

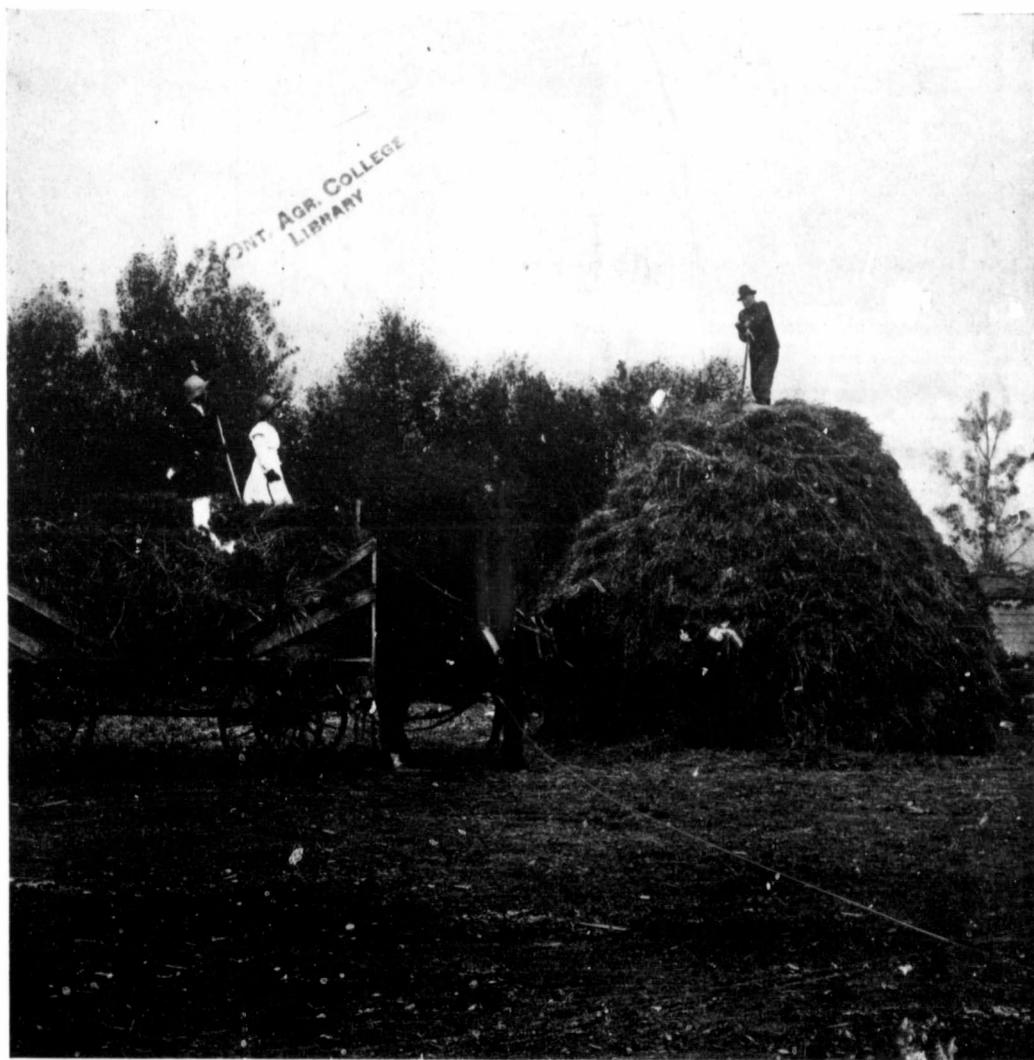
Sept. '18

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the CANADIAN THRESHERMAN AND FARMER

WINNIPEG CANADA
SEPTEMBER
NINETEEN EIGHTEEN

BETTER FARMING — BIGGER CROPS —



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

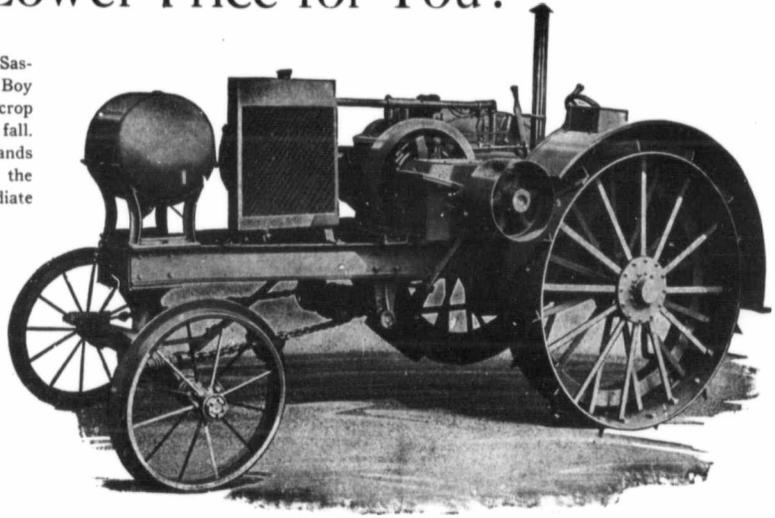
Cancelled Orders and Big Stock Mean Lower Price for You!

A number of farmers in Alberta and Saskatchewan who ordered Waterloo Boy Tractors now find that because of their crop conditions they cannot take delivery this fall. This leaves a large stock on our hands which we do not wish to carry over the winter, therefore we offer for immediate sale

42 Waterloo Boy Tractors

AT A SPECIAL PRICE

These are regular stock tractors, brand new, and fully covered by the Waterloo Boy guarantee. The only reason a special price is offered is that we do not want to carry these tractors in stock over the winter. Only 42 tractors will be sold at the special price. If you want to be one of the lucky buyers you must make your application early—TO-DAY. Write now for full details and special price.



For Economic Operation—for Greater Power, Endurance and Reliability You Need This Tractor.

Waterloo Boy Kerosene Tractor of Canada, Limited, Winnipeg

Read This Letter From Salina, Kansas, Proving the Giant Power of the HART-PARR TRACTOR

J. GOTTING, CHAIRMAN
MADISON, MO.

H. B. DINWIDIE, TREASURER
MOLINE, ILL.

DEPT. PARRETT, SECRETARY
CHICAGO, ILL.

COMMITTEE

National

1918

Tractor Farming Demonstrations

Demonstration

A. E. HILDEBRAND, MANAGER

July 29-Aug. 2

Salina, Kansas, Aug. 2, 1918.

HART PARR CO.,
CHARLES CITY, IOWA.
GENTLEMEN:--

We beg to report as follows on a brake horse power test today of your Hart-Parr 30 Tractor No 8693:

Length of test: 30 min. at constant load.
Average Motor speed: 731.8 R.P.M.
Average B.H.P. 31.13

RESPECTFULLY SUBMITTED:

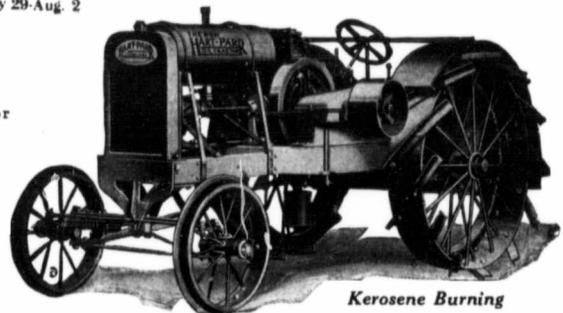
OBSERVERS:
J. E. DAVIDSON
R. H. JOSE
C. K. SHEDD

Oscar Vogesen
C. K. Shedd
ENGINEERS IN CHARGE.
A. E. Hildebrand
MANAGER OF DEMONSTRATION.

I certify that the above test was made at 12.30 P.M. when Government thermometer was at 109 degrees in the shade and that at no time during this test was the temperature of water in the radiator over 175 degrees Fahrenheit.

A. W. Patrick
MANAGER HART-PARR SERVICE

In the big demonstration with 173 other tractors the HART-PARR proved its superiority for deep plowing, pulling three-bottom seven inches deep at three miles per hour. The ease with which it pulled its load on Kerosene developing more than 31 h.p. while running below its normal speed was the wonder of the demonstration.



Kerosene Burning

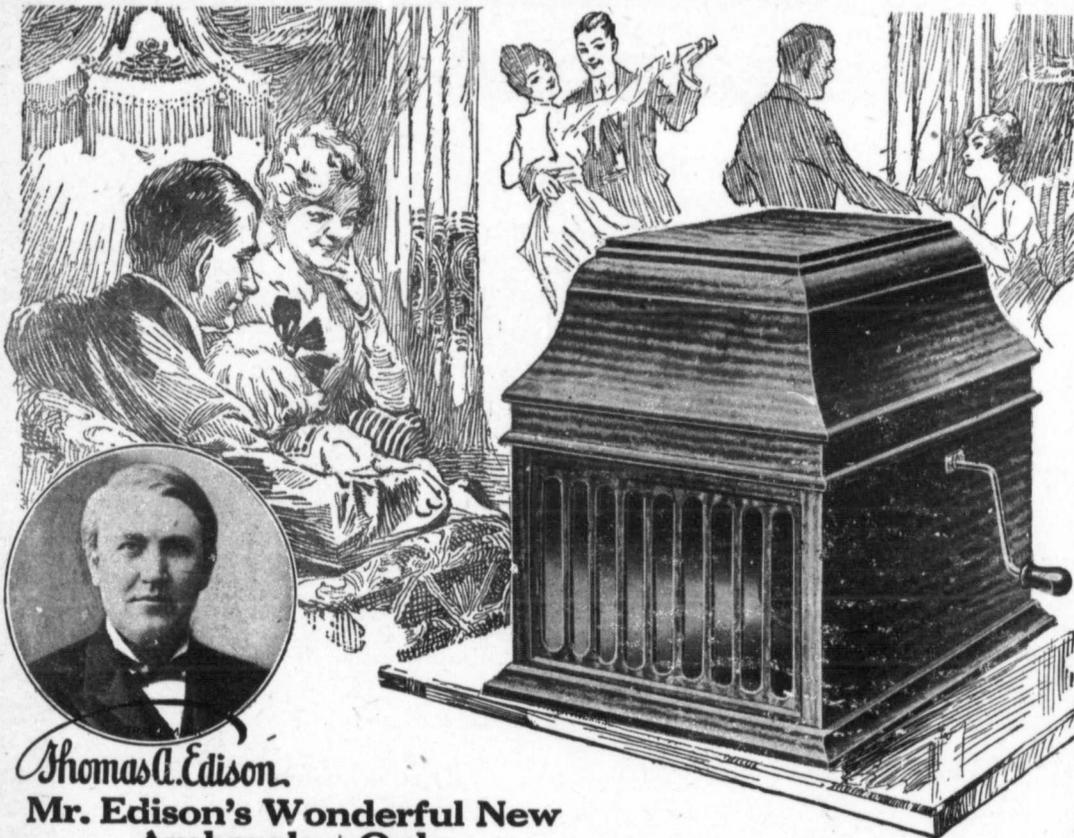
The New Hart-Parr Tractor is Guaranteed to do as Much or More Work on a Gallon of Kerosene as Can be Done on Gasoline.

For plowing, seeding, hauling, belt work, or any other farm jobs that require power you need the Hart-Parr because it does so much work at the very lowest cost.

WRITE TO-DAY FOR FULLY ILLUSTRATED FOLDER

Hart-Parr of Canada, Limited

Winnipeg
Saskatoon
Calgary
Regina



Thomas A. Edison.

Mr. Edison's Wonderful New
Amberola—Only

\$100 After Trial!

Yes, we will send you the New Edison Amberola, the product of the world's greatest inventor's genius, the phonograph with the wonderful diamond stylus reproducer and your choice of the latest Diamond Amberol Records on free trial without a penny down. On this offer you can now have the genuine Edison Amberola, the instrument which gives you real, life-like music, the finest and best of all phonographs at a small fraction of the price asked for imitations of Mr. Edison's great instrument.

Edison's Favorite Invention For years, the world's greatest inventor worked night and day to make the music of the phonograph true to life. At last his efforts have been crowned with success. Just as he was the first to invent the phonograph, so is he the only one who has made phonograph music life-like. Read our great offer.

Rock-Bottom Offer Direct!

If, after the free trial, you decide to keep Mr. Edison's superb new instrument, send us only \$1.00. Pay the balance on the easiest kind of monthly payments. Think of it—a \$1.00 payment and a few dollars a month to get this wonderful new style outfit—Mr. Edison's great phonograph with the Diamond Stylus reproducer, all musical results of the highest priced outfits—the same Diamond Amberol Records—yes, the greatest value for \$1 down, balance on easiest monthly terms. Convince yourself—free trial first! No money down, no C.O.D., not one cent to pay unless you choose to keep the instrument. Send coupon now!

A Happy Home

Happiness is life—and real happiness is found only in a real home. And by a real home I do not mean a house with a yard or farm around it. Oh, no! A real home is the place where the happy, united family gather together for mutual enjoyment and recreation. And the Edison Amberola makes this possible, for it stands expense as the greatest home entertainer. It will mean more than entertainment and excitement, more than an hour of amusement, yes, it will mean genuine pleasure of the lasting sort—helpful entertainment and culture of the most beneficial kind. It will mean the family united—a new home.



Entertain Your Friends

Get the New Edison Amberola in your home on free trial. Entertain your family and friends with the latest up-to-date songs hits of the big cities. Laugh until your sides ache at the funniest of funny minstrel shows. Hear the grand old church hymns. Hear the crackling brass bands, the waltzes, the two-steps, the polka, the duets and quartets. You will sit awe-stricken at the wonderful grand opera as sung by the world's greatest singers. You will be moved by the tender, sweet harmony of quartets singing those old melodies that you have heard all your life. Take your choice of any kind of entertainment. All on free trial. Then, after the trial, send the outfit back at our expense if you choose. Or keep it on our great rock-bottom offer. Send the coupon today!

To F. K. BABSON, Edison Phonograph Distributors,
Dept. 376 355 Portage Ave., Winnipeg, Man.

Gentlemen:—Please send me your New Edison Catalog and full particulars of your free trial offer on the new model Edison Amberola.

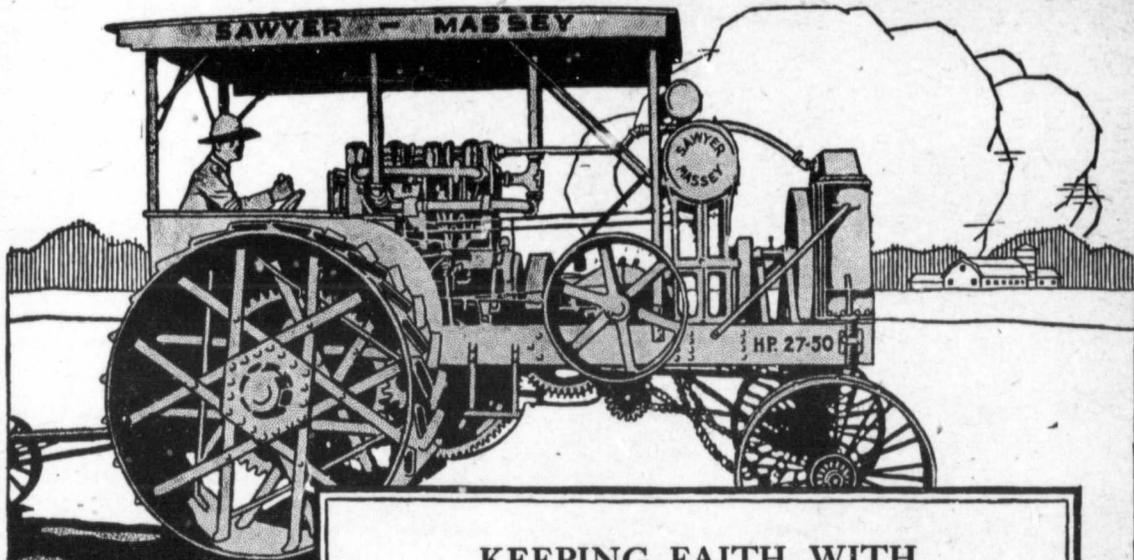
Name _____

Address _____

**New Edison Catalog
FREE!**

Your name and address on a postal or letter (or just the coupon) is enough. No obligations in asking for the catalog. Find out about Mr. Edison's great new phonograph. Get the details of this offer—while this offer lasts. Write NOW!

F. K. BABSON, Edison Phonograph Distributors
Dept. 376 — 355 Portage Avenue, Winnipeg, Man.
United States Office: Edison Block, Chicago, Ill.



KEEPING FAITH WITH CANADIAN FARMERS

YOU have learned to put confidence in every Sawyer-Massey farm machine because we always have been cautiously careful before offering you any machine bearing our name and endorsement. You buy by and rely on our reputation for good goods and fair dealing.

Your confidence is our most valued business asset. We have worked hard and dealt fairly to win it. The same methods that gained your favor for Sawyer-Massey products are in force to retain your friendship.

Our study of farming conditions in Canada has helped us in building Sawyer-Massey Gas-Oil Tractors. It reduced the necessity for experimenting and eliminated theory. We knew what you required; we had the engineers, the material and the equipment, so we built the best tractors we could. These machines are doing good work, are giving the kind of service you must have.

Sawyer-Massey Gas-Oil Tractors have four-cylinder motors; four wheels; air cleaning equipment; power delivery to both traction wheels; positive mechanical cooling. 75% of the tractor's weight rests on the rear wheels, assuring traction under all conditions and steady pull at the draw-bar. These features are standardized, fixed upon by all our engineers as necessary and correct for practical work.

Sawyer-Massey Gas-Oil Tractors are built in four sizes: 11-22 H.P., 17-34 H.P., 20-40 H.P., 27-50 H.P. Bulletins describing any of these sizes forwarded on request.

SAWYER-MASSEY COMPANY LIMITED

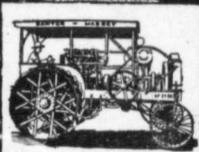
Head Office and Factory: HAMILTON, ONTARIO

Branches and Warehouses:

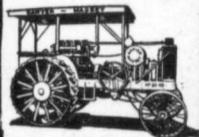
WINNIPEG REGINA SASKATOON CALGARY

H. S. BOWDEN, Distributor, Edmonton

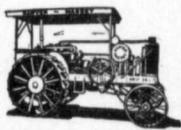
We build also Sawyer-Massey Steam Tractors and Threshers and will supply full information on request.



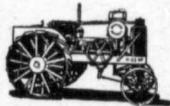
27-50



20-40



17-34



11-22

Four Cylinder Sawyer-Massey Gas-Oil Tractors *Kerosene Burning*



Vol. XXIII

WINNIPEG, CANADA, SEPTEMBER, 1918

No. 9

FINANCING THE FARMER

Through the medium of the Manitoba Rural Credits Act. The true story of a pronounced success in Shell River Municipality.

THE men of the Middle Ages were just as eager in the pursuit of gold as the high-fliers of the twentieth century. They fooled themselves for a time, as we do, with certain will-o-the-wisp ideas for getting it without digging. They followed the practice of alchemy, for instance, which, as a then recognized department of natural science, had for its objective the transmutation of the baser metals into pure gold.

But if the alchemist is one of the dead door-knobs of the long night of ignorance, we have still with us those who think very highly of "the unearned increment" and never miss an opportunity to secure it. Money and how to get it in one form or another is the perennial problem of our race, and rightly appreciated, it is a problem worthy of the best that is in human nature.

for it is only by the right use of money that good men can adequately discharge the burden of their souls.

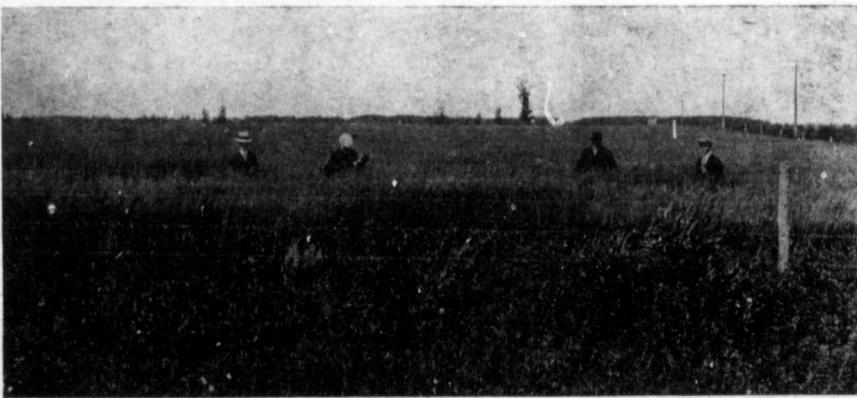
What tragedies—and comedies—have been written around the simple need or desire for the use of a little ready money on occasion, coupled with the physical impossibility of raising the loan. Practically every man who will read this has had his own "hard experience" of the kind, and if he is a farmer, he will probably say that whatever the difficulties that have dogged the footsteps of the average man, they are as nothing to the restrictions that have hamstrung the Canadian farmer in his

relationship to the banking act of his own beloved country.

