin in motherhood, to motherhood belongs the onus and the power of turning its great significance into a reality. What, then, can Biology teach motherhood? The hurry and con-

centration or contraction of modern life and the concomitant precocity of children has robbed motherhood of the fullness of its power.

It is a fundamental biologic law that all life is evolved from the egg, and during childhood and adolescence goes through all the stages of evolution. The child is therefore the epitome of the race or should be, in its free and normal development. Therefore it is a biological fact that children run away and hide (Hunter stage), that they stone frogs (Stone age), and that they love jewelry (Brass age), and that they swipe cookies (The Steel age).

John Burroughs says, "It is the bitterness of the green fruit that gives flavor to the ripe."

Biology also shows that instinct is not intelligence, but a substitute. This is why Snookums never grows old. There is nothing more pathetically funny than "Their Only Child" whose every instinctive movement is interpreted as a profound appeal to the human race for recognition of precocial insight into infantile needs, and intelligent consciousness of the preservation of the species.

A larger family in which these inherent tendencies had been better distributed was pronounced slow and backward, and such are so common that educationists are proposing schools for the weak and backward. Evidently our children have been going to the wrong schools, awaiting the building of others more suited to their needs. We have been years discovering that scholarships pupils are not a success in after life and that valuable material has been left unfinished. Childhood stands for plasticity, teachableness and individuality and a school system which cannot make use of these three great things in childhood is inadequate, inefficient and inhumane.

**Society Reports**

**BURNSIDE**

Dear Madam,

The following is a report of the several meetings held by the Burnside H.E.S. since I sent in the last report. The July meeting was held at the home of Mrs. Galbraith, the immediate business of the meeting was dispensed with and the afternoon's programme opened with an instrumental solo by Mrs. Russell, followed by a very touching reading by Mrs. Allardyce, "The Making of a Red Cross Flag."

Miss Martin then sang a well rendered solo and Mrs. Russell gave an interesting talk on the Rest Rooms provided for the wives of English Soldiers called "Tipperary Rooms." "Tipperary" was then sung and the ladies adjourned to the lawn where a delightful afternoon tea was served and a silver collection taken in aid of the Red Cross Fund. The proceeds amounted to \$8.00 and the society decided to donate an extra \$5.40 making a total of \$12.00 to be sent.

The October meeting which was held in the Presbyterian Church was also a Red Cross meeting.

The business of the meeting consisted of appointing committees to plan patriotic work for the Fall and Winter months, after which the following programme was rendered: Reading by Mrs. Crealoch, "Extracts from a Nurse's Dairy." Song, "We'll never let the Old Flag Fall;" by Miss Brown. Reading, "The Heavenly Heights," by Mrs. Galbraith.

A silver collection, the proceeds of which amounted to \$8.00, was then taken in aid of the Red Cross Fund and the meeting closed by singing "God Save the King."

The November meeting was our annual election of officers, and after the committees appointed at the October meeting had made known their plans for Red Cross work to be done, a vote of thanks was tendered the retiring officers for 1915 and the following officers were elected for the ensuing year.

President, Mrs. Galbraith.  
First Vice President, Mrs. R. Bell.  
Treasurer, Mrs. Crealoch.  
Secretary, Mrs. N. Graham.

Lunch was served at the close of the meeting.

The January meeting was held at the home of Mrs. Allardyce. After several



**Tea—or Near Tea—Which Do You Drink?**

There is the highest art in blending tea—art in growing it—art in brewing it—art even in packing it.

Note the new doubly-protective packet of



Become acquainted with the Tea that represents the real Art of Tea-production. It will then become a permanent acquaintance in your home.

Scientifically grown, blended and packed in the best form of wrapper money can produce, BLUE RIBBON TEA is all a tea should be.

Take our word for the first packet. Your palate will do the rest—or your money back.

You saw this advertisement in this magazine. Don't forget to say so when writing.

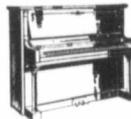


**Mason & Risch Pianos**

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TWENTY BRANCH STORES  
HEAD OFFICE & FACTORIES, TORONTO

THE Mason & Risch Player-Piano furnishes entertainment that never palls. It caters to every taste and purpose. It provides dance music—the latest and the best. It accompanies the popular song, the old-time favorite, the Sunday hymn. In every home it enters, the Mason & Risch Player-Piano takes its place as a constant source of happy enjoyment, inspiration and refinement.



**MASON & RISCH LIMITED**

302 PORTAGE AVENUE, WINNIPEG

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**ANOTHER ADVANCE**

Horsehide advanced another 20% just lately

**Casey Jones—the Dollar Glove**

IS STILL BEING MADE OF SOLID CHROME TAN HORSEHIDE

In the home or the State no mailed fist of hate  
Ever "did things" that lasted a day.  
For the enemy crept while the tyrant still slept  
With no thought in his heart but to slay.  
But the "Kingdom of Love" in a NORTHLAND GLOVE  
Is a force that will live through all time;  
While it kindly constrains, it boldly maintains  
With its sceptre unstained by a crime.

**BEST DOLLAR-AND-HALF GLOVE EVER SOLD FOR "ONE DOLLAR"**

Try a pair to-day. Sold at all goods stores. Manufactured and guaranteed by the

**Northland Knitting Co., Limited**  
OF WINNIPEG

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matters of interest in reference to the coming convention had been discussed and a delegate appointed to attend the convention, the President read the programme planned for the next five months by the programme committee. The president and all committees then divided the Red Cross work to be done.

This work consisted of surgical shirts to be made—the cut out material of which was to be paid for by the members making the shirts. All members who could knit accepted the yarn brought for the purpose of making socks, and blocks of white material were given to the girl members who have undertaken to make an autograph quilt.

At the close of the business meeting a dainty luncheon was served and the meeting adjourned.

Mrs. Nelson Graham, Sec.

Programme for the following five months.

February. Delegates report, Reading from "In Times Like These," Mrs. R. Bel, Music, Miss Ella Askin.

March. Paper on "Remote parts of the Empire: and what they have done for the Great War," Mrs. Jacobs, Music, Mrs. A. Munro.

April. Paper on "Red Cross Work. Its Origin and Development," Miss Ruby

Crealock; paper on "Garden Fruits," Miss Askin. Music, Miss Myra Treffry.

May. Paper, "Some of the Women who have worked for Woman Suffrage," Mrs. S. Crosland. Music, Miss Berva Hyde.

June. Red Cross Tea. Music, Miss Violet Troop.

REVIEW OF THE MIAMI H.E.S. WORK

The following is a review of the work attempted or accomplished by the Home Economics Society for the year 1915 with Miami as centre.

Eight regular monthly meetings with an average attendance of 45 women and five directors meetings.

Maintained the Rest Room at a monthly outlay of \$25 each month. Collected a library of about 40 books.

Gave the Rest Room free for distribution of supplies for Boys and Girls Club and for use of sewing classes in club work.

The H.E.S. committee took an active interest in our cemetery work where improvements were made to the value of about \$600 including public and private funds. Hal Prof. Bedford plan the cemetery work for two succeeding years.

Gave an afternoon tea in May to the general public in the Rest Room at 4

p.m. to which we invited the members of the Miami Citizens' Band at 10 p.m.

Put on a concert in February in the Oddfellows Hall.