From our own observation and knowledge of its working details, we would say that he is about right, and that until recent date there were few greater anomalies in our legislative blue books than the Canadian banking act, as it applies, to the farmer.

It would serve no useful pur-

and it is due to the legislative assembly of the Province of Manitoba to say that to it belongs the credit of having brought it about—without bloodshed, bitterness, or even so much noise as would disturb a sleeping terrier. Further, that it was initiated and finally placed on the statute book is due to the "heart brains and indomitable energy" of one member



A Shell River wheat field, the owner of which is a member of the local Rural Credit Society. The two men on right are Premier Norris and J. E. Sirrett, secy. of the Society. Photo by courtesy of Farmer's Advocate.

pose to recapitulate what the country has suffered and how its progress in agricultural development has been hindered by the want of free capital or satisfactory credit facilities. Everyone has his own mental photograph of the man (it may be himself) with everything necessary to complete success, in heart, brains and energy, but can make little, or no headway because of the fact that he has got to spend a half or more of his working hours in running around trying to raise a few hundred dollars in hard cash or its equivalent.

Now there apparently has come an end to this sort of thing,

"The Rural Credit Societies Act," it seemed, met the case, and after passing through the usual incubating period of discussion—always kept at a healthy equable temperature—it finally became law and is in fact the necessary corollary to the "Manitoba Farm Loans Act."

Provisions of the Act

The Manitoba Rural Credits Act provides for loans within a municipality or district in which fifty men agree to form a society, each of whom is required to sub-

scribe \$100 to the capital stock paying in not less than 10 per cent of same. To this fund, the municipality may subscribe not more than one-half of the total amount of capital stock subscribed for by individual shareholders, while the provincial government subscribes in the same proportion and on the

same basis as the municipality.

The board of directors shall consist of nine members, three of whom are elected by the individual subscribers, three by the municipality and three by the government, one of the latter being a graduate of an agricultural college, whose services are at the society's call in an advisory capacity.

According to the act, the purpose of the society, and the conditions on which a loan may be secured, are set forth in the following manner:

(a) To procure short term loans for members, for paying the cost of farming operations of all

of that body of business farmers, of whom more later.

Readers of this magazine had already become familiar with the "Manitoba Farm Loans Association," through which, what are known as "long term" or "mortgage" loans are at the disposal of farmers, granted under mutually satisfactory conditions up to 50 per cent of the farmer's equity in land, etc. This scheme met a long-felt want, but it only served to accentuate the need for something else of the kind, viz., a "short term" assistance covering something like the period of one crop season, renewable if necessary.



Drilling well at Roblin with money borrowed from Rural Credit Society
(Photo courtesy of Farmer's Advocate)

kinds and increasing the production of farm products, and particularly for the following purposes:—

- (1) The purchase of seed, feed and other supplies;
- (2) The purchase of implements and machinery;
- (3) The purchase of cows, horses, sheep, pigs and other animals;
- (4) The payment of the cost of carrying on any farming, ranching, dairying, or other like operations;
- (5) The payment of the cost of preparing land for cultivation;
- (b) To act as agents for the members in purchasing supplies and selling products;
- (c) To promote co-operation for the improvement of conditions of farm life, and to extend its application to all residents of the districts.

A farmer wishing to borrow money through the society must first become a member before his application is considered. The board of directors pass upon all applications, and the amount of the loan granted is governed by the security offered after a statement has been produced by the farmer indicating his actual financial standing. The money is then obtained through the local bank or other financial institution, and transferred to the borrower upon signature of his note for the amount of the money

borrowed. All loans fall due December 31 of each year, but provision is made for renewals where the directors agree such will be in the best interests of all concerned.

The security obtained is one of the features that commends the scheme as a government measure. So unquestionable is this security and so safe is the guarantee of the members that no loss can occur to the government. In addition to the note of the borrower a certificate is filed with the county court clerk setting forth the amount of the loan and the purpose for which it was obtained. This applies as further security on the stock, implements, and personal property of the borrower. It is in this one particular that a farmer may much more readily borrow money through these societies than through the bank. On individual application to the bank, a farmer has nothing more than his own security and that of his backer, if demanded. Through these societies the borrower is backed by the entire subscribed capital of the society, by the municipal subscription to stock and by the government's subscription.

The Shell River Success

As there's nothing so good as a great example, we get away at once from generalities and come to something definite which has been accomplished when we illustrate the working of the municipality of Shell River. This mu-

unicipality of 57, and started work in earnest on 20th April. On the date of the visit above referred to, it had 85 members and several applications still under consideration, all those in excess of the charter members having come in unsolicited. The following is a brief summary of the society's operations since beginning on April 20th.

Capital authorized	\$20,000.00	
	Subscribed	Paid up
Stock subscribed by farmers	\$8,500.00	\$850.00
Stock subscribed by Government	2,500.00	250.00
Stock subscribed by municipality	3,500.00	350.00
	\$14,500.00	\$1,450.00
Number of shareholders at incorporation	57	
Number as at August 9, 1918	85	
Loans Passed Season 1918		
For putting in and taking off crop	\$16,496.00	
For new breaking	10,335.00	
For purchase of machinery	3,050.00	
For improvements	3,505.00	
For cattle, horses, etc.	9,205.00	
For floating liabilities	1,650.00	
	\$44,241.00	

The loans, totalling \$44,241.00, were granted to 64 farmers, and as illustrating the safety of these loans it will be interesting to state that the combined net worth of these 64 men over liabilities is over \$637,818, or an average of about \$10,000 each.

Personnel of the Society

J. E. Sirrett, B.S.A.—a graduate of Manitoba Agricultural College, took the initiative in forming the society, and was subsequently appointed organizing secretary by

vice-president, and Mr. Sirrett's appointment as secretary-treasurer was confirmed.

Applications for loans flowed in and at the first meeting of the board over 40 of these aggregating over \$32,000 were granted. Meanwhile, the local branch of the Union Bank of Canada had granted the society a line of credit of \$35,000 — later enlarged to \$50,000. The idea was "caught on" so completely in Roblin that several local men, recognizing the fine idea of the thing have taken shares merely to have the satisfaction of being lined up with it and who have no expectations of making use of the credit obtainable through the society.

As illustrating their appreciation of the service the act is rendering them, more than one farmer member of the society affirmed to individuals of the visiting party the financial aid obtained had advanced his progress five years. Said another: "If we had had a rural credit society here five years ago I would be lending money now instead of borrowing it." And some wonderful new breaking records were announced.

Unquestioned Security of Loans

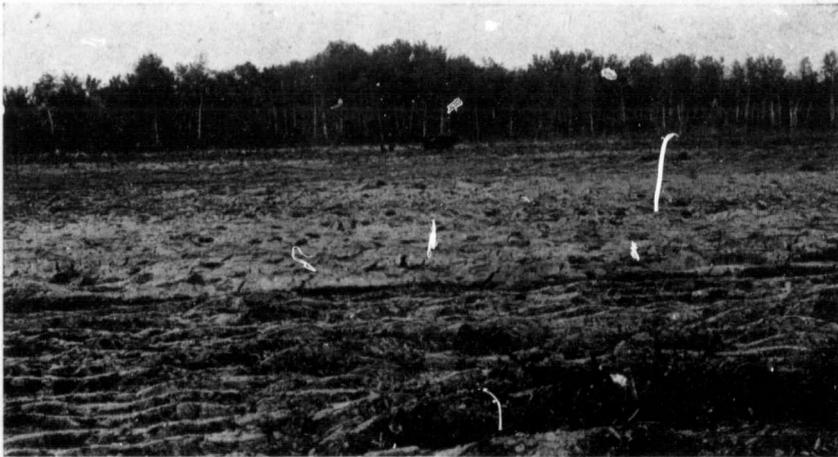
The business of considering and granting loans is handled with the utmost care and skill with the desire to withhold in no case where a man of good character seeks the advance for distinctly productive purposes.

If the board doubt the wisdom of the purpose for which a any particular member wants to borrow, he is advised in the most friendly spirit and the result in such a case has been mutually satisfactory.

Application for a loan is made on a regular form, on which is stated the amount of money required, the purposes for which it is intended to be used; the date of repayment, and the rate of interest.

The application for a loan is accompanied by a complete statement of the applicant's affairs. This includes the number of acres owned and the location; the number of acres broken; encumbrances, if any; a complete valuation of all the assets including farm lands, buildings, implements, livestock, supplies, cash and outstanding accounts.

A complete statement of liabilities



The sort of thing—heavy brush land—that is being broken up by the help of the Rural Credit Society

nicipality is in the northwest corner of Manitoba close to the Saskatchewan border. On August 9th a party of Winnipeg business chiefs, representatives of the government and newspaper men, paid a visit to Roblin, the bull's eye of the Shell River community, and the following, in brief, is what they found:

On 16th February of this year the Roblin Rural Credit Society was incorporated with a member-

an order-in-council. The requisite nine men who constitute the full board having been named by the farmers, the municipality and the government respectively, the board met and passed the necessary by-laws, authorizing the officers to do business with the bank and generally for the conduct of the meetings of the society. John Arnott, Reeve of Shell River Municipality, was appointed president; T. J. Kelly,

ties, including mortgages on farm property, chattel mortgages, lien notes against machinery or implements, amounts due the bank or other parties is also given. Statements as to the amount of fire, hail and life insurance are included, though these do not figure in the amount of assets and liabilities. This statement, made out by the applicant, is carefully scrutinized by the board, and revised if necessary.

The excess of assets over liabilities or surplus assets, as they are called, represent therefore the farmer's net financial worth. Some interesting facts may be brought out by such statements. A man starting up conservatively for instance will usually be found to have small assets and also small liabilities, while the plunger will show large assets but also heavy liabilities.

Before a loan is approved it must be passed by a majority of the full board of directors. If only seven of the nine directors are present the votes will have to be five to two in favor of the loan before it is granted. Loans mature on December 31 of each year, but if the money is required for such purposes as the purchase of cattle to be carried over, or breaking which will not yield a return until the following season, notification that a renewal will be requested accompanies the application for a loan. The loan may then be renewed on the following December 1, and mature a year later. In approving the application, the directors specify the purposes for which the loan is granted, and it is the policy that where any doubt exists as to the use that will be made of the money, it may be held over until the operations for which it was granted have been completed.

It would scarcely be possible to overstate the fine spirit of enthusiasm and confidence which the scheme has developed in this neighborhood of still greater agricultural possibilities than the splendid record it has already established.

The secretary has made it his business to visit the farm of practically every man who has borrowed, and finds that all hands are working hard and faithfully with a deep-seated sense of their responsibility.

The society does not handle the money loaned. All loans granted are guaranteed by the society, by the president and secretary's signature on the credit granted, and the money is therefore paid by the bank direct to the applicant. Seven per cent is the rate of interest charged, one per cent of which goes to the credit of the society, being credited to its account in the bank, the other six per cent being the amount allowed the bank on the loans.

How the Loans are Used

The use to which the loans secured from the society are being put is indicated in the following statement of the loans passed during the season of 1918:

For putting in and taking off crop	\$16,496
For new breaking	10,335
For purchase of machinery	3,050
For improvements	3,505
For cattle, horses, etc. . .	9,205
For floating liabilities . . .	1,650
Total	\$44,241

It will be noted from the above statement that the largest item is for running expenses during the season, such as, paying wages, store bills, blacksmith bills, purchase of twine, oil, etc., and the thousand and one items which creep into the farmer's account during the summer season, when he has no income to speak of. Next in importance comes new breaking, for which \$10,335 has

in their plans, and, if necessary, these changes may be required to meet the approval of the board of directors.

How the Loans are Secured

As stated above, the security of the loan is a lien on all the surplus assets of the applicant. The credit, however, is on a strictly productive basis, and the directors look in most cases to the product of the operation for which the loan was granted for repayment. For instance, if \$1,000 was borrowed for putting in and taking off a crop, it is expected that the first charge on this crop will be the repayment of the loan. In this case, the security of the loan is really a charge on future assets.

As soon as the loan is granted a certificate is filed in the registry office. No charge is made for filing the certificate. The farmer's business is not tied up in any way by this transaction. He is at liberty to dispose of his stock or crops in the usual way. All that is required is that when the transaction is completed he is under obligation to settle with the society and retire his loan. As soon as the loan is repaid the clerk of the county court is notified by the secretary of the society that the certificate has been discharged.

The Father of the Scheme

While the Province of Manitoba will always enjoy the distinction of being the bell-wether in this thoroughly businesslike



George W. Prout, M.P.P. Kildonan and St. Andrews, "father" of the Manitoba Rural Credits Act

conditions in other parts, and believing thoroughly in the soundness of his scheme, he pursued it "unhasting yet unresting"—to a finish.

In all, 17 societies are incorporated under the Manitoba Rural Credits Act. Ten of these are loaning money. In speaking of the attitude of the government towards the scheme, Hon. Edward Brown, in his address at the banquet tendered to the visiting party from Winnipeg, stated that the act had been placed on the books with much hesitancy on the part of the government, and that had it not been for the persistence of Mr. Prout, who is at present looking after its administration, it might not have become law. However, such satisfactory progress was being made that the government was looking forward to the time when there would be a rural credit society in each of the 150 municipalities of the province and when they would have \$5,000,000 lent out to the farmers to materially aid in production.



And this is the magnificent firstfruits of what is seen on opposite page

been granted. It is estimated that well over 2,500 acres have this year been prepared for crop, which could not possibly have been so prepared but for the credit granted by the society. It is the men who have secured credit for this kind of work who seem to be loudest in their praises of the society's activities.

Farmers securing loans are supposed to notify the secretary of the organization of any change

method of financing the farmer, the greatest credit is due to the man who introduced, matured and then by sheer persistence engineered the measure through all kinds of vicissitudes until it finally became law. This is George W. Prout, M.P.P. for Kildonan and St. Andrew's. The subject of short-term loans for farmers had long engaged his attention; he had made a careful study of their operations under similar

The 64 loans which have been approved and taken up amount to \$44,241. In the vast majority of cases, the loan is a bagatelle compared with the net worth of the farmer who secured it. Besides, the certificate which is filed, constituting first charge not only on the products of the operation for which the loan is secured, but also on the total surplus assets of the borrower. If that is not gilt-edged security, what is?

THE CANADIAN THRESHERMAN AND FARMER

CANADA'S LEADING AGRICULTURAL MONTHLY



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Sept.

The Outlook for the Agricultural College!

1918

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 is 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."

WHAT a wonderful kaleidoscope of change has whirled around since that day when a six-gun battery of gas tractors started breaking on the farm lands for the new Agricultural College! It is only killing time to contemplate at this point what might have happened had these buildings never been erected, but starting now, from conditions as they are, it may not only be found a useful employment, but it seems to us as if it has become a first charge on the responsible citizenship of Manitoba to look things square in the face as they connect themselves with the outlook for our Agricultural College. Not many of the bright programmes of pre-war days have been hit so hard as the "best laid schemes," of the various educational institutions, and not by any means the least to suffer has been our own provincial school of agriculture.

It will avail nothing to start arguing from pre-war premises because the war has knocked the bottom out of so much of the axiomatic in our social life. Since its inception, the Agricultural College has built

up a splendid record of constructive work: what part, if any, is it now going to take in the great business of Re-Construction? That the present Department of Agriculture took over a woeful heritage is now the insistent voice of the whole province. Even the warmest partisans of the men who were responsible for that pile of buildings at St. Vital freely admit that at least a grave error was committed, and that if they are to be maintained by the province on their present footing, they offer the uncomfortable prospect of a string of mill-stones around the neck of Manitoba for many years to come.

When the move was made from the great original on the banks of the Assiniboine, we had our misgivings, but we were comparatively new to the country. The enterprise, we were assured, was in response to the "imperative demand for space" to accommodate the increasing number of pupils, and to provide the very best educational facilities and equipment which could not be housed in the original buildings. That seemed all right to our unsophisticated view of things, because we have a standing belief that any money wisely spent on education is never mis-spent. We took the statement of these old-timers on trust, there was no alternative. But giving them the fullest credit for their integrity of purpose, did they then appreciate—are we now in general agreement—as to the real functions of an Agricultural College?

One of America's celebrated farm educationalists, spent the last seven of his seventy-seven years of life in proving that the system commonly pursued of training young farmers had been all wrong. That he succeeded in demonstrating this seems to be generally accepted; so remarkable, in fact, have been the results of those crowded seven years of this man's work, that the American Ambassador in England, recently called the attention of one august body of agricultural experts to what had been achieved under his direction. Roughly the idea is that instead of the college being a rallying point for young folks who merely come to get a general shake-up on agricultural subjects, returning to the farm (or the city as it may happen) to make the best of what they have picked up and assimilated, it should be the training ground and radiating centre from which the substance of all research and experiment should go out to the farmers at first hand.

We haven't space at this writing to say what we think of the many ways in which the Department, the Province, and most of all the men and women of the college faculty are hamstrung in their work by the handicap imposed upon them, of facing such a wilderness of wasted energy and providing for the enormous unproductive outlay it must bear for a full generation at least. To avert this impending calamity, we have an idea which we modestly but seriously present for what it is worth to any "whom it may concern." Briefly it is that the Federal Government should relieve Manitoba of the St. Vital property, and the Manitoba Department of Agriculture should take the soul of the college back to its old tabernacle at Tuxedo.

The hospital's commission will finish its course long before the need will cease to exist for continuing the vocational training of our battle-scarred heroes, not to speak of what ought to be done for the "budding hope of the country," a well that will never run dry. The least difficulty would be the adapting of the buildings and the acquisition of additional land to meet the needs of the college. But it takes no seer to visualize what might be made out of what is already set up, and "eating its head off" at St. Vital, if utilized as suggested. It is only part of what is due from us to those of our sons who "under no other compulsion than the power of their own moral consciousness, went up against the enemy; who confronted anguish with a song; who courted annihilation with the name of Canada on their lips, and changed that Canada almost to the likeness of the Canada of their dreams."

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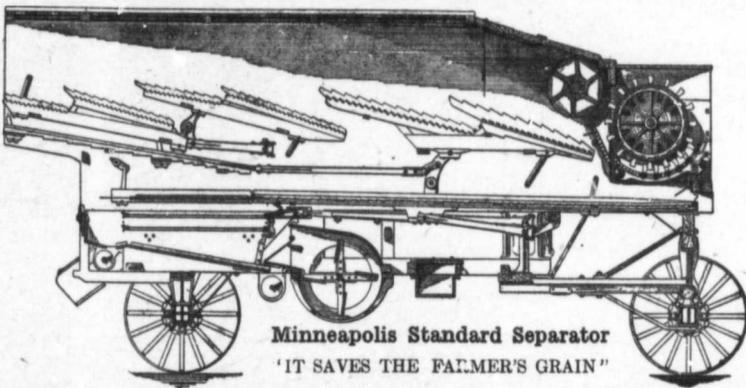
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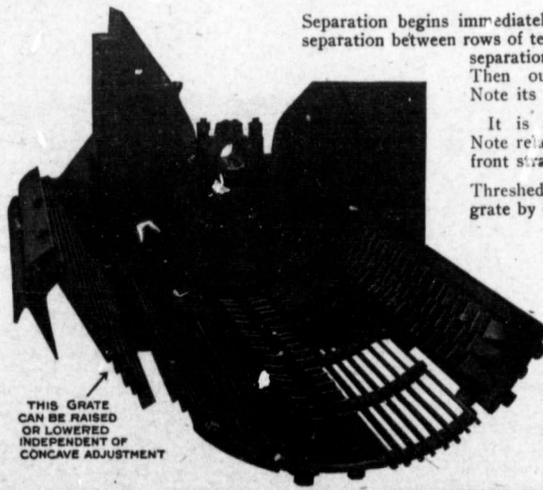
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THE KEROSENE FUEL PROBLEM

By GEO. P. PEARCE

LOOKING ahead it seems very probable that as soon as the Liberty Air Planes begin to go on duty to defeat Kaiserism, there will be a request from the government to "Save the Gasoline," for these wonderful high speed machines must have the very best fuel, suitable for high speeds, low temperatures, sudden spurts and power variations of the most extreme kinds and the best fuel known for this is gasoline.

Besides the demand for air planes, there are the ambulances, motor trucks, tanks, military autos and other means of transportation and power that the armies need and must have. It will be the duty of everyone to get along with the least amount of gasoline possible.

Tractors consume enormous quantities of gasoline every year and for the steady heavy pull of plowing, kerosene is just as suitable, and, in fact, contains more power per gallon. The only reason it is not used more is because we are only just beginning to learn how to burn it, and like other things during the development stage there have been many failures which have led

to the general impression that kerosene is very unsatisfactory as a fuel. Kerosene, properly burnt, is just as satisfactory as gasoline, thoroughly reliable, safer and much cheaper.