Re-appointed the committees to do the following work: report all cases of infectious or contagious diseases to the health officer; overlook all lanes, yards or streets which need attention and report to the sanitary constable; take an active interest in all our schools either town or country as regards to organized play, health of children attending, school gardens, etc.

In July our officers motored to Roland and gave the committee and conducted the meeting for the Roland H.E.S.

Entertained to Luncheon on March 26 Miss Beynon, of the Grain Growers' Guide, and Mr. S. T. Newton, Supt. of the Extension Ser. Sec. of the Agricultural College.

Served meals to over 200 people on July 8th, Fair Day.

In August we conducted a successful flower and vegetable show for which we received a grant of \$25 from Department of Agriculture and had as our guest Allison Craig of the Press Press staff and as judge Mr. Cox, Fellow of R.H.S. Had two very successful demonstra-

tions in cooking by Miss Crawford of the M.A.C.

The Directors were representatives on the Boys and Girls Club executive, giving a grant of \$5 for prizes.

Gave cheques to the value of \$20 to the Red Cross Society besides giving our time and money individually to this good work.

Gave donations to deserving cases. Served hot dinners on Club Fair Day and Seed Grain Fair Day in the Rest Room.

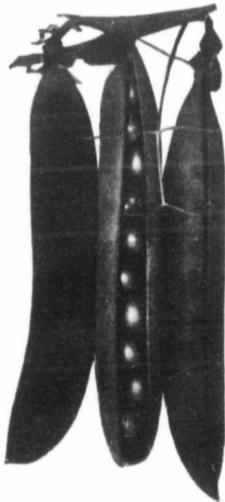
Secured over 300 signatures to the Franchise Petition.

Gained 38 new members during the year.

Have a regular paid-up membership of 120 women with 190 names on our book.

WHITE HEATHER HOMEMAKERS' CLUB, GOVAN, SASK.

The February meeting of the club, postponed by reason of the severe weather, was held on Wednesday, Feb. 9th at Mrs. St. Clair Malcolm's home. There were 17 ladies present and the afternoon was spent in sewing for the Red Cross Society. The next meeting will be held in the Sundwall School on March 1st, when Mrs. W. R. Fansher will give a paper on, "What Constitutes



In our Catalog we offer 60 of the choicest varieties of Spencer's Sweet Peas.

Patmore's Reliable Northern Grown Seeds, Trees and Shrubs

HOME-MAKING is a characteristic of the British people, and here on the prairies of the West are being created homes which for beauty and comfort will compare with those of any other country.

PATMORE'S Hardy Northern Grown Trees, Shrubs and Plants are helping to make real HOMES in all parts of the West.

We also grow and sell Reliable Flowers and Vegetable Seeds, Grasses, Fodders, Farm Seeds and Seed Potatoes, of all the best hardy varieties.

Messrs. Patmore Nursery Co., Ltd. Brandon, Man.

January 27th, 1916.

Dear Sirs—

I received lately your beautiful catalogue, of garden and field seeds, and nursery plants. I should like to let you know that all the seeds I purchased from you last year gave entire satisfaction. The alfalfa was a good stand by fall, the Red Clover did well and grew three feet the first season. Swede turnips were a large crop and very even in size. Cabbage, sown June 3rd, and singled out from good solid heads, weighing five to eight pounds each. The onions went about 250 bushels to the acre, and all were of uniform size, making ninety of the strong and even germination of your seeds. Of the two potatoes, one pound of each, I had 48 pounds from each variety, all very even in size and absolutely free from any disease. The ordinary varieties planted alongside were not nearly half so good a crop. I consider it will be a good plan to purchase at least some each year of reliable seed. All the tree seed I purchased from you did well.

Yours faithfully,

T. G. JAMES, Blue Sky, Via Peace River, Alta



We grow and offer for sale 15 of the most productive of garden peas.

Our 1916 catalogue will interest you. It is illustrated with actual photos of western growth, and compiled with the experience of 30 years in this Western country.



A WESTERN HOME, WHERE OUR TREES AND SEEDS HAVE BEEN USED. Our Reliable Lawn grass seed on the lawn, Virginia creeper on the veranda, Russian Willows in the background, and a well trimmed Caragana hedge on the side.

FOR CATALOG WRITE TO

The Patmore Nursery Company

Brandon, Man. Saskatoon, Sask.

We grow and offer all of the Hardest of Hardy Fruits, Apples, Crabs, Apples, Plums, Cherries, Gooseberries, Currants, Raspberries, Strawberries, Rhubarb, etc., the very fruits that are needed for the comfort and health of the Western prairie home.

PATMORE NURSERY CO., LTD., BRANDON, MAN. I will need some... Name... Address... Town... C.T. Send me, at once, postage prepaid your 1916 catalogue, and your collection of garden seeds, 1/4 lb. box for \$1.25. Collection of 12 packets flower seeds, 1 lb. box, 25c.

a Modern Good Mother" and the Roll Call will be, "A Favorite Mother of History."

The programme for the remaining months of the year has been arranged as follows:

- April—Domestic Science in Schools, Mrs. F. A. Phillips.
- Roll Call—Suggestions for School lunches.
- May—Necessity for Recreation, Mrs. Rev. C. H. Cross.
- Roll Call—Games for Young or Older Children.
- June—Reports of Annual Convention, Roll Call—Ideas for the Annual Convention.
- July—Salad Demonstration, Mrs. J. Bradley.
- Roll Call—Recipe for a Favorite Salad.
- August—Economy in the Home, Mrs. C. Lakness.
- Roll Call—A Dish Composed of Left-Overs.
- September—Canning and Pickling, Mrs. G. A. Wright.
- Roll Call—Recipe for Pickle or preserve.
- October—Best Magazines and Papers for the Home, Mrs. W. A. Paul.
- Roll Call—Favorite Periodical and Why.
- November—The World's Masterpieces in Art, Mrs. A. J. Currie.
- Roll Call—Our Idea of an Ideal Farm House.
- December—Annual Meeting.
- Roll Call—A Favorite Christmas Dish, Isabel Currie.

**Mother's Corner**

I said unto myself, "My way is barred; The cliff is high and grim and tempest-scarred,"  
Yet step by step I mounted it, till, lo,  
I felt the free air on the summit blow.

I said unto myself, "My strength is small,  
And I am weary and I fear to fall,"  
And lo, an angel took me by the hand,  
And led me safely where I feared to stand.

**THE HOME ALTAR**

**Sunday**  
Almighty God, we pray that Thy light may have no obstructive power to-day. Let no earthborn clouds hide its shining. Let its searching and kindling rays be felt among all Thy people in every part of the world.

**Monday**  
Almighty God, we thank Thee for the privilege of communion. May we learn the secret of praying without ceasing. Deliver us from the bondage which makes our devotion transient, and give us the liberty which makes our joy in the Lord a permanent spring.

**Tuesday**  
Eternal God, we pray that Thou wouldst renew our hope in Thee. May we begin this day with great expectancy, leaning upon Thy promised grace. Let us go through the day with wondering eyes, expecting blessings at every corner.

**Wednesday**  
Heavenly Father, let Thy blessing rest upon the common labour of men. Let all men so work that their work shall be as worship. Let the spirit of the sanctuary pervade the workshop, and let Holy influences possess us while we earn our daily bread.

**Thursday**  
Holy Spirit, help us to realise Thy presence. Let it not be a beautiful rumour to us, but a gracious reality. Let us rejoice in Thy strength and be buoyant in the sense of Thy companionship. Let us bear everything in Thy promised light.

**Friday**  
Gracious God, help us to dwell with Thee to-day. Let all our powers be rooted and grounded in Thee. Let every action draw its nutriment from Divine grace. Let all our speech be pervaded with the influence of Thy spirit.

**MME. FORMAN—Corsetiere, Paris Arcade Winnipeg, Gosard and Mme. Irene Corsets Medical Fitting a specialty, Phoenix Hose Pictorial Review Patterns. Mail orders solicited**

**Saturday**

Heavenly Father, we pray that Thou wouldst bind us to our fellows in deeper and more spiritual kinship. Let nothing be done to-day which shall increase the alienation, but let every act and word be a minister of healing and strength. Let us so live to-day as to promote the brotherhood of man.

**Preparing Beef Juice**

Broil a piece of round steak cut quite thick. Cook just enough to start the juices, remove the piece of meat to a warm plate, cut in small pieces, and put the pieces into a lemon squeezer or a meat press. The metal lemon squeezer with handles does good work, or you can purchase a little meat press at a hardware store for about \$1.50 which screws down and crushes every bit of juice out of the meat. Three or four ounces of juice can be obtained from a pound of meat. Season slightly and dilute with an equal quantity of warm, not hot water. Or, grind one pound of round steak fine. Put into a pint glass can, add a pinch of salt, and six ounces of water. Shake every little while so that the juice of the meat may be dissolved. Stand in a cold place over night. Pour off the juice, squeezing out every bit with a spoon. Season and feed.

**Gruel Formula**

A very satisfactory gruel formula for the sixth month is as follows: Set a quart bottle of milk in a cool place three or four hours. Remove six ounces of top milk. Stir the rest gently with a spoon. Pour off ten ounces. Mix this with twenty-four ounces of gruel, a pinch of soda, two slightly-rounded tablespoonfuls of milk sugar. Give from four and one half to six ounces at a meal. You will notice that there is one and a half as much gruel as milk. Give every three hours up to ten p.m.

**The High Chair**

A young child should not be placed in a high chair until he can hold his head erect without trouble and the spine is strong enough to support the little body easily. Even then, the child should not be left in one position long. A young infant forced to sit in a high chair prematurely is in danger of contracting spinal deformity. When the little one is old enough to be put in the high chair, it should be watched and taken out upon the first signs of restlessness or dissatisfaction.

**WEAK IN PHYSIOLOGY**

A mother was informed by the War Office that her son had been wounded in the Dardanelles.

"What part of the body, sir, is that?" was the first question she put to the vicar when she saw him.

**BABY IS CONSTIPATED**

Babies who are not yet active in creeping or walking are often constipated. As your baby is eight months old, he can take a little strained, sweet orange juice, prune juice, or grape juice an hour before his second morning feeding. Start with a teaspoonful and increase gradually to three. Beef juice, expressed from freshly broiled steak half an hour before his noon nursing, also acts as a laxative with many children. Dilute with an equal quantity of warm water and salt slightly. Start with a teaspoonful and, if this agrees with him, increase to two teaspoonfuls, and in time to four and six. At a year he should not be taking more than two or three tablespoonfuls at the outside, so do not increase so rapidly.

As you nurse him, your own condition will affect the little one. Eat sweet, ripe fruits, graham and drink plenty of water. Rather than give olive oil constantly, vary with milk of magnesia, as too much oil may make him bilious. Try to establish a regular habit of stools. He is quite old enough to be trained to use his chair.

**LOOSENESS OF BOWELS**

The looseness of baby's bowels is probably caused by improper food or failure to digest what he eats. At nine-months he should be taking considerable nourishment. For the present omit the fruit juice or substitute a little black raspberry juice, carefully strained. Let his ten o'clock feeding of cereal be Cream of Barley, slightly salted, thor-

**Does five times the work of other poisons**

**SUREDETH**  
the new scientific gopher poison absolutely exterminates.

Our \$1.00 package—the only size we put up—contains 25,000 doses and will cover as much ground as \$5.00 worth of any other gopher poison made.

"SUREDETH," the new poison—prepared in a new way, in a new form—costs less, does better and surer work and KILLS GOPHERS. Positively guaranteed.

"SUREDETH" can be used in gardens and pastures with perfect safety to stock and domestic and wild fowl.

To be had from your druggist, or write us for trial package—\$1.00—and FULL instructions. Circular fully describing "Suredeth" mailed on request.

**EMPIRE CHEMICAL COMPANY LIMITED**  
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For rice, 1 mitted rice 0 or 40a might stale l  
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**BEST Anti-Friction BABBITS On the Market.**

With 40 years experience in manufacturing alloys for all classes of machinery, the HOYT METAL CO. has evolved two alloys which are unsurpassed by anything of the kind now in use.

**HOYT'S NICKEL GENUINE** Babbitt is especially designed for heavy duty gas tractors.

**HOYT'S FROST KING** Babbitt is especially designed for threshers, separators and stationary engines of all classes.

If your dealer does not carry these metals in stock, send your order direct to us in order to insure prompt delivery send postal money order.

<b>Nickel Genuine</b>		<b>Frost King</b>
Less than 25 lbs. .... 75c. per lb.		Less than 30 lb. .... 40c. per lb.
25 lb. box ..... 70c. per lb.		30 lb. box ..... 37c. per lb.
55 lb. box ..... 65c. per lb.		60 lb. box ..... 35c. per lb.

Delivered to your nearest express or post office station.

**Hoyt Metal Co.** Eastern Ave. and Lewis St. TORONTO  
Factories—London, Eng.; Toronto, New York, and St. Louis

**Breakages Welded by Oxy-Acetylene**

impart a strength to the machine greater than it ever possessed, while the job is the most finished bit of work ever attained in repairing a fracture.

**We Are The Pioneers OF THE PROCESS**  
ARE EXPERTS IN EVERY DETAIL OF OXY-ACETYLENE

If anything breaks or is worn out on your threshing machine or traction engine, have it welded by the Oxy-Acetylene process. Your time is valuable—we can save you many precious days of delay, and, incidentally, many hard-earned dollars.

**Your Blacksmith or Repair Expert Can Do This Work For You**

See him now about your broken castings before starting your spring work. If he has not a welding plant write us, giving his name, and we will supply him with full particulars.

**L'AIR LIQUIDE SOCIETY**  
328 WILLIAM AVENUE WINNIPEG, MAN.  
Largest Manufacturers of Oxygen and Welding Plants.

First they sub Seco bankit t sea-boots First

oughly cooked, and served with milk rather than thin cream. Stale bread, zwieback, or toast with a cup of warm milk, will finish his breakfast.

For his dinner allow lamb broth with rice, rare scraped or minced beef steak, mutton chop, or roast beef, a little boiled rice or macaroni, stale bread, zwieback, or toast moistened with beef juice, or he might have a delicately-cooked egg with stale bread crumbs broken in it.

For dessert allow prune pulp unless you find this too relaxing, baked apple, junket, or a plain custard. For supper give milk toast, stale bread and milk, or arrowroot pudding and milk, the latter having been cooked at least half an hour.