There are at present two entirely different methods of burning kerosene, each claiming to be the best and each capable of actually running satisfactorily. The first method is based upon the idea of gasifying the kerosene by the application of heat to the carburetor and then mixing this kerosene vapor with heated air and the gaseous combustible mixture is then fed into the engine for combustion. This system has met with much favor in the past because it seemed that the nearer the mixture was to an actual gas, the better and more complete combustion must be. From the combustion point of view, this is

true, but from the power point of view, a heated charge is a positive disadvantage because the fuel in a gaseous state takes a great deal more space and the heated air is also expanded with the result that the total charge received in the engine cylinder is less by weight, and as power is proportional to weight of charge, and not volume, the result is that the horse-power of the engine falls as the temperature of the charge is increased.

To overcome this power difficulty the second method of burning kerosene is being developed, and that is to feed it cold with cold air and thus get the greatest

atomized mixture is delivered into the cylinder in this state, then the problem is solved. On a single cylinder engine, this can fairly well be accomplished because the carburetor can be placed close to the intake valve and thus elbows and bends are reduced to a minimum. Every elbow or bend that the mixture has to pass, greatly decreases the efficiency of the mixture because while the air will make the quick turn easily, the kerosene particles will not, and they tend to keep flying straight ahead like a rifle bullet and thus many of them actually hit the wall at the bend where they form a wet film which flows

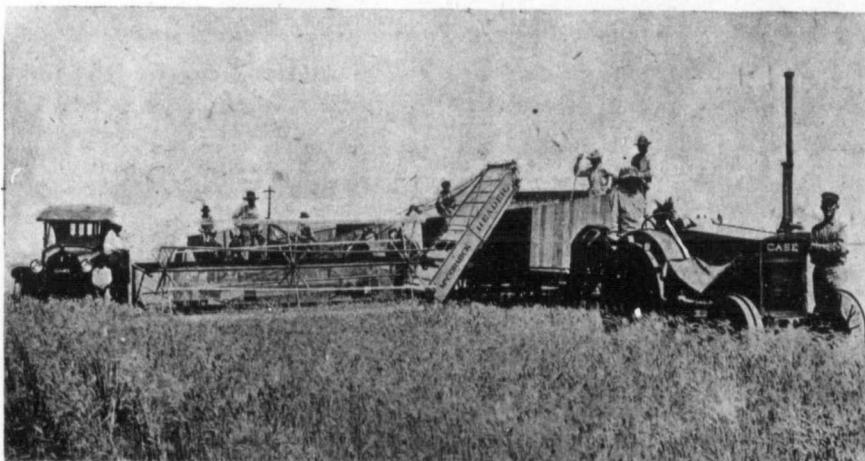
momentum, along the manifold towards No. 4 cylinder, and as soon as this opens to suction, there will be an excess fuel delivered; this will cause a smoky exhaust and the operator will cut down the fuel supply. The leaner fuel supply will cause No. 2 and No. 3 cylinders to get a very weak mixture, and still No. 1 and No. 4 will receive rich mixtures, possibly some smoke will still show in the exhaust and at the same time the familiar "pop" and "sput" of the weak mixture in No. 2 and No. 3 cylinders will be heard, and so the operator will not know what to do for he makes the fuel richer to cure the "pop," he will get still more smoke in the exhaust and if he tries to cure the smoke he makes the weak cylinders worse; thus his engine will run erratic, and the conclusion is reached that kerosene is a complete failure.

Some engines will burn kerosene satisfactorily because their manifold design happens to meet the kerosene burning conditions and no tractor owner should refuse to consider kerosene as a fuel until he has thoroughly and carefully tried it out on his tractor. It should be re-

membered that a tractor engine runs under conditions that are most favorable to burning kerosene; that is, heavy steady loads.

To rig up your tractor for a kerosene test, is very simple and need not cost more than a few dollars. Get an old half gallon can, a large tomato can will do, and about six feet of copper tubing, the same size as is connected to the carburetor from the fuel tank, a small tee fitting for soldered joints and a couple of pet cocks for soldered joints will be all that is necessary. These can be second-hand and are obtainable at most any garage. The first thing to do before making this change is to drain all the gasoline out of the tank, pipes and carburetor. Then find a suitable place to put the half gallon can which should be about 6 in. higher than

(Continued on Page 42).



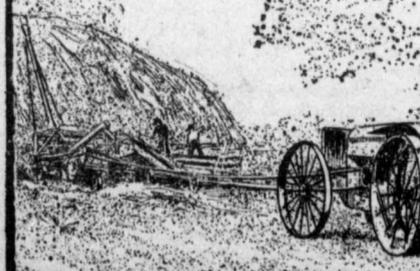
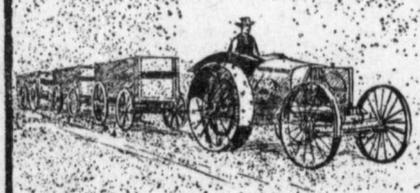
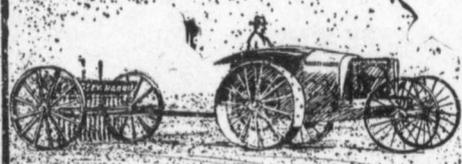
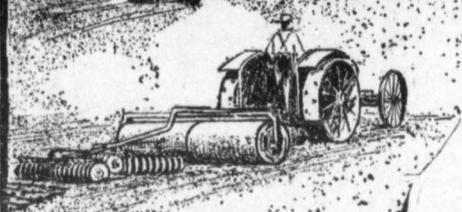
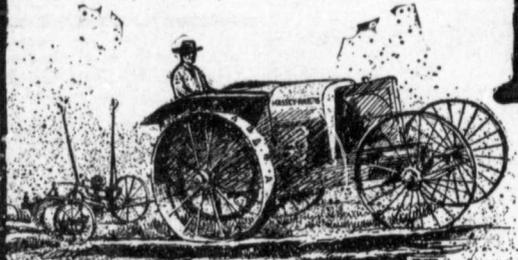
A Fine Combination of Power Efficiency and Speed

weight of combustible possible in the cylinder. This, of course, is not so simple as it sounds; to put in the cylinder a slug of fuel and some air would accomplish nothing, in fact, it probably would not even ignite. This slug of fuel must be finely divided, atomized, as it is called, and then thoroughly mixed with the air until it looks like a very fine mist or fog. In this condition it is possible to get the charge in the cylinder and the heat of compression warms up the charge, so that ignition is easy and the explosion stroke very powerful and steady.

The way this fog is produced is to spray the kerosene charge into the air as it rushes through the carburetor with a velocity much greater than the worst cyclones or tornadoes and it smashes and dashes the fuel up into the exceedingly fine particles and if

towards the cylinder, but no longer in the "fog" form and in poor condition for rapid combustion. On a two-cylinder engine this trouble begins to show up still more, because the intake manifold is longer and has more bends and different ways for the fuel to go and thus the separation becomes more objectionable and the burning of kerosene is more of a problem. When an effort is made to burn kerosene by this atomizing system in a four-cylinder engine, then the difficulties begin to be very serious because on account of the fuel tending to go in a straight line, it will not feed properly into No. 2 and No. 3 cylinders. For instance, during the suction stroke of, say, No. 3 cylinder, a large percentage of the fuel will fail to make the quick turn into the cylinder and will be carried, by its

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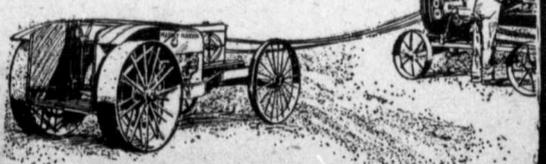
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Farm and Home Drying of Fruits and Vegetables

Possibilities and Limitations of Drying

DRYING is an important means of preventing loss of perishable goods. The war has brought to our people a general realization of the value of those food materials whose annual loss has heretofore been disregarded and of the necessity for putting an end to such waste. We had almost forgotten that the unused surplus of our gardens and orchards has a food value, pound for pound, as great as that of the portion which we are able to consume immediately, and it has required the stern teaching of necessity to remind us of that fact. We now have definitely before us the task of learning methods of conservation of vegetables and fruits which have long been familiar to most of the world, as they were to our parents, and which are new only to us.

When we have learned these methods thoroughly and have applied them to the preservation of the great surplus of fruits and vegetables everywhere produced by small home gardens and orchards, we shall find that our food supplies in the country at large are very materially increased in both variety and quantity. To have available in the home a supply of such food-stuffs considerably reduces the cost of feeding

the family, renders it in some degree independent of variations in the supply of foods in the markets, and at the same time permits a broadening and enrichment of the dietary which is a very substantial aid in the preservation of good health.

For preserving perishable food-stuffs, one of two general methods may be pursued. One of these consists of heating to destroy decay-producing organisms, and sealing. This is what we do in canning. The other removes so much moisture from the material that organisms are not able to grow and multiply in it. This is evaporation or dehydration. In the case of any particular material judgment must be exercised in determining whether it shall be dried or canned.

Drying has the very great advantages that the product has a weight only one-fourth to one-ninth that of the fresh material; that there is a very considerable reduction in bulk, due both to actual shrinkage and to the fact that all portions not actually fit for food are removed; and that the dry material may be stored almost indefinitely without danger of deterioration and without the use of expensive special containers. At the same time it must be understood that evaporation has very definite limitations and that it is not applicable by any means to all fruits and vegetables. There are a considerable number of fruits and vegetables which it is not advisable to attempt to

The equipment described in the following pages has been thoroughly tested in practice and in so far as possible is of simple, inexpensive character; easily built at home and designed to give maximum capacity with minimum cost of construction and operation. The purpose in view has been not merely to describe methods for the conservation of food; it has been considered essential to make sure that the product obtained shall be worth more than has been expended in saving it.

Fundamental Principles of Drying

Most failures in drying are due not so much to imperfections in the equipment used as to the failure of the operator to under-

Consequently, any wet material exposed freely to the air will ultimately become dry, since the liquid water covering its surface will be converted into water vapor and taken up by the air. The rate at which this will occur will depend upon the temperature of the air and upon the percentage of moisture already present in it when brought into contact with the material. If the air remains at constant temperature and is undisturbed by currents, the loss of water from the material will go on very slowly, as the air nearest the wet surface will soon become almost saturated and can take up more water vapor only as that which it already holds is lost by diffusion outward and upward into layers of drier air. If the air be kept constantly in motion, however, the drying will be greatly hastened, as the moving air current will displace the blanket of moist air surrounding the material as rapidly as it is formed and bring in drier air to replace it. If the temperature and moisture content of the air used are both constant, the rate of drying will increase proportionally as the rate of movement of the air is increased, until a point is reached at which water cannot pass

from the interior to the surface of the material as rapidly as the air is able to take it up, when the surface will become dry even though the interior is still nearly saturated. The effect of a brisk breeze in hastening the drying of the surfaces of muddy fields after a rain is a familiar illustration of this principle.

Drying is also hastened by raising the temperature of the air. The amount of water vapor which a given volume of air can absorb before reaching saturation depends upon the temperature and is practically doubled by every increase of 27 degrees in temperature. In other words, if a quantity of air be warmed from 60 to 87 deg. F., its moisture-carrying capacity is doubled; if the heating be continued until a tem-



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dry, either because they undergo changes in drying which render them unpalatable or because they deteriorate rapidly after drying; also, there are a considerable number of vegetables which are so readily kept for long periods in storage, either in out-of-door storage pits or in an ordinary cellar, that any labor expended in drying them under any ordinary conditions would be wasted. Hence, this publication confines its discussion of drying to a limited number of fruits and vegetables which are not readily kept in storage and for which methods of drying have been so thoroughly worked out that the amateur has only to follow directions with a reasonable degree of care and intelligence in order to be sure of success.

stand a few fundamental principles which must be kept clearly in mind if the work is to be successful. The purpose in view in drying any food material is not merely the removal of sufficient water to insure good keeping; it is equally important to preserve all the food value of the product with as much as possible of the natural flavor and cooking quality characteristic of the raw material. This double purpose cannot be successfully accomplished unless certain guiding principles are kept in mind.

The air at the earth's surface is capable of taking up and holding as water vapor considerably larger quantities of moisture than are ever present in it; that is to say, the free atmospheric air never becomes completely saturated.

perature of 114 deg. is reached the moisture-carrying capacity is again doubled, becoming four times what it was at 60 deg. Further heating produces further increases in the same proportion, until a point is again reached at which water is vaporized at the surface more rapidly than it is replaced by movement outward from the interior of the material, when the process will, of course, be slowed and stopped by the drying out of an outside layer, which will then retard the escape of moisture from the tissues beneath it.

There are therefore two ways in which the rate of drying can be increased; namely, by increasing the temperature of the air or by quickening its rate of movement over the material to be dried. Economical drying is secured by combining the two and forcing currents of heated air over the material at such temperature and rate of movement as will remove moisture from the surface as rapidly as it can move outward from the interior of the fruit or vegetable being dried. When this point has been reached, any expenditure of heat in further warming the air or of force in driving it is, of course, wasted.

Generally speaking, flavor and cooking quality are best preserved by rapid drying. Fruits and vegetables are living things; when their flesh is opened up to the air, as occurs in peeling and slicing, a number of chemical changes in the tissues immediately begin. If the material is to retain its natural appearance, color and flavor, these must be checked. Some of these changes produce darkening and discoloration of the tissues; others break down the pigments present, causing the fading of the characteristic colors of the material; and still others affect the flavoring substances present, producing decrease or loss of the constituents which give the fruit or vegetable its characteristic flavor. Other accompanying but slower changes result in the partial destruction of the sugars and proteins of the material, sometimes accompanied by the production of new and undesirable flavors and odors. While these changes are in part spontaneous, many lower organisms, universally present in the air and upon foodstuffs—bacteria, yeasts, and molds—which produce similar but much more rapid decomposition, are certain to begin growth in the material as soon as the removal of the protecting peel gives them access to its interior. Consequently, process of decomposition begin as soon as the fruit or vegetable is opened to the air and will continue until the greater part of the moisture present is removed unless special means are

employed to arrest them. This decomposition would be immediately stopped by raising the temperature of the material to 175 deg. or 185 deg. F., but it is not possible to do this without causing injury. The rapid heating to this temperature in dry air of freshly cut slices of a succulent fruit or vegetable causes bursting of the cell membranes by expansion of their contents and permits the escape of water which carries with it dissolved sugars, salts,

and flavoring substances, thus reducing both the palatability and the food value of the product. Consequently, only moderate temperatures can be employed, and unfortunately all, or practically all, the changes under discussion are not only allowed to continue but are actually hastened when the temperature of the fresh water-filled material is raised to the limit beyond which bursting and dripping will occur. To arrest these changes and to pre-

serve the natural colors and flavors of the material it is necessary to resort either to blanching or sulphuring, both of which are discussed elsewhere.

It follows from the foregoing statement that rapid drying cannot be secured by the employment of high temperatures with fresh water-filled material. Nor can material already partially dry be subjected to high temperatures, as scorching and charring will then occur. The best tem-



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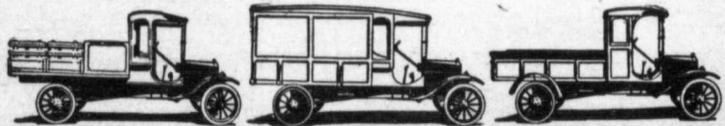
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perature for drying is therefore the highest which can be employed without danger of injury in either of these ways, since the drying will thus be made most rapid. What this highest possible temperature may be is determined in the case of any particular fruit or vegetable by its physical structure, chemical composition, and water content. As the different fruits and vegetables show very wide variations in these respects, there is no single best temperature for general use with the various products; heat treatment which would be perfectly safe with potatoes or carrots would be utterly ruinous if applied to such fruits as raspberries and peaches. For this reason it has been necessary to determine experimentally for each of the different materials the range of temperatures which may be employed without injury. These are given on subsequent pages. The operator of a drier should be provided with a dependable, accurate thermometer which should be placed in the drier and kept under frequent observation, as any attempt to trust to inexperienced judgment—as to temperatures in the drier is likely to result in damage to the material.

In drying any food material it is absolutely indispensable that provision be made for the prompt removal of moisture from the apparatus by a constant inflow of air. The reason is obvious; if the material be placed in a closed box and heated the confined air will very quickly become saturated and no more water can escape from the material. If the heating is continued, the material will literally be cooked in its own juices, since the water content of the products which we dry ranges from seven-tenths to more than nine-tenths of their total weight. Therefore, a drier can be efficient only in the degree that its construction provides for constant removal of the moisture given off by its contents.

Success in drying, therefore, depends upon the stopping by suitable means of the series of changes which begin as soon as the material is cut into pieces and exposed to the air, the employment of a temperature sufficiently high to prevent the growth of organisms—yet not so high as to produce the bursting of cells and loss of juices in fresh material or the scorching of that which has lost most of its water—and the provision of an adequate circulation of air for the prompt removal of the water vapor given off. Simple as these principles are, they have been discussed at length for the reason that most failures or poor results are due to the neglect of one or more of them. (Contd. next month)

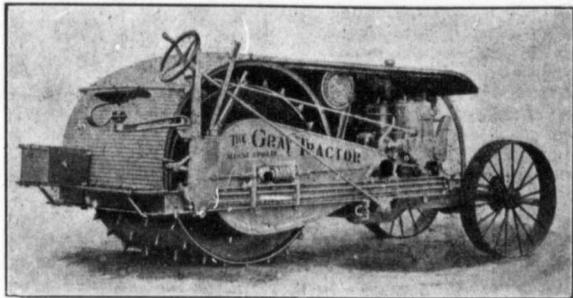
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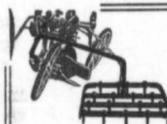
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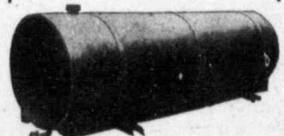
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MAX



WAGON OIL TANK

Built to Last and Give Satisfactory Service

Write for Full Particulars and Prices

Winnipeg Ceiling & Roofing Co. Ltd.
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Don't matter if broken. We pay up to \$15 per set, also actual value for OLD GOLD, SILVER, PLATINUM AND DENTAL GOLD. We send cash by return mail and hold goods for 15 days for sender's approval of our price. Mail to

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Why En-ar-co Quality Does Not Fluctuate

En-ar-co National Motor Oil Scientifically Refined By Graduate Workmen Only

NEVER content to abide by old, established ways, En-ar-co refining experts are constantly seeking new methods. New inventions are continually being added. Many are found only in our refineries. But these experts have long realized that mechanical processes alone do not forestall quality fluctuation.

Oil scientists say that *quality must not fluctuate*. Lubricants must be uniform in order to give the greatest service and assure complete satisfaction.

Accurately Trained Workmen Produce Accurate Products

Having supplied the best materials, newest modern equipment, exact formulas and rigid tests, quality then depends upon the degree of training each workman receives.

Thus it is to your advantage to use En-ar-co National Motor Oil and other En-ar-co products. All En-ar-co brands are made by graduate workmen only—men who have passed through the several grades of En-ar-co scientific training. Each man must qualify for his master degree before he is assigned to responsible duties.

Your Satisfaction Guaranteed

Tractors, Automobiles, Aeroplanes, Trucks, Gas Engines and Motor Boats give better service and last longer when lubricated with En-ar-co National Motor Oil. And there's equal satisfaction in White Rose Gasoline and other En-ar-co products. The best is none too good for your motor.

Here, then, is your assurance of maximum service and satisfaction. Try En-ar-co National Motor Oil now—made by men who know!

Longwear Barn, Bridge and Roof Paint
Put Up in 8 Colors—Barrels and Half-Barrels

Send for this FREE Handy Oil Can

Sign and send coupon today. We will send a long-spouted can that enables you to oil the hard-to-reach places.



Sent FREE

Canadian Oil Companies, Limited, 1214 Excelsior Life Bldg., Toronto, Ont.

I own.....
automobile or tractor and enclose two 3-cent stamps. Send me Handy Oil Can FREE. Please give nearest shipping point in this province and quote prices on the items I have marked. I will be in the market

about.....
(Give date above)
I use.....gals. gasoline per year
I use.....gals. motor oil per year
I use.....lts. axle grease per year
I use..... auto greases per year
I use.....gals. kerosene per year
I use.....gals. tractor oil per year

My Name is.....
Address.....
Postoffice..... Province.....

TEAR OR CUT OUT—MAIL TODAY
NOTE: This can will not be sent unless you give make of your auto or tractor.

Canadian Oil Companies, Limited
1214 Excelsior Life Bldg.
Toronto, Ontario

Engineering Possibilities of the Tractor

A few Practical Suggestions from the President of the Society of Automobile Engineers

By C. E. KETTERING; in "Chilton Tractor Journal"

NO one should think that the tractor business is not a real engineering problem. It is an engineering problem of the most intense nature, and some of us will find that it is just about as exciting to build a good tractor engine as it is to build a good aircraft engine, because in the former we must consider something that we have never had to before, and that is the full load operation of the engine, in the hands of a man who does not know much about it. For the first time we encounter what is known as psychology in engineering, and we will find that the psychology of the operator has as much to do with it as any other factor.

We can build a tractor and send it out, and if a man tries to operate it and does not get good results, we can say that he has not sense enough to operate a tractor, but just remember that that is the type of fellow that is going to be the customer, and we must satisfy the customer. It has fallen to my lot to have had to do with a problem similar to the tractor problem; that is with a small farm lighting system. That has been about fifty per cent a mechanical and fifty per cent a psychological problem, and we have had to pay more attention to the psychological than to the mechanical end.

We sent out those machines and a man spilt chaff or oats or hay into the gasoline tank and choked his mixing valve, and, of

course, the engine would not run. A man can "limp" down to town on three cylinders of an automobile and go to a garage and get it fixed, but he cannot do that with a tractor nor can he do that with a lighting outfit.

Tractors Must be Fool-Proof

The boys used to come back and say, "The fellow put dirt in his gasoline can. No wonder it didn't work." That did not make a bit of difference. The fellow was dissatisfied with his engine. So we said, "Those engines have got to work, even if they are half full of clover seed or oats." It is only lack of appreciation on the part of an engineering department to want to blame the difficulty on the fellow who uses it, when with a little bit of the engineer's own constructive brains the engine could be made so that no matter whether the gasoline was full of wood or chips or anything else, it would burn whatever fuel was put in without choking up the carburetor.

We did that and have had no trouble since. But before, we would spend seventeen dollars to take a little bit of cigarette tobacco out of a carburetor. We used a proper number of strainers, and put them in a way so the owner could clean them himself.

I was born and raised on a farm, and I am trying to operate a couple of farms now with farm tractors. I find that this tractor problem has not been scratched yet. We have some good machines, but they have not been fitted



ONE GLORIOUS EXPERIENCE RECALLED

Officer (to wounded man to whom he has given a pull at his flask): "I wonder you can swallow it neat."

Jock: "Dod, sir, it was grand! It just gaed doon ma thrapple like carpet tacks."

Harvest Expectations vs. Harvest Realizations

Very often the crop does not come up to earlier expectations, which not only causes the farmer and his family, who have worked so assiduously, considerable disappointment, but, as a consequence the planning of months and years goes for naught. Just so through life. Every man with responsibilities hopes to leave his dependents in an independent position, but as a result of unforeseen events, is frequently unable to do so, regardless of his good intentions.



This is why the progressive farmer carries adequate Life Insurance. He knows that if anything happens, it will provide funds to complete his unfinished work. On the other hand, if he lives until the maturity of the policy, the systematic accumulations will provide a competence for his declining years.

The Manufacturers Life Insurance Company

Head Office - TORONTO, Canada

P.S.—Fill out the attached coupon to-day, and mail it to the above address. It places you under no obligation.

I would like to save \$..... yearly through the medium of Life Insurance.

I am..... years of age, and am (married). Kindly forward particulars of plan of policy you recommend.

Name..... Address.....

MACLEOD SUPPLIES

ARE SOLD DIRECT TO YOU AND SO COST YOU LESS—THEY ARE PROVING THEIR VALUE EVERY DAY ON THOUSANDS OF WESTERN FARMS

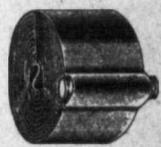
150ft. 8-in. 5-ply \$121.00

QUALITY COUNTS IN ENDLESS RUBBER THRESHER BELTS

YOU MAY WIRE YOUR ORDER AND HAVE YOUR BELT SHIPPED C.O.D. PROMPT SHIPMENT. EVERY BELT GUARANTEED

Our Beltings are the product of old, reliable manufacture. Those who have won an enviable reputation as makers of thoroughly high-grade, reliable goods. We permit no cheapening in the process of manufacture. Each grade is exactly as represented, and our prices, quality considered, are remarkably low. The price of canvas belts is so high we are not handling them this year. Rubber belts are better value.

Number	Length	Width	Ply	Price	Number	Length	Width	Ply	Price
CT10074	100 ft.	7 in.	4	\$60.00	CT12085	120 ft.	8 in.	5	\$7.50
CT12075	120 ft.	7 in.	5	\$9.00	CT15075	150 ft.	7 in.	5	\$10.00
CT10084	100 ft.	8 in.	4	71.50	CT15085	150 ft.	8 in.	5	\$11.00
CT14085	100 ft.	8 in.	5	91.50	CT15086	150 ft.	8 in.	6	\$15.00



Rubber Belting in Cut Lengths

"REGULAR" BRAND. 3-in. and under 3-ply, 3 1/2-in. and over 4-ply.
 No. C.T. 1361—Width, inches - 1 1/2 2 2 1/2 3 3 1/2 4 4 1/2 5 6
 Price, per foot - - - - 11c 14c 18c 22c 30c 36c 40c 48c 52c
 No. C.T. 1362—"SPECIAL" BRAND. All sizes 4-ply. Best belting made.
 Width, inches - - - 1 1/2 2 2 1/2 3 3 1/2 4 4 1/2 5 6 7 8
 Price per foot - - - 14c 17c 20c 23c 33c 40c 48c 50c 55c 60c 70c

RAWHIDE OUT LACE LEATHER

In widths of 1 1/2-in. and 1 1/4-in.
 No. 81800. Price, per lb. any size - - - \$1.85
 No. 81801. Price, per lb. assorted sizes - - \$1.95

PLOW SHARES that Fit and Last

Order to-day from this advertisement, giving numbers on back of your old shares and the make of the plow.

12-in.	13-14-in.	15-16-in.
\$3.25	\$3.65	\$3.95

Cut Out This Coupon and Mail Today So that you may share in the Special Values

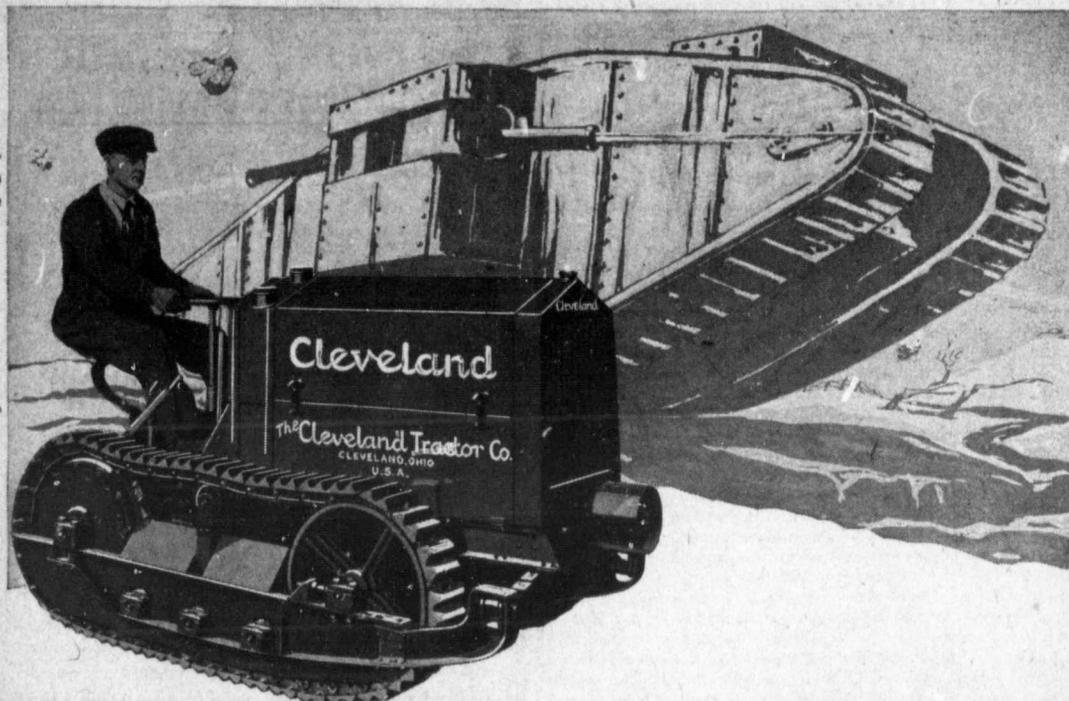
THRESHERS' SUPPLIES, OILS AND GREASES, ENGINES AND POWER EQUIPMENT, GRINDING OUTFITS, PUMPING OUTFITS, WASHING OUTFITS, HARNESS AND HARDWARE, PLOW SHARES AND IMPLEMENT REPAIRS, WAGONS, BOBSLEDS, BLACKSMITH'S SUPPLIES, ROOFING, RAKE, TROUGH, PUMPS, BOOTS AND SHOES, ETC.

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MACLEOD'S LIMITED WINNIPEG

140-151 NOTRE DAME EAST



A Little "Tank" ---for Farm Work

The Cleveland Tractor is built on the same principle as the wonderful European battle tanks.

It travels on its own tracks, laying them down and picking them up as it goes along.

This efficient type of construction makes the Cleveland specially valuable to farmers, as it enables them to work practically anywhere—over almost any kind of farm land.

They are being operated over gullies, ruts and ditches, through soft soil, wet clay, sand and gumbo—without sinking or floundering. They do not pack the soil.

They are working under and among small trees, close up to fence corners, on hillsides and over rough ground with much better results than can be obtained with horses or with any other type of tractor.

And they are working much faster.

Thousands of Cleveland Tractors are helping to increase the production of food demanded by war conditions.

The Cleveland, pulling two 14 inch bottoms—which it will do under average conditions—plows $3\frac{1}{2}$ miles an hour—eight to ten acres a day. This is equal to the work of three men and three good three-horse teams.

The Cleveland steers by the power of its own

engine; it requires but slight effort on the part of the driver. Only one man is required to operate it. 12 horsepower is developed at the drawbar and 20 horsepower at the pulley. It is a constant source of tractive and stationary power for twelve months in the year.

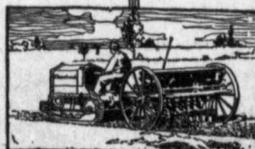
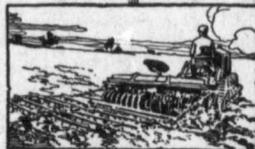
It plows, harrows, plants, reaps, cuts ensilage, runs saws and pumps, drags logs, pulls road machinery, hauls manure spreaders and does practically all the work formerly done with horses or stationary engines.

The Cleveland Tractor produces food but consumes none of it. It conserves man power, horse power, time, energy and effort—and produces greater returns.

The Cleveland Tractor was designed by Rollin H. White, the well-known engineer. It is manufactured under his supervision. Gears and tracks are protected from dust and dirt. Materials throughout are of the best. The whole machine weighs only about 3200 pounds. It can be housed in less space than is needed for a horse.

Take advantage of present produce prices. Raise more food now. Help the nation and incidentally make more money yourself by using one or more Cleveland Tractors.

Write for complete information and the name of the nearest Cleveland dealer.



The Cleveland Tractor Co.

The largest producer of Crawler-type Tractors in the world

19103 Euclid Avenue

Cleveland, Ohio, U.S.A.

Cleveland Tractor

to the requirements of the American farmer as I know him. We have thought too much of the great, big Western farmer. We have not thought much about the Ohio farmer and the Indiana farmer and the Michigan farmer.

Service the Thing Most Needed

I want to cite an actual case. A friend of mine has two farms of about four hundred acres each in Indiana. Last year he installed tractor equipment on one of them; on the other he kept the horses. He said to me the other day, "No tractor manufacturer on earth could give me a tractor unless he paid me a proper amount for taking care of it. I lost money on that 400-acre farm last year for the first time in my life." Why? Because he broke some gears and he had no place to go and get them. The factory shipped him the wrong gears the first time. The express company miscarried them the second time, and for two weeks during the important plowing season he did not have that tractor to use. If we do not get the idea of service and the distribution of service parts over the country, and get it quick, we will harm the tractor industry so that it will take years to recover from the effects. There is nothing in the world that is as important as keeping the machines running when they are needed.

Decrease Idle Time

I talked recently to a gentleman who had been operating eight or nine tractors, and he said that some of them have been out of service more than fifty per cent of the time. He gave one instance of a drive-gear that had failed. The mechanics worked fifteen hours after they received the new gear before they got it on.

We have been thinking too much in the terms of the automobile mechanic and the automobile repair shop, which we have not got on the farm. We

cannot take the tractors to town, but the engineer should go out and see where some of his tractors go, the way some of them are operated, and he will get a real appreciation of the problems in front of him.

Stop Overselling the Farmer

The tractor is going to be a tremendous business because animal power for farming operations is going to be antiquated. But let us not stumble all over ourselves. Let us get a veracity club organized for the sake of our salesmen. We have been "overselling" these farmers all the time. We have been selling them a three-plow tractor when it would pull only two plows. It would pull three plows on the right kind of a day, with the weather and the ground just right. The farmers that are getting the tractors are not satisfied because they have been "oversold." They will be satisfied with a two-plow tractor if it pulls that load all the time. We have been overloading our engines.

There are kerosene tractors today that don't run on kerosene; and there are kerosene tractors that will run on kerosene in which the main bearings must be changed about five times as often as if they were run on gasoline. As engineers, our problem is to make that kerosene tractor a good kerosene tractor and not simply one to "get by" on, and I don't believe that a single tractor engineer is insincere. He is doing the best he can with the experience and the data that have been furnished him. It is a new business, and we must make the mistakes of every new business; but the more quickly we realize what some of the fundamental problems are, the better off we will be.

In the matter of fitting a bearing—suppose we put liners in the bearings. Now, let us go out some day in a wheat field where a man has to take a liner from that bearing and see him do it;

No Better Thresher Belts than these

Dunlop Thresher Belts have no superiors anywhere.

There is no other factory in all Canada better equipped to manufacture Rubber Belting than the Dunlop plant.

Up-to-date facilities, expert workmen, and A1 materials, one and all point to an unexcelled product—

"Prairie" and "Reliance"

(Rubber-Covered and Stitched)

The duck used in the construction of Dunlop Thresher Belts is of the long, hard, closely woven kind.

The curing process takes place under a hydraulic pressure equal to 50 tons in weight.

There is no lost power when Dunlop Thresher Belts are used because they have the maximum of strength, durability and toughness and the minimum of stretch and slippage.

If your preference is for a Frictioned-Surface belt you will find our high-grade "Gibraltar RedSpecial" to be unexcelled.

Dunlop Canvas Thresher Belts and Dunlop Agricultural Hose are conspicuously upholding the reputation of the "Two Hands" line of Rubber Products.

Dunlop Tire & Rubber Goods Co., Limited

Head Office and Factories: Toronto.

BRANCHES IN LEADING CITIES

Makers of Tires for all Purposes, Mechanical Rubber Products of all kinds, and General Rubber Specialties.



THE SPIRIT OF AMERICA

The modest looking lady in the picture is Mrs. Mary E. Hamar of W. Lebanon, Indiana, the first woman to sell the Avery line of motor farming machinery. Her husband was the Avery dealer at this place for many years, and upon his death, Mrs. Hamar bravely took up the agency and has handled it now for about a year with marked success.



PAGE HARRISON Ltd.

WINNIPEG.

General Agents

Yorkshire Fire Insurance Co. of England

LIVE STOCK DEPARTMENT
SPECIAL FARMERS' ACCIDENT POLICY
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AGENTS WANTED

ARTIFICIAL LIMBS



It will be to your own convenience to buy nearest to your home. We make the slip or solid socket, also fibre legs. Write for descriptive booklet

CALGARY ARTIFICIAL LIMB CO.

606 1st Street East, Calgary

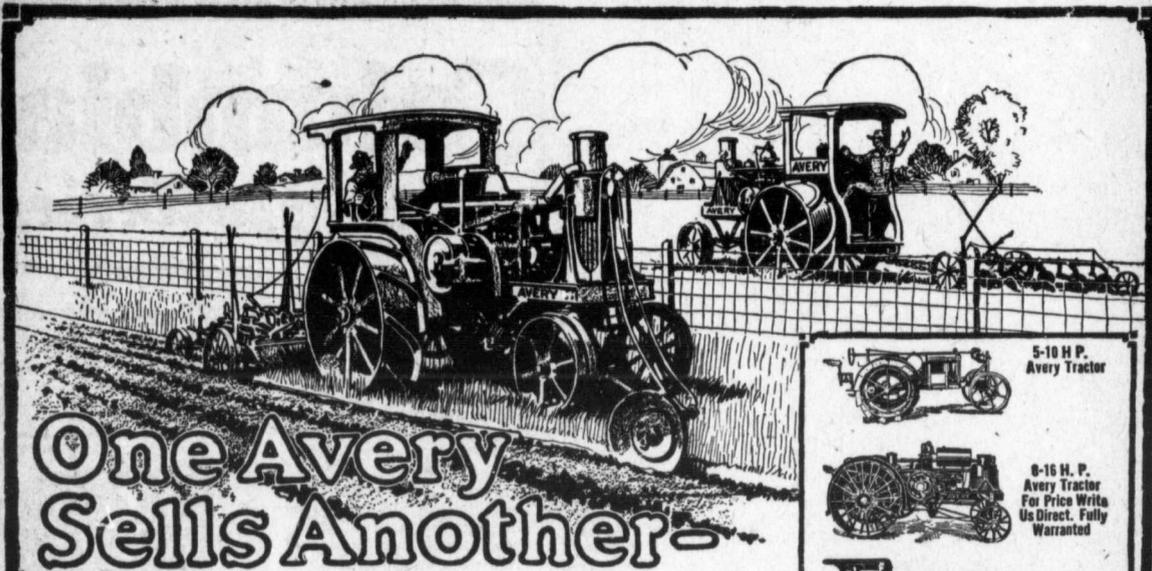
PATENTS TRADE MARKS AND DESIGNS

Write for booklet, circulars, terms, etc.

FETHERSTONEHAUGH & CO.

FRED. B. FETHERSTONEHAUGH, F. C. M. E.
GERRARD & NEWBOLD, R. L. M.

36-37 Canada Life Bldg. WINNIPEG



One Avery Sells Another

PROOF of Avery Tractor success is shown by the way Avery Tractor sales grow in the same community. When one farmer gets an Avery Tractor, his neighbors watch its work closely. It is not long before another Avery arrives and then another, for his neighbors see that Avery Tractors stand up under the work.

Likewise, when an Avery gets into a family, other members of the same family soon become Avery owners. Brothers, cousins, fathers and sons, uncles and nephews are buying Averages. We have many records of where two, three and four brothers in the same family have bought Avery Tractors. The fact that neighbors, friends and relatives buy Avery Tractors after they have watched carefully the work of the first Avery Tractor in their community or family, is the very best proof that Avery Tractors are a success.

Power for Every Farm Need

You can get an Avery Tractor to exactly fit your size farm. Avery Tractors are built in six sizes—a size for every size farm. With an Avery Motor Cultivator you can also cultivate your row crops with motor power. You can also get a size Avery "Grain-Saving" Separator and Avery Plow for any size Avery Tractor. For any kind of field work, belt work or road work, there is a successful and profitable Avery Motor Power Machine.

Built by Motor Farming Machinery Specialists

The five sizes of Avery Tractors, from 8-16 to 40-80 H.P., are all of the same design. They have low speed motors, renewable inner cylinder walls, adjustable crankshaft boxes, gasifiers that turn kerosene into gas and burn it all, and many other original and exclusive features.

Avery Tractors are built entirely in our own big factories and every part of an Avery Tractor is built especially for tractor work and only for the Avery Tractor. Avery Company are *builders*—not assemblers.

See the Nearest Avery Dealer

Go to your Avery Dealer and get the size tractor and equipment to meet the needs of your size farm. No matter how small or how large the acreage you cultivate, Avery motor farming machinery will fill your requirements. Or, write for complete catalog, showing the Avery Line in natural colors.

CANADIAN AVERY CO., LIMITED

Western Canadian Distributors
Branches at REGINA, CALGARY, SASKATOON

MAIN OFFICE, WINNIPEG
Sub-Branches at LETHBRIDGE and CAMROSE

AVERY

Motor Farming, Threshing
and Road Building Machinery

5-10 H.P. Avery Tractor

8-16 H.P. Avery Tractor For Price Write Us Direct. Fully Warranted

12-25 H.P. Avery Tractor

18-36 H.P. Avery Tractor

25-50 H.P. Avery Tractor

40-80 H.P. Avery Tractor

Light and Heavy Tractor Plows for all Size Tractors

Avery Motor Cultivator

There's a size Avery Thresher for every size farm

then you will wonder that our tractors last as long as they do. We must make things easier to do than we ever thought possible. We have got to study the matter of tools to go with the tractor, how to chain them, on to the tractor, so the farmer cannot use them for fixing the binder or the pump. We must print on the handle of that tool what it is to be used for. We made two sets of tools for our little farm lighting system. On one the names of what that wrench had to do were printed on its side; on the other there was nothing printed. The farmers never use a spark plug wrench once in a hundred times to take the spark plug out. They could not get the engine apart because they would pick up the wrong tools. Simply putting the names on the sides of those wrenches and tools has saved us worlds of trouble.