Reduce the fat in the milk by removing part of the cream and skimming the milk for three or four minutes. It will be wise to clear the intestines thoroughly with castor oil, thus getting rid of irritating substances, doing this before giving the scalded milk or other foods intended to meet the relaxed condition. Should a decided condition of diarrhoea set in, clear the intestinal tract and give only broth and thin gruel until your physician diagnoses the case.

Baby will require a flannel petticoat even though he wears rompers. This can be tucked in smoothly without being bulky. He cannot well wear drawers until he becomes accustomed to the regular use of his toilet chair. A very satisfactory outside garment consists of a sweater suit, while for the coldest weather, a warm coat and leggings to the waist will keep the little fellow warm.

**TONIC FOR NURSING MOTHER**

There is every reason to believe that a suitable tonic calculated to meet the needs of the depleted nursing mother, perhaps aiding digestion and assimilation, will encourage the secretion of milk. Avoid anything in the way of anxiety or worry. This will affect the flow very quickly. Be careful not to over-work, but take a reasonable amount of exercise in the fresh air. Let your diet conform to that which has been found satisfactory during lactation. Make a point of taking a quart of milk or gruel each day and from six to eight glasses of pure drinking water. Acid fruits, coarse vegetables, and spices are liable to cause distress on the part of the child. Anything which causes indigestion with the mother, should be avoided. Heavy puddings, or improperly-baked pastry, fried foods which have soaked in fat, highly-seasoned dishes, such as fritters, and croquettes, pickles, mince meat, baked beans, pork and cabbage, veal, and some other things, are undesirable. It must be remembered though, that some people can digest what others cannot. It is better to eat less and to eat often, than to cause indigestion by over-loading the stomach at any one time.

**RECIPES**

**THREE WAYS OF SERVING COLD POTATOES**

**Cornish Potato Cake.**—Rub the potatoes with a similar quantity of flour, and add one ounce of sugar and a tablespoonful of currants. Mix these well together with one egg and a little milk. Roll out to about one and a half inches thick, put in a tin, and bake in a moderate oven till brown.

**Potato Dumplings.**—Mash the potatoes finely, and to each tablespoonful add a tablespoonful of flour, one ounce of butter, a pinch of salt and a little grated nutmeg. Rub well together. Stir in an egg and enough milk to make into a stiff mixture. Form into balls and put them into salted boiling water, boiling for fifteen to twenty minutes.

**A SAVOURY SUPPER DISH**

Four large Spanish onions, a little butter, pepper and salt, two ounces of grated cheddar cheese. Wash and peel the onions, cut into thin slices, put them in a well-buttered baking-dish, with pepper and salt. Pour over a pint of stock, or milk, put dish in a quick oven for about twenty to twenty-five minutes. When tender, take out dish and sprinkle onions thickly with the grated cheese, and put a few pieces of butter on the top. Return to the oven until the cheese has melted, then lift the slices out carefully, lay on a hot dish, and serve at once. This makes a very tasty supper dish, served with thin slices of brown bread and butter.

**CHOCOLATE ROLL**

The weight of two eggs in flour, sugar, and butter. Beat the sugar and butter to a cream, add the eggs well-beaten, and gradually the flour; lastly, one teaspoonful of baking powder. Butter a large baking-tin, pour in the mixture, and bake in a hot oven for ten minutes. Then take one teaspoonful of cocoa, one tablespoonful of water, four ounces of icing sugar, and beat all together to a thick paste. Take the cake out of the oven, turn out on to a sugared pastry-board, spread quickly with the chocolate mixture, and roll at once.

**GINGER SPONGE CAKE**

Three eggs, a little flour, six ounces of castor sugar, saltspoonful of ground ginger, one tablespoonful of ginger syrup. Whip the eggs, sugar, and ginger syrup together for fifteen minutes. Put the flour into the oven for a minute to warm it slightly, then beat it in lightly with the ground ginger. Line a tin with well-greased paper, and bake it for about an hour in a moderate oven. When cold, cut it through the centre and spread over a layer of ginger cream.

**Ginger Cream.**—Mix together four ounces of icing sugar, a tablespoonful of cream, twelve drops of ginger essence, and two ounces of preserved ginger, cut finely. Put the cake together again and ice the top with ginger-flavoured icing.

**TAKE THIS ROAD TO Health, Wealth and Happiness**

Los Indios, Isle of Pines, offers you realization of your dreams of independence without the hardships of general farming. Nowhere else can the tiller of soil reap so bountifully. Ten acres at Los Indios, set out to Winter Vegetables and Grapefruit, will produce a bigger income than 320 acres of Canadian wheat—and you only need to work a tenth as hard. Los Indios growers in 1914-15 netted \$385 to \$635 per acre on Winter Vegetables. Demand for 1915 was far bigger; \$4.00 to \$6.00 per crate has been paid for Los Indios Grapefruit since September of last year — demand way beyond supply. Nets planters hundred of dollars per acre.

Climate most wonderful and healthful in the world—average yearly temperature, 75 degrees. Every day a growing day—three crops a year. No winter expense—no fuel—no colds. Frost has never penetrated to the Isle of Pines. Crops and fruits always safe—no expense of heating orchards. No taxes on land.

Soil at Los Indios wonderfully fertile. Grows anything. No irrigation. Los Indios has only Deep Water Harbor on island. Ship right from Big Dock—no long haulage expense.

**Canada Land & Fruit Co.**  
Dept. C T., 117 Winconsin St.  
**MILWAUKEE, WINCONSIN**  
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**WINNIPEG MANITOBA**

**Free:--** Our big, beautiful book describes Los Indios and Isle of Pines in detail. Fully illustrated. Letters from settlers, many of them former Canadians. Write to-day for copy and we'll also send you a monthly magazine about the Isle of Pines regularly, without charge. You can go to Los Indios this Winter—set out a grove—grow Vegetables on same ground for early Spring markets. Learn about it. Send for book to-day—sure.



First Scotch Trawler Skipper:—"Are ye takin' any precautions against thay submarines, Wallie?"

Second Skipper:—"Ay! I used to carry my bits o' bawbees, but I went an' bankit them this mornin', an' I'm no takin' ma best oilskins or ma new sea-boots."

First Skipper:—"O weel, ye'll hae practically naething tae lose but yer life."



A COMFORT TO THE SOLDIERS

# STAG CHEWING TOBACCO

The fine, rich flavour and lasting qualities of "STAG" have made this famous chewing tobacco a prime favorite all over Canada.

Our gallant Canadian boys at the front are enjoying its satisfying qualities.

SAVE THE COUPONS GOOD FOR PRESENTS

Extract of a letter from a Corporal at the front to a Suffolk Clergyman:—  
 "What hurt us most" he writes, 'was the poisonous gas, which made the air green and yellow, choking and poisoning men where they stood. Tobacco saved many lives in that battle. We began to feel choky, but put big chews in our mouths, and this caused us to expectorate the gas. Now whenever we notice the gas, we chew tobacco, which greatly helps.

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### THE 100TH OVERSEAS BATT. WINNIPEG GRENADIERS

Urgently Appeals to Young Men to Join this Popular Unit. An exceptionally fine type of men are joining. The Battalion offers splendid opportunity, good quarters, and a chance of speedy service

IN the strenuous work of enlisting the several new units required by the decision of the Government to place 500,000 men in the field, the activities of the 100th Overseas Battalion, Winnipeg Grenadiers, are very prominent.