Simplified Instructions

The next thing the engineers should do is to write and help write for the sales' department a real simple commonsense instruction book, and it cannot be seventy-two pages long, because no one will read it. The place to write the instruction book is right on the tractor. If a certain kind of oil is required, print right on the tractor, "Use this oil here," and don't print it in such little letters that the grease and dirt will cover it up, because the man who reads the directions may not be the one who will operate the tractor. The instruction book is not inherited down the line as is the tractor. Therefore, it is important that the instructions go with the tractor.

There is one thing in the tractor that is not true about the automobile. A tractor pulling three plows in heavy soil doesn't coast much of the time. And while a lubricant system may be fine on the automobile engine, it will not work on the tractor. The atmosphere is not so very clear, especially if the tractor is traveling

four miles an hour and a wind of four miles an hour is blowing in the same direction. The problem is a new one; we must go at it in a new way, and get many new angles on the situation.

Farm Implements Will be Improved

But there is a wonderful prospect in the mechanical tooling of the American farm for the tremendous work that it has to do.

But with the tractor coming on we must build better farm implements, and they will do for the farm implement business just what high-speed steel did to the automobile business.

I was talking to a certain-plow manufacturer, and he told me, "We made a great improvement in our plow last year. We put a roller bearing in the roller coulter." I said, "Well, didn't that add a lot of expense to your plow?" "Oh, well," he answered, "We didn't mind the expense of the bearing so much, but we had a devil of a time to cast the holes in the bearings smooth enough for the roller bearing to work in them." "Well," I asked, "how did you do it?"

He said, "We couldn't do it; we had to use a file. So I inquired, "Why didn't you put in a big drill press and ream the holes?" He replied, "We can't afford to do things like that on farm implement work."

In the tractor development work we must make sure we do not get to making an inferior type of apparatus. The tractors that are standing up are not the cheapest tractors. The tractors that are giving good service are not necessarily the highest priced tractors, but we have to study this problem, as we have never studied any problem, because the farmer who has put eight hundred or a thousand dollars into a tractor, is making a tremendous investment, and if the tractor doesn't do what he expects of it we will hear from him, and he will complain a great deal.



When Friend Meets Friend.

Columbia Dry Batteries

Buy them Anywhere
Easily and Quickly
Wired up

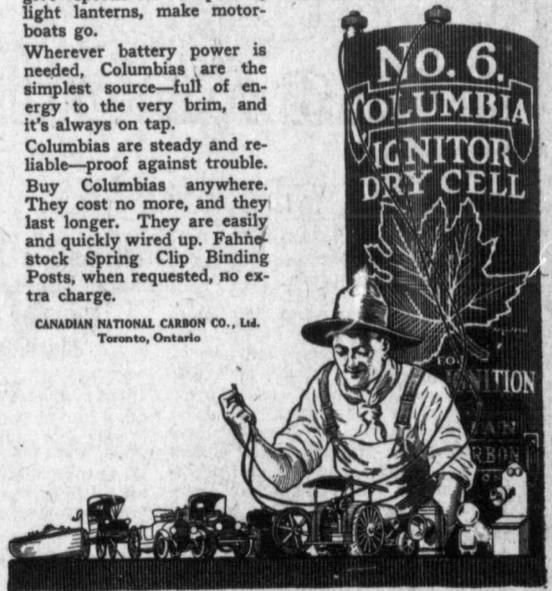
WHEN you come to think of it, what an astonishing variety of everyday uses for Columbia Dry Batteries!

Columbias put the spark of life into engines, autos, trucks and tractors; they ring bells, give speech to telephones, light lanterns, make motorboats go.

Wherever battery power is needed, Columbias are the simplest source—full of energy to the very brim, and it's always on tap.

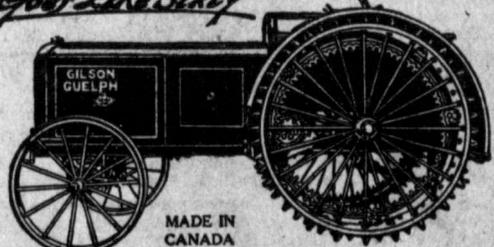
Columbias are steady and reliable—proof against trouble. Buy Columbias anywhere. They cost no more, and they last longer. They are easily and quickly wired up. Fahnestock Spring Clip Binding Posts, when requested, no extra charge.

CANADIAN NATIONAL CARBON CO., Ltd.
Toronto, Ontario



GILSON TRACTOR

Good Like Sixty



THE 100% Service Tractor that does all the things you want a tractor to do. Great power, compact construction,—extra strong and durable, but light and handy. It has great drawbar pull and economy,—and for belt work it is unsurpassed. Built of the finest materials,—Hyatt Roller bearings,

—Alloy steel,—Dust proof transmission, etc.—and all so simple and easy to operate that a small boy can do it easily.

The Gilson Standardized Tractor meets perfectly the demand for a high class, serviceable tractor to increase production, and is a money-maker for its owners. Sizes 12-25 and 15-30 h.p. Write to-day for full particulars.

GILSON MFG., CO., Limited, Dept. R, WINNIPEG, Man.

WHAT THE SOW THISTLE IS LIKE

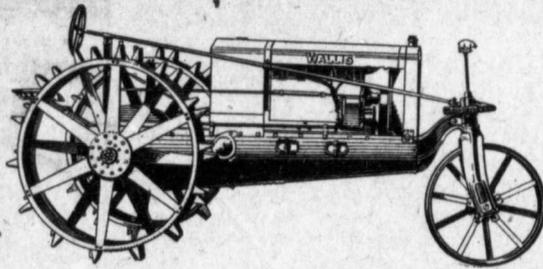
THERE are still thousands of farmers in Manitoba who cannot identify the Perennial Sow Thistle on sight. Especially is this true in the areas where it is not generally distributed, and as prevention is better than cure and recognition of the plant when it first appears on a farm is the secret of easy combat, the Manitoba Department of Agriculture sends out this intimate word description, by which any farmer may identify this exceedingly dangerous weed. There is no other plant growing in Manitoba that will answer this description in all its details, and we suggest that every farmer who does not know the weed should paste this description on his granary door or somewhere else where he can refer to it.

Roots.—This plant produces a system of brown root-stalks, running horizontally through the soil from two to six inches below the surface. A few fibrous roots grow from these root-stalks, but their main function is to act as storehouses of plant food, and to aid in propagation. On these root-stalks buds are produced, and from these upright shoots of a whiter color are sent to form new plants. From the upright root a great mass of fibrous roots are thrown out, and it is largely through these that the plant feeds. When undisturbed the roots will form a very dense mass, and the plants will come up very thickly. The roots and all other parts of the plant are filled with a milky sap.

Leaves.—At its first appearance above ground the plant produces a rosette of leaves quite similar in general appearance to that of the dandelion, the leaves being much the same shape. The leaves are of a light green color, rather soft, have a heavy mid-rib and are very distinctly veined. In the rosette stage the greatest width of the leaf is about one-quarter way back from the tip. An unvarying characteristic that helps greatly in identification is that in all stages the leaves have a continuous fringe of spines or "prickles." These spines are about one-sixteenth inch long, and are set one-eighth to one-sixteenth inch apart. They are very regular as to size. After two or three weeks in the rosette stage, the plant produces an upright stalk, and the leaves borne higher up from its sides are somewhat differently shaped and larger. On a strong plant these stem leaves are from six to twelve inches long close to the ground, but quite small toward the top of the plant. Each leaf clasps the stem tightly, having no leaf-stem, or petiole, as in the case, say, a poplar leaf.

An Unusual CATALOG

Illustrating in detail the Wallis Tractor will be sent you on request.



An Unusual CATALOG

Illustrating in detail the Wallis Tractor will be sent you on request.

Light in Weight but a GIANT in Performance

The Wallis, for the first time, offers you a practical combination of light weight and great power and durability—which means more work done at less cost.

The Wallis is years in advance of its time. It proves, as automobile engineers have proved,

that great weight is not essential to great power.

The Wallis weighs but little more than 3,000 lbs. According to reliable tractor directories, it saves from 1,000 to 5,000 lbs. of the weight of tractors designed to do the same work.

WALLIS

Built throughout like a fine Motor Car

SIMPLIFIED DESIGN SAVES POWER

The unexampled association of great power, light weight and tremendous strength found in the Wallis is due to simplified design. Every needless part has been eliminated. In the frame for instance—heavy steel boiler plate rolled into "U" section—the superfluous weight of I beams and counterbraces has been cut out—yet leaving the strongest, lightest construction known to science.

ADDED POWER RELEASED FOR WORK

40 to 50 per cent of the average tractor's power is used to propel its own weight, leaving only 50 to 60 per cent on the draw bar. In the Wallis, owing to simple design and light weight, fully 70 per cent of the power developed by the motor is delivered at the draw bar. This means a big gain in work and a remarkable saving in fuel.

**Light Weight
Great Power, Speed
and Durability**

**The Canadian-Fairbanks Morse Co.
Limited**

Saskatoon WINNIPEG Calgary

**Burns
Kerosene**

These stem leaves lose the regularity of outline, and are usually deeply cut with divisions directed backwards. They still preserve the fringe of spines.

Stems and Branches.—The stems are of a lighter green than the leaves, usually devoid of noticeable hairs or spines, of rather soft character and hollow. The plants grow from one to five feet tall. Side branches are shot out from the angles at the base of the leaves, and the plant becomes

considerably branched, especially if given plenty of room.

Buds and Flowers.—When about one-third developed the flower bud is much the shape of a binder twine ball. Then it lengthens. The flower is very similar in appearance to the dandelion, but rather larger and a faint shade darker. They are so much alike, however, as to be undistinguishable, except to an expert. They open in the morning and close at night. The outside

row of petals have very fine serrations at the tip. The bloom first appears about July 4th, and the buds continue to open for several weeks. In most cases after the first flower has bloomed there is a series of flowers on surrounding stems, and these latter grow longer than the earliest flower stems.

Seeds.—The seeds are about one-sixteenth inch long, dark reddish brown, oblong and ridged lengthwise.

BENEFITTED BOTH PARTIES

General Discussion Between Canadian and American Teachers Crystallized Many Ideas

AS helpful to the Canadian officials as to the American visitors was the tour through Canada of the technical educators brought by the American Red Cross Institute recently to study Canada's methods of rehabilitating returned soldiers. The Canadian officers found that in teaching they were taught. Previously the individual officer, in many cases, had glimpsed only the realities within his own small sphere of action, but after one of the conferences with the Americans realization of the complete story of the rehabilitation effort was brought home to many. The necessity of expressing working principles in conversation with the visitors was also helpful in focalizing attention on vital points.

At the conclusion of the Toronto conference one of the American party summed up a few of the benefits of the conference. The following quotation from his remarks is very much to the point:

"This is a distinct and very unusual problem. And I suppose you find that to work out the problem it is quite necessary to focus your interest and your sympathy and energies upon the man; and, too, as you are endeavoring by an individual process to return him to industrial life and independence and, if possible, to bring into a banded and synthetic process all the influences of the community that can function helpfully to that one end—that whether it may be the manufacturer, or the labor organization, or the hospital or the technical school, or the trade school or the social worker, or the teacher or the church or whatever volunteers of society that touch the problem—it behooves them to forget some of their usual methods of procedure in order to get that flexibility and adaptability of the individual which will enable him to go through a sort of biological process from the military life back to the rebuilding and re-growth—a parturition—into industrial life. If you were to put clamps about him it would interfere with that high ideal and defeat the end you are seeking and, therefore, as workers in this great movement you realize that anything that would bring in restrictions and limitations and regulations and other great sacrifices of study ought really to be held in abeyance

until he is able to live as before, and that you must focus your whole interest in the man, to bring him back again."

Mr. W. E. Segsworth, the Dominion head of the Vocational Branch, included the following important comment in his contribution to the discussion:

"One of the central ideas in this work is to change the man back from a soldier into a civilian. What the man mainly wants is to work for a few hours at first and gradually progress up to the point where he is employed 7 or 8 hours a day. The man must have a short course of intensive training. He must get back to hard work and long hours and even be driven a little bit, because he has to go to that kind of work when he re-enters civilian life."

Dr. G. W. Graham, the Vocational Medical Officer for Ontario, also brought out the following points:

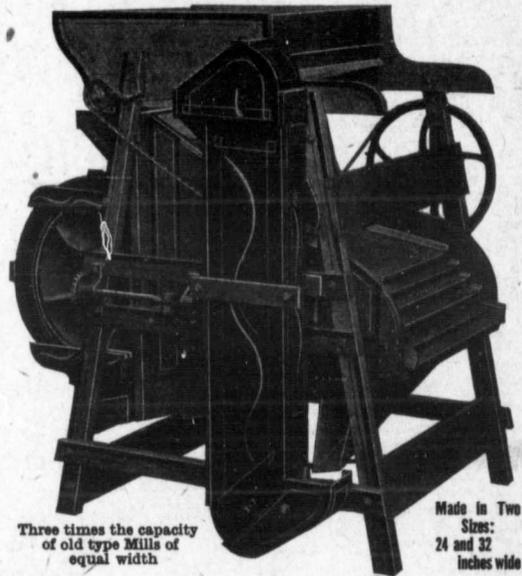
"The man, when we examine him medically before recommending a course of industrial re-education, sees as little of blank printed forms, of formality, of red tape as possible. We aim to get beneath the man's skin, to make him feel at ease as much as possible, to have a heart-to-talk with him in an intimate, off-hand manner. 'Would it be feasible to employ women for survey duties?' No, the returned man looks for a man-to-man talk. Speaking generally, he wishes to deal with the man who has been with him in France, knowing the trials he knows, speaking his language, and so able to sympathize with him."

THE DANDELION

THE common dandelion (Taraxacum officinale, Weber), has long been recognized as a very noxious weed in lawns. Of recent years it has spread over grass and grain fields throughout most parts of this province. Where grass land is overrun with this pest, it should be brought under cultivation. If plowed thinly with a breaking plow during June, then backset as soon as the sod is rotted, this weed will largely disappear. If troublesome in cultivated land, a frequent summer fallow or planting to a hoed crop will destroy them.

Where a lawn is very badly infested, it should be broken and reseeded to some good lawn grass mixture. If there are only a few scattered plants, spudding out the top of the weeds with a stiff knife and then injecting a little coal oil or gasoline in the hole made by the knife will quickly kill the long deep tapering root of this plant.

Announcing the Dual Grain Cleaner and Separator



Three times the capacity of old type Mills of equal width

Made in Two Sizes: 24 and 32 inches wide

One run through this machine takes out all wild or tame oats, king heads, thistles, etc. Cleans all kinds of grain perfectly. Double screens and sieves give immense capacity and do perfect work in conjunction with the side shake combination blast and repeat system. The double gang and cut off system are exclusive features found in no other mill. Any desired portion of grain can be elevated and re-run, removing dockage to any desired degree. No separator made has more selling points. Write for literature—NOW.

Combination Threshers—24x46 separator, fully equipped.

Famous Light Weight Cushman Engines.

Lincoln Superior Fanning Mills.

Smut Machines.

Automatic Pickling Machines.

Wild Oat and Barley Cleaners.

Grinders.

Incubators and Brooders.

Vacuum Washing Machines.

Shinn-Flat Lightning Conductor.

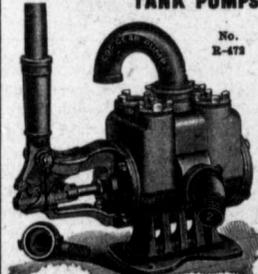
Barn Door Track and Hangers, etc.

Cushman Motor Works of Canada, Limited

Dept. A, Whyte Avenue and Vine Street

WINNIPEG, Canada

MYERS COG GEAR TANK PUMPS



No. 2-472

Favorites everywhere because of their capacity and uniform service. Hand or gasoline engine. Several sizes. Ask your dealer or write us. Circular on request.

F. E. MYERS & BRO. Ashland, Ohio

Food Will Win the War

Serve your country and yourself by raising FOOD on the fertile plains of Western Canada. The Canadian Pacific Railway makes it easy for you to begin. Lands \$11 to \$30 an acre; irrigated land up to \$50; 20 years to pay. Loan to assist settlers on irrigated lands. Get full particulars and free illustrated literature from

ALLAN CAMERON, Gen'l Supt. C.P.R. Lands

912 1st St. East, CALGARY

International, Mogul and Titan Kerosene Tractors

These tractors were developed through twelve years active field work in every civilized country in the world. A size and type for every farm.

All of them operate successfully on kerosene and other low grade fuels down to 39 degrees Baume.

All of them are fully equipped to do both field and belt work.

They are sold by a company that knows farmers' needs, and that also sells implements and machines to be operated by the tractor, assuring proper combinations of tractor and tractor power machines.

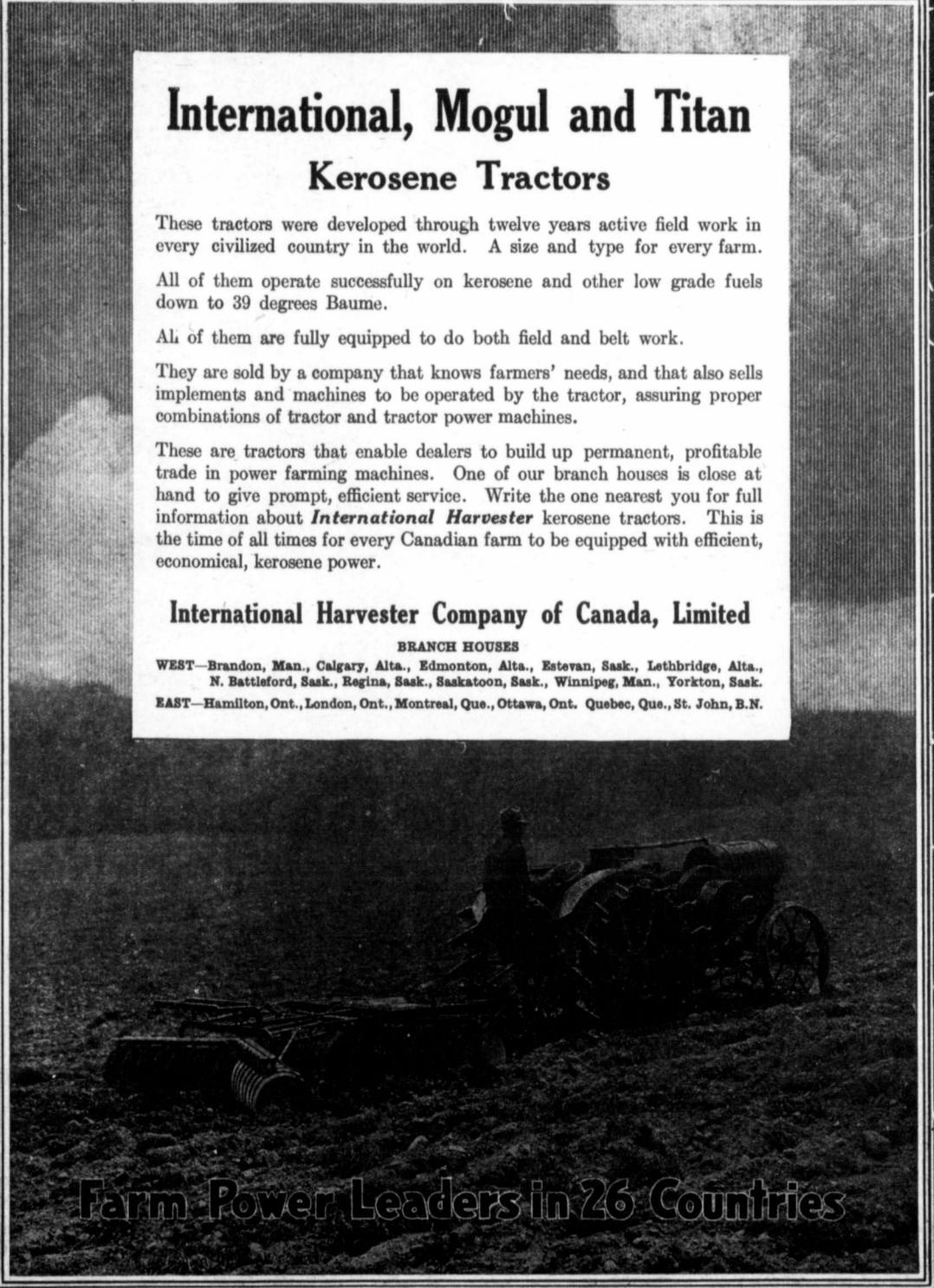
These are tractors that enable dealers to build up permanent, profitable trade in power farming machines. One of our branch houses is close at hand to give prompt, efficient service. Write the one nearest you for full information about *International Harvester* kerosene tractors. This is the time of all times for every Canadian farm to be equipped with efficient, economical, kerosene power.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont. Quebec, Que., St. John, B.N.



Farm Power Leaders in 26 Countries

Farm Labor and Power Farming

FOR years there has been a constant movement city-wise of farm workers. Youths of both sexes have looked towards city life as freedom from drudgery and the opening of unlimited opportunities for advancement. The most important factor which influenced the farmer's son and daughter to view city life as more desirable than country life was the longing of a comparatively well educated mind for something to control, some problems to solve, some decisions to make, and responsibilities to bear. More mental work was wanted to take the place of the purely physical labor requiring only brute strength.

Progress Through Education

With the advantage of better education and the consequent power of self-thought and the broader vision of life, it was inevitable that the growing generation should know of the methods which an advanced civilization had developed for lessening the drain on human energy in farm work. It was impossible to keep farm labor in ignorance of the improvements and advantages of power machinery which have been coming into the agricultural life of our nation so rapidly. Nor should any attempt be made to retard the spread of such knowledge so long as proper means are provided for counteracting its effect.

On every farm where little or no improved machinery had been acquired the farm hands work continually under the burning knowledge that for ten or twelve hours of their arduous work in the field from two to three times as much was being accomplished in other parts of the country in the same time with less exertion

through the use of modern equipment.

Discouragement was the inevitable result of working amid anciently equipped farming communities with the realization that the efficiency of the work being done was decreased 100 per cent by lack of proper equipment and for the same amount and even more expended energy you were producing for your country only one-third as much as others with the advantage of modern machinery.

Considering these points and in view of the labor conditions and the need of the Allied world for sufficient food-stuff to continue its war against the great Leviathan that is stalking over the ravaged fields of Belgium and France, is it not the duty of the farmer to acquire as much modern farming equipment as the capital represented in his holdings warrants and the amount of farm products he should raise makes necessary?

Power Equipment Marks New Era

Power equipment—tractors and gas engines, with the machines they operate; silo fillers, threshers, cream separators, electric lighting plants, saw rigs, corn huskers, corn shellers, etc.—is revolutionizing farm life to-day. It is marking a new era in the evolution of our agricultural life. It is making work on a farm attractive to the average and above the average man and maiden. Business methods are recognized as essential to proper efficient operation, and with business methods and mechanical machinery to attract the enterprising, the trend of labor is now rather from the city to the farm than otherwise. It is the opportunity



"HELP" FROM THE CITY

Amused Patriot: "Well, how can you expect me to know as much about hay-making as you fellows who're at it all the year round?"

A Suggestion

To those, who for health or other reasons, formerly used the regular Ale, Beer or Stout (which may now only be obtained on a doctor's prescription), we would suggest a trial of Maltum or Maltum Stout, which contains all the healthful properties of choicest malt and hops, but is non-intoxicating.

Maltum
REGISTERED

is a high grade malt beverage. It will improve the appetite, and be found deliciously refreshing on a hot day.

May be had at table in all first class Hotels, Clubs and Cafes; or may be obtained from Grocers or Confectioners.

It is a liquid food.

Manufactured only by
E. L. DREWRY LIMITED
WINNIPEG



Canada Food Board License Number 15-325

OXY-ACETYLENE WELDING APPARATUS AND SUPPLIES

We can supply a thoroughly practical outfit from \$100.00 up. There should be at least one plant in every district to repair breakages quickly and SAVE TIME and MONEY. Up-to-date farmers with Tracton Engines are putting in welding outfits and doing their own and their neighbors' repairs. We give free instructions to purchasers.

BROKEN CASTINGS

Scored Cylinders or any kind of Repairs. We Re-bore Cylinders, True Up Crank Shafts, Re-tip Boiler Flues and are in a position to handle any repair job promptly.

Nothing too large or too small

GIEGER WELDING WORKS, SASKATOON

The Famous K. W. & SWISS HIGH TENSION MAGNETOS IN STOCK

We Repair all makes Magnetos and Coils.
Work Guaranteed. Factory Service.
Prompt Dispatch. Official Service Station.

Acme Magneto Works, 278 FORT ST., WINNIPEG

FOR SALE—Daisy 32 x 50 Separator, with blower, feeder, and high weigher. All new bells, and 130 ft. & in. drive belt, used two days. Complete, ready to run. \$400.00. F.O.B. Botha. Wm. Drewes, Botha, Alta.

FOR SALE—Aultman Taylor 30-60 Tractor, kerosene burning and first class condition. Will be sold worth the money, but for cash only. Address Tractor E, Box 3164, Winnipeg, Canada.

FOR SALE OR TRADE—I have a 24-40 oil pull tractor in good shape; will trade for large steam engine or will sell tractor with 40-44 Hussey separator at a bargain. Curtis C. Baldwin, Sparta, Michigan.

INTERNATIONAL 8 H.P. ENGINE and 10-inch Rapid Easy Grinder, complete with bagger and belt. Guaranteed in first-class running order. \$325 cash. W. G. Loder, Dropmore, Minn.

One Dependable Power Plant

Upon which You can Always Absolutely Rely

That you know will save you money instead of wasting it.

That you know will always stand ready to furnish its maximum rated horse-power.

That you know will not cost you exorbitant sums for repairs and accessories.

That you know will start when you want it to run.

That you know will run any time and all the time.

That you know will last you for many years.

THIS IS THE

Nichols-Shepard Steam Engine

This engine is built by a Company which has been building steam engines for many, many years.

It has the strongest boiler, the heaviest boiler plate, of any traction engine ever built. It is made of the heaviest material, and has the strongest gearing and shafting of any steam traction engine made.

It is built with all the conveniences which modern invention has supplied, and furnishes a steady, reliable power plant that will go out and work day after day and year after year, giving the best of results.

The Nichols-Shepard Steam Engine is not in the experimental stage. It has been tested and tried through years of service, under all conditions of weather and altitude, doing the hardest kind of work.

It does not require an expert to operate this engine, and for the man who wants reliable and ample power, whether for operating threshing machinery, plowing, grading, or any other heavy work for which it is adapted, we cannot too strongly recommend the Nichols-Shepard Steam Traction Engine—a fitting companion to the world-famous Red River Special Separator.

Write for big FREE Catalogue. It will be sent to you at once. Ask for your copy of the Home Edition of the Red River Special Separator.

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 and Agencies: (with Full Stock of Repairs) at

REGINA, Saskatchewan

H. P. NORTON COMPANY, CALGARY, Alberta

WINNIPEG, Manitoba

to solve a problem, to be the master, to have something to think of that makes a position or job worth while to anyone, and not the monotony of physical work in a mechanical way as in the old order. Physical labor is giving way to mental work. Women find life on a farm more attractive through the introduction of electricity in housework, in adding to the comforts and conveniences of housekeeping, and a thousand and one ways that go together to make housekeeping on the farm as pleasant as the modern city home.

Farmer's Part in Progress

No farmer, therefore, should neglect the opportunity to make his place more attractive to experienced farm workers, be they of his own family or hired. And the interest on the investment in modern equipment will justify the expenditure of the necessary capital.

The motor truck and the tractor are the most valuable assistants the government has at the present time, and their use by farmers is recognized as action towards a fuller co-operation with the government in furthering its war programme.

A TRACTOR WITHOUT BELT PULLEY ONLY FIFTY PER CENT COMPLETE

IT is a peculiar situation, but one that is apparently very true, that many dealers who are supposed to be conversant with tractor uses, do not feature the belt work of the tractor as it deserves. It is even more peculiar that some manufacturers put out a machine without any belt pulley on it, selling this part of the tractor as an accessory—a thing to be put on by the dealer or user.

When it is realized that from 50 to 60 per cent of the work of the tractor is on the belt, it is most astonishing that any manufacturer should consider belt arrangements as an after-thought. It is a part of the machine itself and a very vital part. Any tractor that is put out without it is only 50 per cent complete.

"Why is it put on the market in this incomplete fashion?" you ask. The answer is simple. It enables the maker to put it out at a greatly reduced price, but conversely, it costs a great deal of money for the unfortunate user after he gets a tractor of this type to supply the proper belt pulley to complete the machine, the cost of installation to the purchaser sometimes amounting to as much as 20 per cent of the total original cost.

The enormous versatility of the tractor which has made it a multi-purpose machine on the farm is largely due to the belt. In

fact, the belt work of the tractors already in use has been so considerable that it has already effected, in a large measure, the sale of stationary engines for farm use.

From an engineering standpoint, we believe that the method of coupling up the belt pulley is almost as important as the design of the final drive itself and that a tractor which does not have the belt pulley in the proper location and properly driven, will not be a successful machine from a commercial standpoint and should be avoided by the dealer who has business acumen.

ACTUAL FACTS ABOUT SALE AND DEMONSTRATION OF FARM TRACTORS

By Franklin N. Supplee in "Chilton Tractor Journal."

NO one doubts that the farm tractor is the coming thing.

No one really argues that it has to be the coming thing, but both the manufacturer and his representative in the field, and the farmer have and to a certain extent still are making the tractor business harder than it should be. First, I would like to take the premise of the manufacturer. Of all the makers to-day of tractors, I doubt if there is one but what is making good, conscientious products, and is selling them at what is considered a good conscientious figure; in other words, their product is honest all the way through.

In their enthusiasm for this great labor saving and aid in production device, impressions may get abroad that are not what the manufacturer would have them to be.

The manufacturer from his end has built a machine based on the laws of mechanics. If he is a successful manufacturer, he knows the limitations of mechanical power, endurance and construction. It might be said here, that no man can grow to any size in the tractor game unless he is good and unless he knows positively the possibilities and the limitations spoken of.

We now have the machine as produced. We place it in the hands of the advertiser, the distributor, the dealer and his salesman. Here mistakes have occurred, through their enthusiasm let us say. Many machines have been overrated either as to power or as to possibilities. In order to close a sale or create a demand, statements have been made or impressions created that the machines could never live up to.

Every one must realize that the tractor of the light and the heavy type, and the cultivator, each have their place just as the light



Fairbanks Wagon Scales

are the practical heavy load scale for the farm as well as for contractors, builders, hay and grain dealers or coal merchants. They combine convenience, simplicity and accuracy. Fairbanks Wagon Scales fill every weighing requirement in

Capacities 5 and 10 Tons

Every Fairbanks Wagon Scale may be fitted with a Compound or Columbia Grain Beam, adaptable to graduations and standards required by the purchaser. Platforms are of steel frame construction and vary from 8 x 14 ft. to 7 ft. 11 in. x 22 ft. Extension levers to carry beams 20 feet from scales are another convenient device obtainable at small additional cost, making it possible to locate the weighing beam under cover of an adjoining building.

Fairbanks Pitless Wagon Scales

are convenient and accurate scales for use where a pit is undesirable. The height of scale is only nine inches from top of platform to bottom of steel frame. This is an ideal scale for farm, contracting and quarry use. Capacity 5 tons. All prices are exclusive of timber and foundations. Write our nearest branch for full particulars.

The Canadian Fairbanks-Morse Co., Limited

St. John Quebec Montreal Ottawa Toronto
Hamilton Winnipeg Calgary Windsor
Saskatoon Vancouver

73

DON'T SCRAP YOUR BREAKAGES

Send us all your broken or cracked Cylinders, Crank Cases, Gear Wheels, Gear Housings or Machine Parts. We will deliver perfect results and save you money.

HUB WELDING COMPANY

253 SHERBROOKE STREET, WINNIPEG

Lowest Prices consistent with Best Workmanship.

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

FOR SALE—Complete Threshing and Plowing Outfit; 40 h.p. Flour City Gas Tractor, in prime condition; also Yellow Fellow Avery Separator, 22-24, complete with all attachments. Outfit cost originally \$7,000. Will sacrifice, as I have sold farm. What offers? Cash or terms. X., care of E. H. Heath Co., Box 2164, Winnipeg.

ONE FOUR-FURROW FLOW, 14in. bottom; practically new; manufactured by Deere Plow Co. Also 18-20 Gaspart Tractor, two-cycle engine; good powerful machine. \$400.00 cash for lot; F.O.B. Burlington Junction, Ont. Bethanbreck Orchards, 508 Lumsden Building, Toronto, Ontario.

and more expensive touring car, the small and the big truck each have their place.

Farmer Expects Too Much

The farmer, through hopes of possibilities in this miraculous thing as we are all led to believe they are, has received impressions and expects each and every tractor to have all good points as every machine now advertised on the market has. He is apt to dwell more on fine differentiations between carburetors, etc., than he is the guarantee of the company backing the machine, that the machine will do the work on his farm and do it cheaply and efficiently.

The things that should interest the farmer are these: First cost, operation cost, upkeep cost, simplicity of construction so that the parts will not shake loose due to the heavy duty work that it has to perform and strong construction that will keep the upkeep down. The machine should be short turning, broad wheelbase to stand the rolling eastern conditions. The weight of the tractor should be carried, not pushed.

One of the minor conditions that would be well for the farmer to look into, is self steering in the furrow. One drive wheel running in the furrow prevents sliding on side hills. An oiling system that will not allow the kerosene to get around the bearings, in other words, a force-feed system, is essential. The power of the motor, a guaranteed drawbar pull, are highly necessary. The accessibility of parts on a machine so that a farmer can practically become his own repair man, is a very valuable item. I must reiterate again, the farmer should ask and the manufacturer should deal on the efficiency of the machine rather than the marvels of its equipment.

Considering the Cost

The thing that should next be brought to the farmer's attention is the question of costs. The present day a pair of good heavy



ONE WHO KNOWS

German private (suddenly popping out of shell-hole): "Kamerad! Take me quietly and I will tell you all Hindenburg's secrets."

farm horses or mules cost \$500. This pair of animals will pull one plow 10 hours a day if the ground isn't too hard and the day isn't too hot.

Three pairs of \$1,500 worth of flesh will pull three plows, but it is said by good authority that it costs the production of 5 acres of farm land a year to feed one horse or somewhere in the neighborhood of \$125 a year, while that would make the cost of operation of two horses \$300 a year. Of course, this does not take in the cleaning or doctoring or care of harness, etc.

Now the cost of a tractor operating 10 hours a day, 360 days in the year, would cost about \$1,500.

Horses cannot run the big threshers efficiently, or saw wood, or fill silos, or do a multitude of other things that the modern

farmer deems in the way of belt work. The horses eat whether they work or not.

The tractor costs nothing when it does not work. I should here like to cite an instance of where a farmer who had been following the horse plow method of farming all his life, bought a tractor. With his horses he would have gone to work at six o'clock in the morning and ended at sunset. With his tractor he started at 9 o'clock under the welcome shade of an umbrella. He laid off an hour for dinner and quit at 4.30. His tractor remained where it was for the morning. He plowed 18 acres at six hours a day in the three days, and had ample time to take care of his other work because he was rested and he could throw his full energy on the other work set before him.



IMPERIAL SERVICE

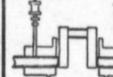
If you are in doubt about the proper lubricant, ask the Imperial Oil man. He will give you courteous attention and sound advice on your lubrication problems. That is part of Imperial Service.

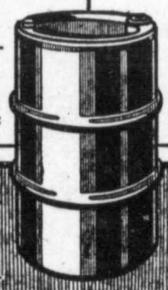
FARM MACHINERY AN ASSET ONLY WHEN IN USE

YOU get no return from your investment when your farm machinery stands idle. Delays caused by broken parts or worn out bearings are costly. Many times these delays can be traced to improper lubrication. Correct lubrication is an important factor in keeping your machines in shape for full service.

You take no chances when depending on us for lubrication advice. We know and will recommend to you the correct Imperial Oil for every lubrication requirement. We can advise you and can supply the correct lubricant at our many stations all over Canada. There is one near you. Every Imperial lubricating oil is sold in steel barrels and half-barrels—convenient and economical. There's no waste. You use every drop you pay for. You are sure it is uniform and clean.

A Correct Lubricant for every Farm Machine

 <p>For Gasoline Engines, Tractor, Auto or Stationary POLARINE OIL STANDARD GAS ENGINE OIL</p> <p>For Kerosene Engines, Tractor or Stationary POLARINE OIL HEAVY IMPERIAL KEROSENE TRACTOR OIL <small>(Recommended by International Harvester Co.)</small></p>	 <p>For Open Bearings of Farm Machinery PRAIRIE HARVESTER OIL —very heavy body, resists cold, won't thin out with moisture ELDORADO CASTOR OIL —a thick oil for worn and loose bearings</p>	 <p>For Steam Cylinder Lubrication, whether Tractor or Stationary Type CAPITOL CYLINDER OIL —the standard product for steam cylinder lubrication</p>	 <p>THRESHER HARD OIL</p> <p>For Grease Cap Lubrication of Bearings a clean solidified oil high melting point</p>
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IMPERIAL OIL LIMITED
BRANCHES THROUGHOUT CANADA

BOB LONG
UNION MADE
OVERALLS
SHIRTS & GLOVES

My Dad wears 'em

—ONE PIECE BACK & WID

93

Known from Coast to Coast
R.G. LONG & CO. LIMITED
TORONTO CANADA

Farm Engine Economy

WHAT will a gasoline engine do and what will it cost to do it? This is a very pertinent question, and one that the prospective purchaser of an engine for farm work would like to have answered.

The following comparative costs for various operations are the result of estimates by a large manufacturer in the United States from reports sent in by a large number of users. The basis of calculation is twenty-five cents worth of fuel and this quantity is estimated as sufficient to do the following kinds of work:

Will cut 12 tons of silage, elevating it 30 feet.

Will cut 200 to 250 feet poplar lumber.

Will cut 150 to 200 feet of oak lumber.

Will cut 10 to 12 cords of wood. Will run draw saw, cutting 6 to 8 cords wood.

Will grind 40 to 50 bushels shelled corn.

Will grind 20 to 25 bushels ear corn.

Will grind 20 to 30 bushels wheat.

Will make 2,000 to 3,000 pounds milk into cheese.

Will pump 1,200 to 1,600 gallons water.

Will pump water for 80 to 100 head horses.

Will pump water for 400 to 500 hogs.

Will pump water for 500 to 700 sheep.

Will shell 300 to 350 bushels corn.

Will cut 25 to 30 tons silage.

Will cut 20 to 25 tons hay fodder.

Will furnish 80 hours of electric light.

Will run 60 saw gin stand one hour.

Will make 4 to 6 barrel flour.

Will do 5 weeks' washing at 2 hours a week.

Will furnish lights for 8 rooms for 10 evenings.

Will grind from 125 to 180 pounds green bone.

Will run rip saw, band saw and joiner all 8 to 10 hours.

Will turn the grindstone, run the emery wheel, forge, lathe and drill for 24 hours.

Will run emery wheel, drilling machine and forge for 8 to 10 hours.

Will pump 30,000 gallons water with centrifugal pump.

Will pick 20 to 30 bags of peas.

Will pump water from 150-foot well all day.

Will run a medium cutter half a day.

Will run a medium size saw 9 hours.

Will handle a 500-foot well machine 4 to 5 hours.

Will pull average broom corn thresher half a day.

Will bale 5 tons of straw.

Will run a 750-lb. drill half a day at 250 to 300 feet.

Will run a home water system, furnishing water for an 8-room house 10 days.

Will save your horses two-thirds of the work on a binder for a day.

Will grind 1,000 to 1,200 pounds alfalfa meal.

Will grind 1,000 to 2,000 pounds kaffir corn in head per day.

Will mix 20 to 30 yards of concrete.

Will elevate 2,000 to 3,000 bushels of corn.

Will run auto-mower 18 hours.

Will run sprayer and handle 2 or 3 leads of hose all day.

Will handle a 600 pound weight hoist a day of 10 hours.

Will run a diaphragm pump, handling 2,500 to 3,000 gallons per hour for a day.

Will cut 1,000 to 2,000 shingles.

CAUTIONS IN GRINDING VALVES

1. Never allow the valves to become mixed; either mark them with a prick punch, or remove and complete them one at a time.

2. When a valve seat is worn badly or unevenly, the valve will have to be reseated by a seating tool, or replaced by a new valve.

3. Sometimes valves become warped or the stems bent slightly; in such cases the best way out is a new valve. New valves must be ground in to fit the same as old ones.

4. Valves when ground and in good shape should drop into place freely and seat all around with a click. Any sluggish action or tightness should be regarded with suspicion.

5. Although valve grinding is a part of a complete overhaul, it is also necessary during the running season. Whenever compression is poor and pistons and rings are tight, valve grinding will help. It can be done without removing anything but the cylinder head and valve stem covers. Valve grinding does not require an expert, but common sense and care are necessary.

SO WAS HUBBY

"My dear, the doctor says I'm in need of a little change."

"Then ask him to give it to you. He's got the last of mine."

Delco-Light



Efficient, productive farms use Delco-Light

Electricity marks the modern farm. Wherever you find a Delco-Light plant—there you will find a business-minded farmer—successful and efficient.

Delco-Light increases farm production, reduces farm labor, eases the burden of the farm house-wife.

Chores formerly performed slowly by hand are done in half the time by Delco-Light power.

Indoor work is made easier by clean, clear light—and no lantern or lamp to carry.

Farm help is more easily secured where there is electricity.

These things have won over 50,000 users to Delco-Light.

And to-day those more than 50,000 plants are giving unstinted satisfaction.

Delco-Light is the right electric-lighting plant for farm homes. It was designed by world-famed engineers for just that purpose.