Recruiting for this Battalion commenced on December 23rd, but the active work of formation was not commenced until January 1st of this year. There are now some five hundred men attached to the Battalion, and something like two hundred additional applications have been made but have been rejected on account of physical or other considerations. This implies that the standard of the 100th Battalion is a high one, as indeed it is, and it is one of the most marked features of this popular unit that an exceptionally high class of men are enlisting. They find in this battalion, not only an opportunity to effect their measure of service in clean and

comfortable quarters, but in thoroughly congenial company. The class of men joining the One Hundredth include almost every profession. There are in the ranks stockbrokers, contractors, many schoolmasters, bankers and college students. There are grain buyers and printers, railroad men and skilled artisans, while the farmers, well-to-do men many of them, are joining the Battalion in considerable numbers. "Like draws like," and it is found that men in the Battalion are by no means backward in speaking to their friends of the advantages of the 100th Battalion. It is rather interesting to know that so far the proportion of bank and other clerks is 18 per cent of strength, and a precisely similar propor-



Our First Concern

Kind hearts and thoughtful friends bring joy to the Boys at the Front on Mail Day. tion of farmers and ranchers, while tradesmen account for 10 per cent of the number.

A word might be said of the excellent quarters allotted to this Battalion. They are in the Johns-Manville Building on Arthur street, Winnipeg, just behind the Ashdown retail store, very central, very commodious and fitted up in the most convenient fashion. The first floor is allotted to officers' rooms, orderly room and quartermaster's stores. Excellent ablution arrangements are placed in the basement of the building.

The second floor is devoted to the feeding of the men. The kitchens are extremely well equipped, and as the Bat-

talion has secured the services of several experienced cooks the food served to the men could not be improved upon. Cold storage rooms and a grocery store keeps the food in good condition, and it would be difficult to find a unit with better feeding arrangements and more satisfied men than the 100th Battalion.

The third floor is occupied by regimental rooms, sergeants' mess and the medical officer's quarters, while the greater portion of the floor is occupied by a commodious recreation room for the men. This is highly appreciated, and is always used in off-duty hours by a large number of men who here find an opportunity of companionship in light, cheery surroundings. A well stocked canteen occupies one side of the room, and a library of some three hundred books, donated by generous citizens, is in continual use by the troops.

The sleeping quarters and company orderly rooms occupy three floors of the building. These sleeping quarters are roomy, light and airy, and an unusual feature is that the men are provided with individual beds in place of sleeping on pallets on the floor or in permanent wooden bunks. Apart from the comfort and additional cleanliness gained, this arrangement is more convenient, as the beds are readily moved from place to place and the space used as occasion may require.

It has been found that a great many men in the country are interested in the 100th Battalion and wish to join, and while it is not desired in any way to disturb the training in local areas, yet it is realized that a great many men cannot attach themselves to local units, and would very much prefer to be in the city for training in a full battalion. To these the advantages offered by the 100th Battalion are proving very attractive. There are still opportunities for promotion, and such men would do well to secure information concerning the One Hundredth, either by mail or by personal visit to headquarters. They can readily see for themselves that it would be impossible to find a battalion where speedy training could be secured in such adequate quarters and decidedly suitable surroundings. A strong esprit de corps ensures a high degree of activity and efficiency. Visitors to the City of Winnipeg speedily see that a live battalion is being recruited, as at almost every point of advantage, are displayed the posters, pamphlets and advertising mate-

## Universal Metallic Case Flashlight



Case is made of steel. Cannot short circuit.

A happy medium between the large and unhandy cases and the smaller ones.

90c

PREPAID with Battery

Length 6 1/2 in. Head 2 1/4 in.

Takes the regular No. 700 2-cell Flashlight Battery at 15c each for renewals plus postage.

This is the greatest flashlight value ever produced. The light is absolutely the finest ever obtained, due to the "Superior" reflector.

Houston & Co. Ltd. 12 Cumberland Bldg., WINNIPEG

Name this magazine when writing advertisers

## Twelve Months of this Magazine for One Dollar

NERVE TROUBLES from Drink-Drugs-Tobacco successfully treated by the Keesey Cure, without suffering. It is given only by doctors at the Institute of the patient's home. Address-676 Jessie Avenue, Winnipeg.

22-inch Switch \$1.98 Special

**Switches Hair Goods**

Ladies send us your combings. We make them up into switches at 50c per ounce.

We will add new hair as desired to combings at from \$2.00 upwards.

Satisfaction Guaranteed

**Elite Hairdressers Parlors**

207 Enderton Building, WINNIPEG

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**MADE IN CANADA**

**GILLETT'S**  
100% POWDER  
**LYE**  
E.W. GILLETT COMPANY LIMITED  
WINNIPEG TORONTO CHICAGO

Used for making hard and soft soap, for softening water, for cleaning, disinfecting and for over 500 other purposes.

REFUSE SUBSTITUTES.

E.W. GILLETT COMPANY LIMITED  
WINNIPEG TORONTO CHICAGO

**BUTTERMILK CAKE**  
One pound of flour, three ounces of lard, three ounces of butter, three ounces of currants, three ounces of raisins, half a teaspoonful of spice, one teaspoonful of sugar, one teaspoonful of carbonate of soda, half a teaspoonful of salt, and half a pint of buttermilk.  
Mix the soda with the milk, and mix together with the other ingredients. Bake for about an hour in a moderately hot oven.

rial of the 100th Battalion. The posters are highly artistic and impressive, being chiefly procured from Great Britain, where recruiting posters have played so prominent a part in raising the vast armies now in training. The officer commanding the One Hundredth is Lieut.-Colonel J. B. Mitchell. A distinguished officer, now attached to headquarters, will shortly be posted as second-in-command. Major G. M. Reid is junior major, and Lieut. G. C. James, late of the British Grenadier Guards, is adjutant. Headquarters, 92 Arthur street, Winnipeg.

**A GOOD CAKE TO SEND TO THE SOLDIERS**

One and a half pounds of flour, half a pound of margarine, half a pound of sugar, one pound of sultanas, one pound of currants, half a teaspoonful of ginger, two eggs, one small nutmeg, half the rind of a lemon, two teaspoonfuls of carbonate of soda. Mix all the dry ingredients together, put soda in half a pint of milk, mix thoroughly, and bake slowly for about two and a half hours.

**CHOCOLATE SPONGE SANDWICH**

Two eggs, their weight in sugar and butter, the weight of four eggs in flour, four table-spoonfuls of milk, two teaspoonfuls of baking-powder. Mix these ingredients well together, and bake in a hot oven in two sandwich-tins.

**Chocolate-Filling**—Three ounces of butter, five ounces of icing sugar, half an ounce of milk chocolate, two teaspoonfuls of milk.

Rub the sugar through a fine sieve and chop the chocolate, beat the butter to a cream, then work in the sugar. Dissolve the chocolate in the milk, let it cool, then stir in the butter and sugar. Mix all well together, and spread on one sandwich and put the other on top.

**A WOMAN'S TALK TO WOMEN**

Continued from page 44

yet, as the suffragists of Manitoba did, but they have worked harder than the suffragists of any other province of Canada, with the exception of Manitoba. It seems likely that they will do something definite in this crisis in the affairs of their province.