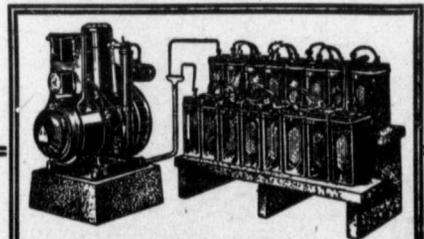
As a result Delco-Light is efficient and sure—supplying ample current without fail.

Delco-Light is simple and economical—a child can operate it, and it runs on coal oil.

Get further information about Delco-Light to-day. Write to your nearest distributor for free literature, and he will gladly send handsomely illustrated booklets telling interesting facts about electricity on the farm.

BREEN MOTOR CO. - WINNIPEG
BRUCE L. ROBINSON - CALGARY

The Domestic Engineering Co. - Dayton, Ohio

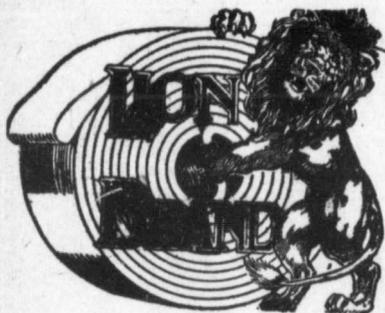


Delco-Light Engine and Generator
Self-Cranked—Air-Cooled—Ball
Bearings—No Belts—30 lbs. high
—Runs on Kerosene or Gas

Delco-Light Batteries
Thick Plates—Long Life—
Highly Efficient

"Good Old Dependability"

WAS THE NAME BY WHICH ONE OF THE GREATEST OF NELSON'S CAPTAINS WAS KNOWN TO HIS CHIEF AND TO EVERY SUBORDINATE WHO SERVED UNDER HIM. HE WAS CREDITED WITH NO "HEROIC VIRTUES," BUT THE MERE CIRCUMSTANCE THAT **HE NEVER FAILED TO LIVE UP TO THE LETTER OF HIS PROMISE**, DID THE TRICK. OUR PRODUCTS HAVE GOT NO FANCY FRILLS BUT WE DO CLAIM FOR THEM THE CHARACTER OF **RELIABILITY**. THE



LION BRAND
Rubber Belt

and the

**YELLOW
FELLOW**

ENDLESS THRESHER BELT



are unbeaten in the field of grain production.

They are sold by all thresher companies doing business in Canada. They may cost a trifle more than some fabrics that are always a big risk but that is forgotten in the added years of service, and we guarantee our goods against all disappointment from slippage or breaking. It is not possible to make better belting by any scientific method known at this day.

Gutta Percha and Rubber Limited

WINNIPEG FORT WILLIAM REGINA SASKATOON CALGARY LETHBRIDGE EDMONTON

WELL FED SOLDIERS WILL WIN THE WAR

No Food Reserve in Britain

"It is obviously an elementary precaution to build up as large a reserve of food as possible in an island which is menaced by submarine blockade. No such reserve is yet in sight and there should be no slackening in Canadian efforts to provide foodstuffs for the Mother Country."—Late Viscount Rhondda.

Food Regulations Imperative

"If present restrictions should be in the slightest degree relaxed it would result in serious want for the people in Europe before the wheat crop could reach the market."—Herbert Hoover, United States Food Administrator.

World's Wheat Reserves Exhausted

"Even if the greatest expectations of the 1918 harvest are realized, the fact remains that the world's reserves of wheat are exhausted and it will be absolutely necessary to continue conservation and substitution until the 1919 crop situation is known. Canada is daily increasing the manufacture of substitutes for wheat and consumers are urgently requested to make use of these substitutes to the limit of their ability."—Henry B. Thomson, chairman of the Canada Food Board.

Behind in Meat Schedule

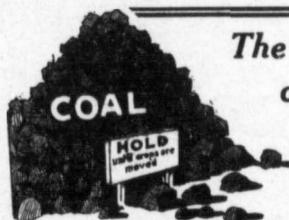
Because of the shortage of shipping Great Britain has already fallen behind 25,000 tons in her schedule of meat shipments guaranteed to France, compared to the total of 70,000 tons shortage in the schedule for 1917.

Soldiers-of-the-Soil at Work

Nearly twelve thousand soldiers of the soil boys are hard at work on the farm already, helping in the campaign for greater war-time production, in addition to those who arrange for their own employment independent of the soldiers of the soil organization. The soldiers of the soil are divided as follows: British Columbia, 669; Alberta, 616; Saskatchewan, 1,405; Manitoba, 1,006; Ontario, 4,621; Quebec, 670; New Brunswick, 677; Nova Scotia, 1,788; Prince Edward Island, 500. Reports indicate that the boys are thoroughly enjoying farm work.

Vancouver Women Pledged

At a mass meeting of nearly two thousand women in Vancouver the pledge was made to conform exactly to the requirements of the Canada Food Board and to apply the restaurant regulations in their own homes. Furthermore it was "especially resolved to discountenance any social functions which promote the consumption of wheat products, pork, sugar and fats."



The Railways cannot carry both Wheat and Coal at once!

GET YOUR "KING" COAL IN NOW!

There's no time when the grain is moving to haul coal, nor will there be equipment. Conditions were never like this before—you are urged to place orders now.

Special prices quoted for carload orders now. Write or wire for special prices on 30 to 40 ton carloads of "King" Coal, Lump, Egg or Nut size—delivered to your station. "King" Coal does not clinker.

THE CARDIFF COLLIERIES LTD. EDMONTON, ALBERTA

Mining capacity (with car supply) 2,000 tons daily.

SUCCESS Comes In Cans FAILURE Comes In Can'ts

Many men will say they want to be successful; but they are not willing to "pay the price". What is the "price"? **Save your money.** Next to your kin-folks, Money is the best friend you have on earth.

Take good care of it. Spend less than your income each month, and put your savings in The Merchants Bank.

\$1 opens an account.



THE MERCHANTS BANK

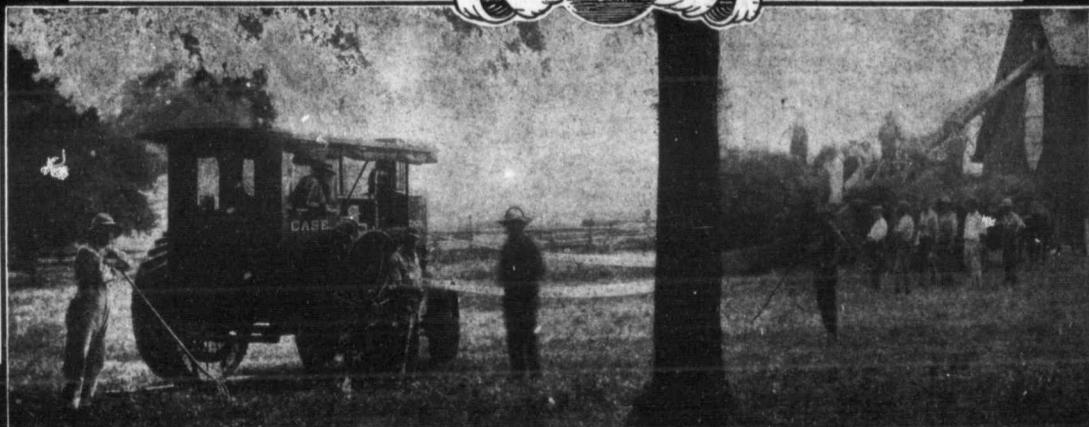
Head Office: Montreal. **OF CANADA** Established 1864.

with its 19 Branches in Manitoba, 21 Branches in Saskatchewan, 55 Branches in Alberta, 8 Branches in British Columbia, 102 Branches in Ontario and 22 Branches in Quebec serves Rural Canada most effectively.

WRITE OR CALL AT NEAREST BRANCH

CASE

THRESHING MACHINES



A Proven Threshing Outfit

SOON after Case Steam Rigs became the acknowledged leaders, we began to develop what is now known as the Case 20-40 Kerosene Tractor. It is one of the very first tractors put on the market. Thousands are in successful operation, day in and day out.

The present model incorporates all the improvements of recent years. We know of none that equals it for all sorts of big farm operations, from plowing to threshing.

It will pull a 5 or 6-bottom 14-inch plow. It will haul a battery of other implements such as disc, spike or spring-tooth harrows and grain drills. For heavy belt work it has proven itself an ideal machine.

Hundreds of threshermen use the Case 20-40 for driving fully equipped 32x54 Case Threshers. It delivers its full rated horsepower steadily under the most trying conditions without overheating the motor.

You make no investments in experiments when you choose this Case 20-40. All the experimenting has been done long ago. It is ready to serve you, as it has served others, always ready, economical and easy to handle.

It is the ideal tractor for a farmer with a large acreage or for the custom thresherman.

In every particular it is tomorrow's kind of a tractor--in it you get all the advantages which will later become standard. But you get them NOW.

Write for complete information regarding this Case 20-40 Kerosene Tractor and our smaller sizes. Study specifications and make comparisons.



J. I. Case Threshing Machine Company, Inc.

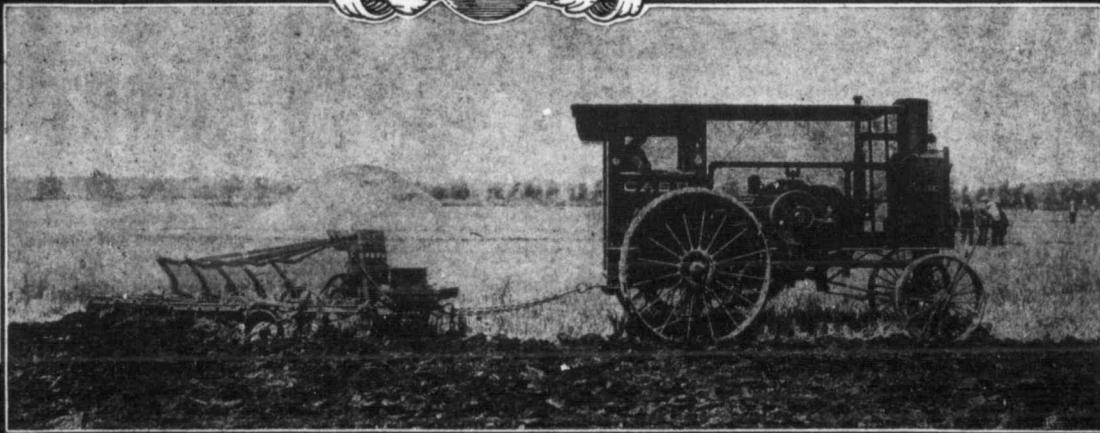
(Founded 1842)

1279 Eric Street, Racine, Wis., U. S. A.

(770)

CASE

KEROSENE TRACTORS



Grain Saver—Time Saver

CASE THRESHERS have been made for 76 years. Such experience has impressed upon us the importance of grain-saving, simplicity, durability and speed. These fundamentals we recognized long before the Great War, long before the campaigns began for grain-saving.

For years the separating capacity of Case Threshers—the thoroughness, the cleanness—has been unequalled. There are records galore—farmers' written evidence—which prove Case superiority. Men who take pride in big yields know that the Case is their best ally.

Years of experience have taught us, too, the necessity for simplicity—simplicity which saves driving power, simplicity which will minimize adjustments and delays.

And so we suggest to any man that he compare Case Threshers with others. Note the added simplicity. Figure how much easier it is to drive and haul a thresher like the Case.

Note also the construction—all steel, with rigid frames. Your good judgment will tell you that a Case will last many times longer than a wooden thresher. It will stand the continuous strain and the weather better.

Case Threshers can be operated successfully with Case Kerosene Tractors if you prefer this power to Case Steam Tractors. In both we have developed a smooth, steady belt drive.

— There is a size of Case Thresher and Case Tractor to meet your exact requirements. Our free booklets describe and picture both lines. Write today.

J. I. Case Threshing Machine Company, Inc.

(Founded 1842)

1279 Erie Street, Racine, Wis., U. S. A.





PIGS AND PIGS—AND THEN SOME!

Graphic Word Pictures of a Misunderstood and Unappreciated Domestic Animal

By Wallace S. Birge, M.D., in "Farm and Home"

YES, I have a great admiration for pigs. I consider them to be a misunderstood and unappreciated domestic animal. During fifteen years of my life I bred pigs on a fairly large scale, and I boldly affirm from my experience that the pig is more intelligent than any other beast, more courageous, cleaner and possessed of a more delicate organization. I have my reasons for making such a statement. I will tell them, of course.

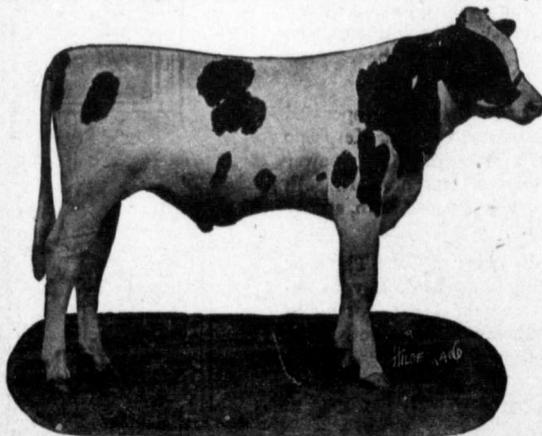
To begin with, I bought thirty-six young pigs and put them in a pen. For the first few days they behaved themselves admirably. Being at that time a novice in the business of handling pigs, I thought this unusual quietude was the result of their being well fed. What they were really doing was reflecting on their confinement and devising a way to get out of that pen. At any rate, they got out. I searched for the missing thirty-six, and found them in my garden, eating lettuce and early peas. But with the help of three farm hands I could not drive them back into the pen; they seemed to have forgotten where

and how they got out. Around the pen they ran, but not one offered to get in. My men were getting tired and I was nearly wild with rage. Finally, declaring that those pigs should go into their pen, and go in the same way they came out, I went to the house and loosened a huge, half-blood Newfoundland dog that had an inborn dislike for hogs, and commanded him to put those pigs in their pen and not to dare to bite one of them.

Jack, the dog, looked first at me and then at the pigs, and, making a quick jump at one small specimen, took him down. Standing over the prostrate pig, the dog growled savagely, and every now and then he gave him a severe shaking. By my command the pig was released, and, running to a corner of the pen, leaped to the third board, turned partly on its side and scrambled through. The others followed as fast as possible.

They would have scamped around that post for a week, and not one would have revealed the place if the sudden and overwhelming fright, resulting from being held in the jaws of a hundred-pound dog, had not made this one betray the secret. Afterward, the thirty-six pigs would tunnel under the fence and invade my garden, but when the dog was called, with wild grunts of alarm, they rushed into their quarters.

Soon it became necessary only to stand on the hill and yell,



THE WORLD'S RECORD HOLSTEIN

This fine six month's old bull (described as a faultless individual) was sold by A. C. Hardy, of Ontario, to E. A. Stuart, of Carnation Stock Farms, Washington State, for the enormous sum of \$106,000—the highest price ever paid for an individual of any breed.



Crop Failure

is the most eloquent preacher of the gospel of "mixed farming." The most profitable end of mixed farming is the dairy cow—not the scrub, but the well-bred milk cow who gives more than she consumes. 1918 is bringing this "gospel" home to many farmers, men who will have a well-equipped dairy outfit in 1919 who never kept a cow before. And the one thing to get the last dollar out of the good milker is the

"MAGNET" Cream Separator

The greatest labor-saving and food-conserving machine ever introduced into Dairy Farming.

After nearly 18 years' constant use on Canadian farms the "Magnet" has established beyond the shadow of a doubt that its square gear drive and ball-bearing adjustments is unequalled as an effective piece of dairy mechanics and has nothing in front of it in lasting quality.

DAIRY WOMEN know that the "MAGNET" bowl and one-piece skimmer is easily washed sweet and clean in less than five minutes—a saving of from 10 to 15 days' labor each year over the time required to properly wash the disc kind.

MAGNET ALWAYS SKIMS CLEAN

because its bowl is supported at both ends, cannot wobble and therefore will do perfect skimming for a life-time. Dairy men and women can avoid all "misery" by buying the up-to-date "Magnet" Cream Separator.

"Facts are chieft that winna ding, and canna be disputed."

The Petrie Mfg. Co. Ltd.

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

Thoroughbred!

It pays to buy thoroughbred cattle—and it pays to buy thoroughbred clothes—



OVERALLS, WORK SHIRTS etc of

Stifel's Indigo Cloth
Standard for over 75 years.

Are every inch thoroughbred. Firm, strongly woven cloth, that resists wear and weather. Color that lasts as long as the cloth.

You can tell the genuine STIFEL'S INDIGO by this little mark stamped on the back of the cloth inside the garment.

Look for it—and you'll never be disappointed in the wear of your working clothes—for it's the CLOTH in the garment that gives the wear.

Cloth Manufactured by

J. L. STIFEL & SONS

Indigo Dyers and Printers

WHEELING, W. VA.

- BaltimoreCoca-Cola Bldg.
- St. Louis226 Victoria Bldg.
- St. Paul238 Radcott Bldg.
- Toronto14 Manchester Bldg.
- Winnipeg466 Hammond Bldg.
- Montreal ..Roem 142, 429 St. Paul St.
- New York268-322 Church St.
- Philadelphia324 Market St.
- Boston51 Bedford St.
- Chicago223 W. Jackson Blvd.
- San FranciscoPostal Tel. Bldg.
- St. Joseph, Mo.Saxton Bank Bldg.

"Jack, Jack! Pigs, pigs!" to make every hog within hearing run for that hole in the pen.

Once, and only once, the big dog went over the fence to punish a small pig that had been uncommonly exasperating. The knowledge then and there absorbed by him lasted the rest of his life. He was willing to rest his forepaws on the fence, to look over and bark at the occupants of the pen, but when urged to go over he sulked, and said by his looks: "I tried that once, and, believe me, it was not well."

I had a big crop of corn and oats, and prices were very low. Not being in immediate need of money, I determined to breed pigs enough to eat my crop. In the course of my shooting prairie chickens, I one day strayed on horseback some thirty miles from home, and coming across a large pig pen, found in it a lot of pure razor-back sows. I thought I would like to be the owner of these razor-backs, so I returned with a couple of teams and bought twenty-two of them—long of snout, long of leg, roach-backed, long tailed, heavy in the shoulders, high in the withers, light and low in the ham.

Not to enlarge the troubles and vexations those pigs caused me before I got home, I will simply say that I lost all standing in my church from what was overhead on that journey. But I got the pigs home. My wife had raised some eighty turkeys, and countless chickens ranged around my stacks, sheds and barns. We used to select and point out with the index finger the gobblers we would eat when cold weather came. We enjoyed many turkeys that way—and it was well we ate them in anticipation, for we did not taste them any other way.

The razor-backs were turned into a large yard, containing about an acre, and the process of building up meat on their open bone-work began. The still hunt of the sows also began—turkeys and chickens the game they stalked. Though I was on the point of losing my mind, as I looked on, I could not help admiring the skill displayed. A wagon-load of corn would be scattered on the ground in the pen and the sows would slowly rise up on their haunches. Sitting in all conceivable attitudes, they would yawn, opening their long jaws much as an alligator does his when he sees a young colored person indiscreetly coming to play in the river. Then getting on their feet, they would slowly feed up and down the pen.

A turkey would hop over the fence and begin to pick up corn, and, maybe, in his exceeding comfort, spread his tail and give

voice to a cheerful gobble or two. A long, lean, wiry sow would look at him, her bright black eyes sparkling with the pleasure of anticipation. She would slowly feed toward the turkey, mild grunts issuing from her the while. She would not hurt a turkey—not she! Slowly and cautiously she would draw near to the bird, and nearer yet, until she was within three or four feet of him. Suddenly, a long, active body would be launched through the air, a snapping of great jaws, a sudden jumping on the forefeet on the body of the gobbler, a firm grip of the jaws on leg, wing or breast, a quick, powerful, upward jerk—and the gobbler that strutted in my yard was being converted into pork. I once saw a sow miss a turkey and the fowl took to wing. The sow gathered herself for a run and, jumping high in the air, snapped at the flying bird. The flying turkey was horrified to see every sow he passed over rise up in the air toward him and vainly snap her jaws at his dangling legs. The gobbler who had made an escape of this kind would spend hours in standing around, meditating on the hard times it would be for turkeys if razor-backed sows had wings. The upshot of this stalking of my fowls was that I lost all I had, and there was not a fowl left on the place.

Once I had a couple of sows, each of which raised me nine pigs. I let the little ones run out (it was a grasshopper year and they could hurt nothing). Kansas was considerably pestered with wolves that year, and my neighbors predicted that I would lose my pigs. I met them all over the neighboring country, but at sundown they were generally at home. I used to think they were lucky, until one day, while shooting prairie chickens, I saw a wolf dancing around in the grass in a very peculiar manner. I watched him from a distance, but could not comprehend his behaviour. So I walked toward him, and by taking advantage of a ravine, was able to get within forty yards of the beast.