Many papers in the United States have published lengthy accounts of our victory, and in the old land there has been rejoicing that another part of the British Empire has proven that democracy is good enough for it.

**IN A FAIRY LAND OF FLOWERS**

Near Winnipeg is a flower garden that delights the eyes of everyone who sees it. Sweet peas, nasturtiums and all kinds of Manitoba blossoms seem to reach perfection under Mrs. Dumbrell's care for she has acquired a knowledge in the cultivation of flowers that is most enviable. Indeed she is a flower missionary for she shares her flowers most generously with others. Beautiful bouquets have found their way to my desk and many a tired lonely wage-earning girl in the city has been blessed with a gift of sweet peas so perfect that they seemed to have dropped from Heaven.

Knowing that our women readers would be interested in Mrs. Dumbrell's method of flower culture I asked her for two papers on gardening, and she has very kindly sent me them for this month's issue. I am sure all interested in flowers will find in them much useful information. Mrs. Dumbrell is so interested in the encouragement of flower culture that she says she will send a little package of seeds free to every woman who would like one. The requests may be sent to Mrs. Dumbrell, Headingly, Man.—P.R.H.

**A Busy Wife's Garden**

When our secretary wrote asking me to prepare a paper on gardening, it was not mentioned what kind of flowers the paper was to be on. So I concluded that you being busy housewives like myself, Hardy Annuals would be the best subject, as from the Hardy Annuals we get returns the same year as sown. Now we will take the Annuals as they come.

**Asters**

Asters are very easy to grow, and need very little care. Sow the seed

**You can't beat Old Dutch**

for taking rust and stains off knives



**The Empire Loan Company**

HEAD OFFICE: WINNIPEG, MAN.

**BALANCE SHEET, DECEMBER 31st, 1915**  
Presented at Annual Meeting Feb. 8th, 1916

ASSETS	
Loans on First Mortgages, with accrued interest.....	\$974,593.49
Real Estate .....	25,225.24
Office Furniture .....	1,100.00
Cash on hand and in Union Bank .....	14,015.41
Cash in Parr's Bank, London .....	1,081.09
Accounts Receivable .....	451.30
Municipal Debentures .....	3,500.00
	<b>\$1,019,966.53</b>

LIABILITIES	
To the Public—	
Debentures and Accrued Interest .....	\$305,403.22
Guaranteed Investments .....	26,195.05
Accounts Payable .....	2,503.14
Union Bank .....	7,000.00
Interest Collected in Advance .....	2,425.29
	<b>\$343,526.70</b>
To the Shareholders—	
Capital Stock (subscribed, \$638,700), paid up.....	\$675,956.51
Instalment Stock .....	6,931.75
Dividends on Stock, due Jan. 2nd, 1916.....	11,501.20
Reserve Fund .....	70,000.00
Balance Carried Forward .....	12,050.37
	<b>\$676,439.83</b>
	<b>\$1,019,966.53</b>

PROFIT AND LOSS ACCOUNT	
Credit—	
Balance from 1914 .....	\$ 1,188.51
Net profits for year after paying all expenses.....	57,459.08
	<b>\$58,647.59</b>
Debit—	
Dividends at 8 per cent.....	\$ 46,378.56
Apportioned to Instalment Shareholders .....	218.66
Balance carried forward .....	12,050.37
	<b>\$58,647.59</b>

**Donald Morrison & Co.**

ESTABLISHED 1904

GRAIN COMMISSION  
**GRAIN EXCHANGE**  
WINNIPEG

WE handle Wheat, Oats, Flax and Barley on Commission, obtaining best possible grades and prices. Our work is prompt, accurate and reliable. Let us handle YOUR shipments this season. Daily or weekly market letter on application.

References: Bank of Toronto, Northern Trust Bank and Commercial Agencies

You saw this advertisement in this magazine. Don't forget to say so when writing.

**If Your Horse Could Talk**

He would tell you that he can do lots more work when the wagon wheels are greased with

**MICA AXLE GREASE**

Mica Axle Grease fills the pores of the axle. Makes a perfect bearing surface. Reduces friction to a minimum.

Dealers Everywhere  
**The Imperial Oil Company Limited**  
BRANCHES IN ALL CITIES

**KEEP THEM WORKING**

A horse in the field is worth two in the barn. You can't prevent Spavin, Ringbone, Splint, or Curb from putting your horse in the barn but you can prevent these troubles from keeping horses in the barn very long. You can get

**KENDALL'S SPAVIN CURE**

at any druggists at \$1 a bottle, 6 for \$5, and Kendall's will cure. Thousands of farmers and horsemen will say so. Our book "Treatise on the horse" free. 104

Dr. B. J. KENDALL CO., Essexburg Falls, Vt.

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**600,000**

**Seedlings and Cuttings for Sale**

this spring, and in order to encourage apple growing, I will give away free this spring 1000 Hibernia Apple and 1000 Transcendent Crab Grafts. These are grafts and should grow two feet this season. I will also give away free 500 Iris, one of our most beautiful and hardy perennials. My price for Willow cuttings is \$4.50 per 1,000; \$38.00 for 10,000, express prepaid on all orders of \$3 and over.

I have a fine stock of trees, shrubs and fruits. Anything that is not satisfactory may be returned at once and I will refund the money. My prices are 35 p.c. less than agents' prices. Send me your address and I will send you my price list with full printed instructions.

John Caldwell Est. 24 Years Virden, Man.

Perfectly Pure,  
Very Palatable and  
Absolutely Non-Intoxicating



**Drewry's  
Dry  
Ginger  
Ale**

Put up in Cases of  
Pints and "Splits"  
At your Dealers,  
or direct from  
**E. L. DREWRY  
Limited  
WINNIPEG**

**Automobile  
Engineering**

**TAUGHT DIRECT ON OUR OWN  
PREMISES**

by a staff of well-known experts in every detail of automobile construction and driving.

Success assured in the briefest possible time. Our terms are extremely moderate and we **Guarantee Perfect Satisfaction.**

Write or call for full particulars.

THE WINNIPEG SCHOOL OF  
**Automobile Engineering**

503 Furby St. Winnipeg

thinly in a box, place in a sunny window or hot bed. Aster seeds germinate very fast. The young plants appearing in three to six days after sowing. When the second pair of leaves appear, transplant into a box of soil similar to that which they were taken from, then when there is no more danger from frost, put into the ground where they are to bloom. Give them plenty of room. The soil should be very rich for asters as they are gross feeders. Some asters need support as the blossoms are so heavy they are very apt to be beaten down by the heavy winds that we very often have. We had hundreds of fine asters spoil like that last year. As for the best kinds or varieties: The Daybreak is very good for early flowers, but for main beauties I like Enchantress and Invincible which are hard to beat.

**Centauria (or Sweet Sultan)**

These are showy, free flowering plants. We had these for the first time last year and they were beautiful. The flower heads resemble somewhat thistle heads, but are by no means prickly. They make up nicely in hand bouquets and were taken by several persons for asters. There are quite a number of shades and colors in Centaureas ranging from white and light blue to a delicate pink. We found them very easy to raise. The seed was sown in the open about the first of June. As they are hardy, I believe they could be sown earlier than that and do well. If the flowers are cut just when they are opening the flowers will last nearly two weeks.

**The Antirrhinum (or Snap-Dragon)**

These we raise for the mixed border, and find them very curious. Little children take much fun from them when in bloom by squeezing the sides to see the mouth open and shut again. We start the seedlings in the hot bed, but Snap-dragons are not very satisfactory as a cut flower.

**Clarkia**

Makes a very pretty border or edging for the flower beds. These annuals are very easy to grow. Sow the seed where the plants are to bloom. A friend of mine last summer had her perennial bed bordered with Clarkia, and it was a beautiful sight. A mass of pink about a foot wide. So I am trying Clarkia myself this year.

**Annual Chrysanthemums**

These are very desirable plants, as they are strong growing and make fine large bushes, which act to some extent as a wind break. The colors are white and yellow. Usually double. There is also the single Chrysanthemum or Painted Daisy, and some are semi-double. These seedlings are raised in the hotbed, although they do very well sown in the open ground. The seed germinates very fast from five days to a week. Try a few Chrysanthemums.

**Orange Daisy**

Now these plants have been very much advertised. It certainly is a showy annual. But I cannot see very much beauty in them myself. I would rather have the old common Marigold. The odor is not so offensive as the Orange Daisy. We raised the seedlings in the hot bed, but they do well if sown in the open ground when the soil is warm.

**Dahlias**

Will grow very easily from seed, coming up within a few days from sowing, if sown in a gentle hot bed. About the first of April. Transplant a couple of times before setting out into the garden. You will have beautiful flowers the same year. Especially the single Dahlias, treat these plants as you would potatoes. But being they grow so tall and rank in good soil, they need to be staked to prevent the wind breaking them off. Of course I am concluding that you live on the open prairie and have no wind breaks.

**Dianthus or Pinks**

These are easily grown, coming up a few days after sowing the seed, and can be treated as you would stocks.

**Mignonette**

This is an old favorite with almost every one, and is very easy to raise. But it does not take very kindly to transplanting. We make a small trench or furrow along the border where we want it to bloom and sow the seed thinly in good soil giving the seedlings lots of room, and are rewarded with an abundance of blossom.

**A Daily Treat—  
Always Acceptable and Delicious.**

**"SALADA"**

**The Tea of all Teas.**

E 152

Black, Green  
or Mixed

Get a package and enjoy  
a cup of Tea "In Perfection".

You saw this advertisement in this magazine. Don't forget to say so when writing.

**RENNIES  
SEEDS**

PUREST-CLEANESE  
MOST RELIABLE  
GET CATALOGUE  
AT BEST DEALERS  
OR DIRECT  
394 Portage Ave., Winnipeg

You saw this advertisement in this magazine. Don't forget to say so when writing.

*The Story of a Sick-nose,*

*At the beginning of the  
yr 1912, in fact on New  
at day this girl of 17*

The above is a photographic reproduction of the handwriting of an intelligent and well educated girl who suffered untold misery and pain over a course of years at the hands of various doctors who led her friends to believe they could cure her of her trouble. At last she was advised to see Dr. Munro, with the result that after being under the care of CHIROPRACTIC treatment for a short time, she was completely restored. This result was obtained without the use of medicines, or "electricity" or any other than perfectly natural handling by one who has learned to work in harmony with the laws of Nature. This girl's name is Ethel B. Hawken, a Manitoba lass, and she will be happy to give the plain facts of her case to any one. Underneath is the handwriting of another young lady (Mary E. Andrew), who was also treated by Dr. Munro under similar circumstances. She has taken part with Ethel Hawken in helping her to write a concise account of her whole troubles and ultimate cure.

*This was kept up for three weeks  
the last week he started to massage  
her spine with mercury which  
after about three days treatment  
caused her body to break out in  
such raw rashness and her mouth*

What Dr. Munro has accomplished for these two patients, he can almost certainly do for you. Write or see him and give briefly the outstanding features of your trouble.

**Dr. H. J. Munro 31 Steele Block, Winnipeg, Man.**  
PHONE Main 354

You saw this advertisement in this magazine. Don't forget to say so when writing.

SHIP YOUR  
**FURS AND HIDES**  
TO **McMILLAN FUR & WOOL CO.**  
WINNIPEG, MANITOBA

Write for Circular

You saw this advertisement in this magazine. Don't forget to say so when writing.

**CA**  
We  
Zinc,  
Rags,  
Boots

**Thom  
JUNI**  
Price

**Get a**  
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and DRY  
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**FREE**  
Those who  
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Book by send  
post-card to Sa  
Montreal.

### CASH FOR TRASH

We buy Old Brass, Copper, Zinc, Lead, Auto Tires, Bones, Rags, Tailors' Clippings, Rubber Boots and Shoes, Hides and Furs

**Thompson Commission Co.**  
JUNK HIDES FURS  
Corner Princess & Alexander  
WINNIPEG

### Get a Farm of Your Own

**TAKE 20 YEARS TO PAY**  
if you wish. The land will support you and pay for itself. An immense area of the most fertile land in Western Canada for sale at low prices and easy terms, ranging from \$11 to \$30 for farm lands with ample rainfall—irrigated lands from \$35. Terms—one-twentieth down, balance within twenty years. In irrigation districts, loan for farm buildings, etc., up to \$2,000, also repayable in twenty years—interest only 4 per cent. Here is your opportunity to increase your farm holdings by getting adjoining land, or secure your friends as neighbors. For literature and particulars apply to:

**ALLAN CAMERON, General Supt. of Lands,**  
Desk 17, Dept. of Natural Resources, C.P.R.,  
CALGARY, ALTA.

### WOOL FURS HIDES

If you want quickest returns and most money for your Furs, Hides, Wool, etc. ship them to

### FRANK MASSIN

BRANDON, Man.

Write for Prices and Shipping Tags



### SAVORY & MOORE'S BOOK

Messrs. Savory & Moore, Chemists to the King and makers of the well-known Infants' Food, issue a little Book entitled "The Baby," which gives a great deal of useful information on the Care and Management of Infants.

#### A USEFUL GUIDE

The book contains hints on Feeding, Teething, Development, Infant Ailments, and such matters as Sleep, Exercise and Fresh Air, which are so important for baby's well-being. It also contains a chart for recording baby's weight, a dietary for older children, and recipes for simple nourishing dishes. It forms, in fact, a useful mother's guide, which should find a place in every home. It is not intended to take the place of medical advice, when such is needed, but it will often serve to allay needless anxiety, and indicate the right course to be pursued.

#### FREE TO MOTHERS

Those who are genuinely interested in the subject may obtain a Free copy of the book by sending name and address on a postcard to Savory & Moore, P.O. Box 1001, Montreal.

## A SURE WINNER TRY THIS LITTLE "NUTHIN"

A SONG THAT IS SURE OF POPULARITY ON ACCOUNT OF ITS SIMPLICITY IN WORDS AND MELODY



The following list of songs will be found delightful for quiet evenings at the fireside:—

- |  |                 |  |   |                                   |
|--|-----------------|--|---|-----------------------------------|
| Love Bells. C. Db, Eb, F                 | Dorel           | <b>PATRIOTIC NUMBERS</b>   | Love Eternal. Eb, F, G                        | Stephen Adams                     |
| All Joy Be Thine. G, Ab, Bb, Db          | Sanderson       | <b>For Concerts, Entertainments, Red Cross and Recruiting Meetings, etc.</b> | Father of Light. Eb, F, G, Ab                 | Stephen Adams                     |
| Garden of Your Heart. F, Ab, Bb          | Dorel           | Canada Ever! F, Ab, Bb   | God That Madest. Db, D, Eb, F                 | Stephen Adams                     |
| Little Road Home. The. D, Eb, F, G       |                 | Canadians Follow the Drum  | Lead Kindly Light. Db, Eb, F                  | Wilfred Sanderson                 |
| Billy Boy. E, G minor                    | A. H. Brewer    | John Bull. D, Eb, F  | Neater My God to Thee. F, G, Ab               | Wilfred Sanderson                 |
| Fairy Pipes. The. F, G, A, Bb, C         | David Ennabel   | Deadliest Army. The. A, Bb, D, H. Trotter                                    | When You Come Home. D, Eb, F, G               | Lewis Carey                       |
| Friend o' Mine. F, G, Ab, Bb, C          | Brower          | Shipmates o' Mine. F, G  | On His Majesty's Service. F, G, J. Trevalsa   | Robert Coverly                    |
| In An Old-Fashioned Town. C, D, Eb, F, G | W. Sanderson    | Trumpeter. The. F, G, A, C   | Soldier, What of the Night? C, D, F. Allitson | Laura Lemon                       |
| Little Playmates. F, Gb, Ab              | E. Squire       | Up from Somerset. Bb, C, D, W. Sanderson                                     | There's a Land. Db, Eb, F, G. (new ed.)       | Louis Carey                       |
| Until. Db, Eb, F, G                      | Ellen Tuckfield | Veterans' Song. The. C, D, Eb, F   | When You Come Home. D, Eb, F, G               | Robert Coverly                    |
| When My Ships Come Sailing. F, G, Ab, Bb | W. Sanderson    | When You Come Home. D, Eb, F, G  | On His Majesty's Service. F, G, J. Trevalsa   | Laura Lemon                       |
| When You Pass. Eb, F, G                  | Dorel           | When You Come Home. D, Eb, F, G  | Soldier, What of the Night? C, D, F. Allitson | Louis Carey                       |
| When You Come Home. D, Eb, F, G          | W. Sanderson    | You and I (Cradle Song). Bb, C, D  | Who's That Calling? C, D                      | Allitson                          |
|  | W. H. Squire    |  | England's Call. Bb, C                         | Wilfred Sanderson                 |
|  | Lara Lehman     |  |   |                                   |
| Holiday Sketches. C. Lucas               |                 | <b>PIANO NUMBERS</b>   | Fantastic Waltzes. Eville                     | Evil/Sy Boots (Fox Trot) McAll    |
| Rustic Sketches. J. R. Morris            |                 |  | Evil/Sy Boots (Fox Trot) McAll                | Evil/Language des Fleurs. Roberts |
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#### Nasturtiums

We cultivate both the climbing and dwarf Nasturtiums. The Nasturtiums are about the only flower that throws an abundance of blossoms in poor soil. I have notice that if the soil where Nasturtiums are planted is very rich the foliage is very rank with very few flowers, if any. If you want blossoms, plant in poor soil. What is prettier than a bowl of Nasturtiums honestly put in with a little of its own foliage? These make a very handsome centre piece.

**The Nicotina or Sweet Tobacco Plant.**  
These seedlings need to be raised in the hot bed, or a sunny window. The seeds take some time to germinate, but the plants when in bloom are very sweet smelling and are very stately looking in the evening when the blossoms are open. Of course you all know that unless it is a dull day the Nicotina does not bear a very brave appearance, or are they much good for decorative purposes. But on account of their sweet odor by all means have a few plants of Nicotina.

#### Pansys

Who does not know and love the Pansy or "Heartsease" as we called it in England. And it seems hardly necessary to mention how to grow them. Everyone seems to succeed with them. Sow the seed in a gentle hot bed or a sunny window. Do not let the seedlings dry out (and that's a fault I find with window seedlings.) When 3 or 4 leaves have appeared transplant into another box about 2 inches apart. When the weather permits transplant into their permanent places in the open ground. Give lots of room and good rich soil as Pansys are like Asters, they are very heavy feeders.

#### Phlox Drummondii

These plants we usually sow in the open bed or border when all danger of frost is past to hurt them. Thin out so as to have strong plants and abundance of bloom. When a few inches high they will start to bloom and keep it up till heavy frosts. The Phlox makes a very serviceable cut flower, as it keeps fully two weeks after cutting. The Phlox mixed with a little Gypsophila make a very attractive table decoration and are very easy to care for.

#### Poppys

These do not have a very pleasant odor, but make a pleasant change as they are so gaudy and cheering. They also make a pretty centre piece, a little Gypsophila give it a very lacy look. The culture is very simple. The seed being sown where they are to bloom, thin out if too thick.

Conclusion of Mrs. Dumbrell's article, together with her second paper, will be found in our next issue.—Ed.

## The Verdict

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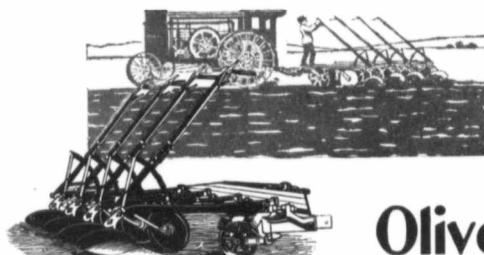
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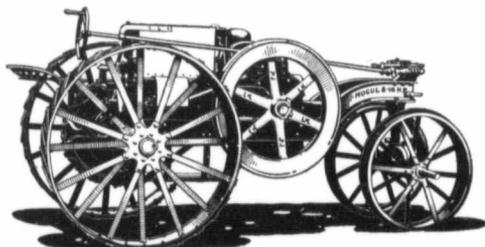
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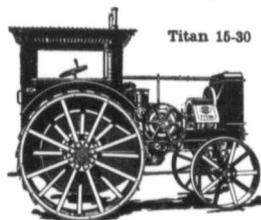
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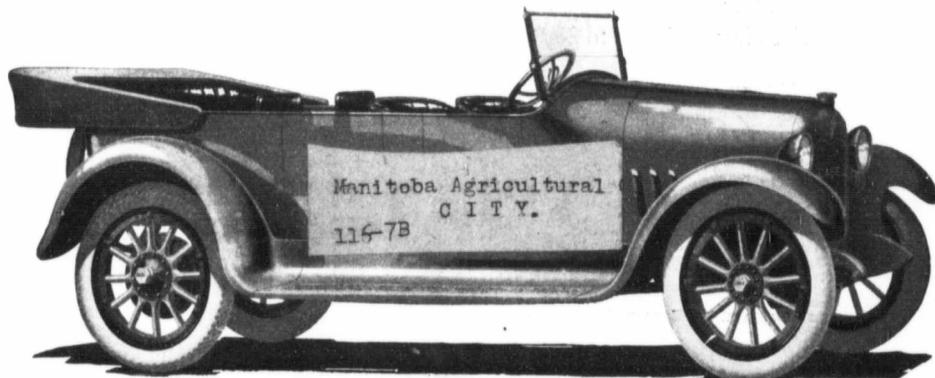
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