Lying down behind a bunch of blue joint grass, I looked on. The coyote had found my eighteen pigs, then some four mouths old, and wanted one for dinner. The pigs, objecting, had formed a circle, with their heads out, and were bravely grunting defiance. The wolf was running around them, snapping his jaws and doing all in his power to frighten a faint-hearted pig out of the circle.

The compact ring of sturdy little porke slowly moved down the road, never faltering, but constantly keeping up their war grunt. As they passed me at

"MACHINES MUST TAKE THE PLACE OF MEN"

Let the "Alpha" do your work



Grind Feed
Saw Wood
Pump Water
Run Separator,
Churn or Wash-
ing Machine

AN ALPHA Engine is almost indispensable on the farm these days when labor is so hard to get. It's so reliable, too. Always on the job. Never quits. Never gets laid up. You can always depend on an "Alpha."

Thousands of Canadian engine-owners swear by the ALPHA because they have found that it is reliable at all times and under all conditions. It is sturdily built. It is simple in construction. It is powerful. It runs on either gasoline or kerosene and develops its full published horse-power on a minimum amount of either. If you want an engine that you will be thoroughly satisfied with, put your money into an ALPHA.

Ask for catalogue prices and complete information. Made in twelve sizes, 1 1/2 to 28 H.P. Each furnished in stationary, semi-portable or portable style, and with hopper or tank cooled cylinder.

THE DE LAVAL COMPANY, Ltd.

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

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



SAVE MONEY ON
Thresher Belts
Every Belt Guaranteed

Endless Canvas Drive Belts

No. 5K2—Our "Reliable" Belts are the heaviest and most durable offered. They are made of full weight 32-oz. duck. Every Belt is guaranteed. All endless belts are 3 feet shorter than stated at length on account of material required to make splice.

30 ft., 5 in.x4-ply	\$13.50	120 ft., 8 in.x4-ply	\$72.00
30 ft., 6 in.x4-ply	16.50	120 ft., 8 in.x5-ply	84.00
60 ft., 6 in.x4-ply	36.00	150 ft., 7 in.x3-ply	92.00
75 ft., 7 in.x4-ply	42.50	150 ft., 8 in.x4-ply	95.00
100 ft., 7 in.x4-ply	59.00	150 ft., 8 in.x5-ply	105.00
100 ft., 7 in.x5-ply	70.00	150 ft., 8 in.x6-ply	142.00
100 ft., 8 in.x4-ply	65.00	160 ft., 8 in.x3-ply	125.00
100 ft., 8 in.x5-ply	75.50	160 ft., 9 in.x5-ply	138.50
120 ft., 7 in.x4-ply	67.50	160 ft., 9 in.x6-ply	167.50
120 ft., 7 in.x5-ply	74.00		

Endless Rubber Drive Belts

No. 5K9—We offer this Belt to the Thresherman on its merits, as there is no better Endless Rubber Belt made. The kind of a Belt mostly sold with new threshing outfits. Our price saves you at least one-third. They are made of the best of materials and workmanship. We guarantee these Belts to give good service, and to stand up under a load as long as any Endless Rubber Threshers' Belt manufactured.

100 ft., 7 in.x4-ply	\$58.50	150 ft., 7 in.x5-ply	\$106.00
100 ft., 7 in.x5-ply	75.00	150 ft., 8 in.x4-ply	107.50
100 ft., 8 in.x4-ply	79.50	150 ft., 8 in.x5-ply	120.00
120 ft., 7 in.x3-ply	87.50	160 ft., 9 in.x5-ply	165.00
120 ft., 8 in.x5-ply	97.50		

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

WE SELL THE BEST FARM SUPPLIES DIRECT TO YOU

about twenty-five yards I rebuked the coyote with an ounce of No. 10 bird shot. He suddenly lost interest in pork and retired to the hills to hunt jack rabbits. I never had any anxiety about my pigs after that.

Once I built a pen for one hundred stock hogs by a deep pond of water. I ran the fence out into the pond to where the water was five feet deep; then I took logs, and chaining them together, stretched them between the ends of the fence. This made a pen with a big pond in it, and the pigs could not get out unless they dived under the logs. I was raised in the belief that a pig could not swim.

The hogs were driven to the pen, put in, and as I had self-feeding corn bins that were full, I flattered myself that I was rid of the personal care of those hogs until butchering time. The result was they became such expert divers that they were never in the pen. They would swim out to the log and dive under.

If I went to the pen on horseback, accompanied by my dog, I would gather them up by setting the dog on them, make them all jump into the pond, swim to the log, plunge under it, and swim ashore into their pen. There the dog dared not follow. The courage of a sow with young in her nest is something wonderful. No wild animal that walks on Kansas soil can drive her from them. She will die in her defense of her pigs, and the wolf doesn't live that can get the better of a razor-back sow. She will always eat young pigs, provided they are not her own. Her own she never eats.

The pigs of any other sow she considers legitimate food, and she will eat them up to the time that they are three weeks old; and any other sow in turn will eat her pigs. So there is not much friendship in a yard during breeding time. The sows regard each other with an evil eye.

Disgust, doubt, uncertainty, reign everywhere until the pigs are quick and active. Then the friendly family relations are resumed. It is strange, but I have never seen a boar eat young pigs, and I have had all kinds—from the blooded "wind-splitters" to the pure Berkshires—and I never had a pig eaten by one of them.

Have not pigs intelligence? Attend. One morning I walked up to the outside of my vast hog pen. A sow that had always been rather wild came up to the inside of the fence opposite to me. I looked carefully at her and walked along the outside. She followed me on the inside, and walking with me, began a peculiar grunting. It struck my ear as a grumbling grunt. I stopped and

looked carefully at her. I could see nothing wrong with her, yet she stood near me, talking to me in appealing grunts. Jumping over the fence, I walked across the yard to where I had some breeding pens.

The sow followed close, constantly grunting, until, getting impatient of her sudden affection, I drove her away. She stood off some twenty feet, and suddenly began to build a nest, scraping up the dirt with her feet and pushing it into a pile with her nose. Then she stopped and looked at me. Understanding madam now, I walked to the gate. She followed. I opened the gate, and out she walked and went at once to the creek, built her house, and in two weeks she was home again with seven pigs. I know of no other animal that would have been able to thus reason and tell her wants to man.

As to cleanliness: Pigs will be unclean when they are compelled to; but give them a pen with a stream of water running through it, and they will keep clean. When they drink, they will even go to the upper fence and drink the perfectly pure water as it enters the pen.

I say that the pig is the cleanest, the most intelligent, and the most courageous of animals. But should these proofs be deemed insufficient, I can give more.

Allies Lack Meat

The Allies' livestock has been decreased to such an extent as to mean 27.7 per cent of home resources in meat. The percentages for the different countries range as follows: England, 12.5; Belgium, 82.0; France, 21.4; Italy, 17.8; Germany, 36.3; European neutral countries, 0.9.

400,000,000 People Lack Food

It is estimated that 400,000,000 people in Europe are short of food. In Poland, Finland, Serbia, Armenia and Russia, millions are actually dying of starvation and other millions are suffering from under nutrition, while still others are living on the barest possible margin.

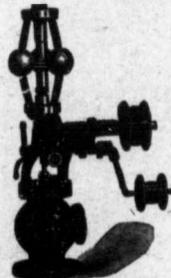
Licenses Now Operative

The Canada Food Board licenses are now operative in the following classes of dealers in food-stuffs in Canada: Grocers (wholesale and retail), bakers (manufacturing and retail), manufacturers of breakfast foods and cereals, retail butchers, fish dealers (wholesale and retail), flour and feed dealers (wholesale and retail), produce dealers (wholesale and retail), canners, packers, manufacturing confectioners, proprietors of public eating places.

WHETHER you burn kerosene or gasoline in your tractor, there is considerable advantage in using a *uniform* fuel right through the season. In buying SILVER STAR KEROSENE, ROYAL-LITE GOAL OIL or PREMIER GASOLINE, you are assured of this feature because every tank car shipment must meet the same definite standards before leaving our refineries. That is part of "Imperial Service" as is the convenient location of our 500 prairie tank stations. One of the 500 is probably near you. IMPERIAL OIL LIMITED, Branches Throughout Canada.

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A Soil Fertility Inventory Pays

It is a Basis for the Judicious Use of Manure and Fertilizer

By C. A. LeCLAIR, Wisconsin

JUST as the sire constitutes half of the herd in successful live stock production, likewise I believe does the reserve fertility of land determine the possibilities of a farm enterprise. If it is deemed wise to judge a bull's value by the performance of his daughters, isn't it just as sensible to measure the worth of land on the basis of what it can produce. Of course, in the case of virgin soil such a measurement is not possible, but there are other ways of estimating its productive power. Among the best of these is to have an analysis made of the total plant food contained in the plowed layer.

Only because it was impossible to make the necessary arrangements sufficiently in advance, I bought a farm in Outagamie county, Wisconsin, upon which many years of my life will probably be spent, without knowing exactly how much plant food the soil contained. Naturally, there were certain essential features which appealed to me when purchasing the place, but at the same time there was a realization on my part that there is a great deal hidden in the surface layer of soil which no human eye can see. Nevertheless, this did not deter me when making the selection from utilization to the utmost of my knowledge of what constitutes productive and easily farmed land. I picked a fairly level to gently rolling farm, overlooking the presence of a few stones in view of the fact that the surrounding country where these were not present seemed to be thinner land. The plowed layer was of a chocolate brown color reflecting no superabundance of humus or vegetable matter and nitrogen, the most costly of all soil constituents. However, appreciating that one can rarely find his ideal in any given piece of land this feature was discounted because of the fine texture of the soil and the even finer subsoil which indicated a goodly supply of potash, lime, and phosphorous as well.

Although I had had a close acquaintance with soil all my life and had made a particular study of it during the last ten years, it nevertheless seemed advisable to have the soil of my farm analyzed in preference to going blindly into system of hit or miss cropping. Hence, about the second thing I did after selecting the farm was to make application to the State Agricultural Experi-

ment Station for its aid in enabling me to take stock of my soil fertility assets. Thanks to a thoughtful legislature, the Wisconsin Agricultural Experiment Station was prepared to give exactly the service desired. In fact, since 1913 the State's Soil Laboratory has given aid to hundreds of farmers of the state.

Soil Examination and Test

Like a storage battery, surface soil contains certain quantities of the food essentials to plant growth which from time to time become available. This being the case I could see the advantage of knowing the strength of my crop producing battery—the plowed layer of the soil of the farm. To be sure I might have gone farming as some do without this knowledge, but with the chemical plant food elements worth what they are to-day it seemed that this procedure would undoubtedly lead to a needless waste of energy and money. Furthermore, after studying the results of soil treatments made at various agricultural experiment stations in the United States and abroad, I came face to face with the realization that it not infrequently takes five to fifty or more years for even experts to determine what combination of fertilizers certain lands require to make them most productive. Any short cut to this end therefore appealed to me greatly. In this connection let me say that I am not among those who think that by sending a pill box full of dirt to a chemist he will be able to analyze it and tell just what the soil will best grow and the size of the crops for the next decade. I do believe, however, that a soil expert, who not only observes closely the lay of the land and the vegetation but also takes a representative sample of soil and analyzes it, is in a position to at least give a farmer a start in the right direction with regard to the management of his farm.

It is just this sort of service that the Wisconsin Agricultural Experimental Station rendered me. Almost immediately after making application for assistance, a soil specialist visited my farm. He came equipped with an auger for taking soil samples and bags to put them in. Frankly, this man told me more about my land after a glance over the various forties than I could have found out by farming them several years perhaps. Through his knowledge of the lay of the

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country he was able to advise authoritatively about the defects of certain spots even before he approached them for more careful examination. Let me also say that although he wore a linen collar he was not the least bit afraid of dirt. Though it was in the early spring when the samples were taken, the expert was not for a moment reluctant about plunging his auger to the hilt in the oozy clay of the swails in order to give me an idea of the drainage possibilities.

To be sure, I received a preliminary report concerning the land but, as I expected, no definite recommendations were made at the time of the initial survey. It was gratifying to learn at the outset, however, that my farm consisted largely of what I had previously picked to be a sandy to silt loam type of soil underlain by red clay. To anyone who knows what comprises a good soil this combination would be considered fine for the maintenance of good tilth. Sandy loam soils can usually be worked almost immediately after a rain and they are exceptionally responsive to good treatment. Furthermore, such land is what is termed a warm soil. It has a wide adaptation to different crops and with the heavy subsoil below there is little tendency toward either a leachy or droughty condition in extreme seasons. Again, the expert verified my conclusion that the soil of the farm was not all the same. He explained how some of the low wet spots, where the clay came to the surface could be drained by simply clearing away the brush and windfalls which impeded the evaporation and drainage of the surface water. It is not necessary to say that these suggestions were made use of to great advantage.

The Soil Doctor's Report

In less than six months from the date upon which the sample of soil was taken and the land examined, I received the following detailed report and final recommendations from the state soil expert:

Analysis of Composite Soil Sample		
	Per cent of the acre	Pounds of plant food
Nitrogen091	1820
Phosphorous069	1380
Potash	2.560	51200

"This soil is not acid and will not need lime for the present.

"The weight per acre eight inches in computing the number of pounds of plant food is taken as 2,000,000 pounds.

Phosphorous

"While there is no arbitrary standard as to the percentage of phosphorous necessary in a soil, yet experience in this state shows that if a soil has .09 of 1 per cent of phosphorous or over, it is a very good producing soil. There-

fore I would say that this soil will not produce a maximum crop after cropping for three or four years without the application of phosphatic fertilizer. In a virgin soil of this kind there is usually a large amount of available phosphorous which can be utilized at the start by crops, therefore an immediate application has not been recommended.

Nitrogen

"The nitrogen is not as high as it ought to be for a high producing soil. By growing-legume crops in rotation, it can however be maintained and increased. I have no doubt that after the first crop or two has been harvested, nitrogen fertilizers can be used profitably. This may be supplied in the form of manure or commercial fertilizer.

"The potash content is exceptionally high. Thorough cultivation will make this available for plant use.

"This soil is not acid and no lime will be needed."

Fertility Assets

It is my belief that the day is at hand when in holding a deed to a piece of land a man ought to know what it represents in the way of reserve fertility. From now on, consumers are going to pay for farm produce not only what it is worth to raise it in terms of labor and interest costs, but they are also going to compensate the grower for the plant food he sells. Hence, progressive farmers must have an idea of their soil fertility bank account and endeavor to maintain or increase the working principal. Yes, with this in mind it did not require an extended knowledge of bookkeeping to enable me to strike a balance on my ledger. Contrasting the amount of plant food which the analysis showed my land contained with that which a very productive soil is known to have, it was easy to see the weak spots. The following figures show the facts of the case very clearly.

	Pounds of Plant Food in Plowed Layer of Soil		
	Essential constituents	Very fertile soil	My farm or surplus
Nitrogen	6,000	1,820	-4,180
Phosphorous	2,000	1,380	-620
Potassium	35,000	42,484	+7,484
Lime	Plenty	Plenty	+-----

These figures told me that although I was beginning to farm virgin land freshly cleared from the brush, the soil had marked deficiencies which would have to be corrected before maximum crops could be grown. In the first place, the reserve fertility bank account upon which I would have to depend for my annual interest of available plant food that Nature would unlock for the growing crops was only about a third of what it ought to be in the case of nitrogen. The bigger

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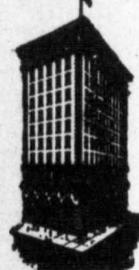
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the lump of sugar the greater its sweetening power. So with the supply of essential elements in the soil. For example, the greater its supply of total nitrogen the more of this necessary element can the beneficial soil bacteria and solvent soil water unlock for the use of growing crops, I figured. There was likewise a deficiency of phosphorous to the extent of 620 pounds as compared with very fertile land, but I was fortunate in having a good supply of potassium and lime.

Permanent Soil Enrichment

In spite of the fact that the soil expert pointed out that my land would undoubtedly supply a great deal of available phosphorous to the first crops grown, I decided at the outset to play safe by increasing its content of this element in the plowed layer of the farm. Realizing that the manure which could be applied to the land from time to time would return to the soil only the phosphorous that crops took from the land, it seemed wise to purchase additional plant food. The small amount of phosphorous brought to the farm through the purchase of concentrated feeds would at best only make up for the amount of this element sold from the farm in crops or other produce. I therefore decided to apply some commercial fertilizer containing this ingredient. In my rotation of potatoes or corn the first year, oats or rye the second year, and clover and timothy the third year, it seemed best to use the artificial manure in growing the cultivated crops both of which respond readily to such treatment. For these crops an application of 1,000 lbs. of a fertilizer containing two per cent of nitrogen and ten per cent of phosphoric acid to the acre enables me to add 100 lbs. of phosphoric acid to the acre each round of the three-year-rotation. The 20 lbs. of available nitrogen also supplied by the fertilizer comes into play in the early spring before the land is suffi-

ciently warmed up for the beneficial nitrate forming bacteria to supply the young plants with enough of this food element. In the case of the potatoes the fertilizer is applied in the furrow where it appears to give best results. With corn the major part of the plant food is distributed broadcast and worked into the land as the seed bed is prepared and a light application not exceeding one hundred pounds to the acre is dropped with a fertilizer attachment of the planter in the hill. Both of these crops respond so well to this treatment that in fair seasons the increase in yield obtained more than pays for the cost of the application to say nothing of the benefits which the other crops of the rotation invariably show. The barnyard manure which is available is used as a topdressing for the clover and grass.

The growth of larger crops which the use of fertilizer makes possible is bound to provide a greater mass of plant roots and stubble to be turned under than would otherwise be the case. This tends to increase the vegetable matter in the soil. I shall also make every effort to pasture either the first or second crop of clover and grass when that crop occupies the ground. In these ways the reserve supply of nitrogen will be gradually increased.

Already I have had opportunity to see this plan bear fruit. It cost me \$5.00 to have the farm inspected and the soil tested. At one hundred times this cost I would consider the service rendered worth the price. I have been saved the cost and trouble of using certain materials which my land did not need and it is now possible for me to use fertilizer containing nitrogen and phosphorous in addition to manure with confidence and maximum effect. My main job now is to learn in what amounts and how best these materials can be applied.



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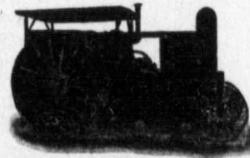
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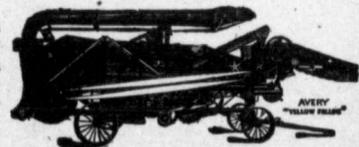
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THE STORAGE OF MANURE

By Professor E. B. Hart,
Wisconsin College of Agriculture

AFTER the use of ample litter and absorption of the liquid part of the animal's excreta, manure is never so valuable as when perfectly fresh, for it is impossible under the best system of storage to prevent all loss of fertilizing ingredients. For this reason, whenever possible, the manure should be hauled directly to the field and spread. The system saves time and labor, as it involves handling but once. The manure will be leached by the rain and snow, nevertheless the soluble portion will be carried into the soil, where it is needed. When spread in a thin layer, it will not heat, so there will be no loss from hot fermentation, and where manure simply dries out when spread on the ground there is no loss of valuable constituents.

Storing Manure in Sheds

When it is impossible to remove the manure directly to the field, due to hilly land, weather conditions, or lack of available fields, it must be properly stored, and the two injurious processes to manure conservation, leaching and hot fermentation, must be prevented. Leaching may be prevented in two ways: either by providing water tight receptacles so that the liquid cannot run away, or by keeping the manure under cover to protect it from the rain. The first method is in general use in Europe, where pits or cisterns of cement or other impervious material are built, in which the manure is stored. Sometimes a pump is provided whereby the liquid portion is again pumped over the more solid portion, keeping it moist and furthering decay with minimum loss. This makes good manure, but requires time and labor to prepare it. The shed alone, however, is no insurance against loss. Manure, carelessly dumped into the shed prevents leaching, but not hot fermentation with its consequent losses of nitrogen. The simple precaution of packing the manure solidly will do much to check this destructive fermentation. If the hogs and cattle have access to the shed the pile will be made more firm. Keeping the manure heap compact and moist is the real problem of the covered shed, but without ready access to water the covered shed is a doubtful help in storing manure.

Storing Manure in a Pile Out of Doors

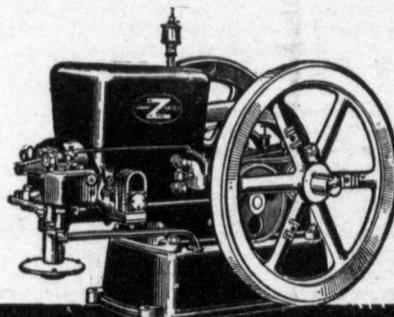
Where neither cement cistern nor covered shed is available and it becomes absolutely necessary to store the manure, the pile or

rick should be carefully built. It should be made so high and compact that the hardest rain will not soak through. The sides should be perpendicular and the top dipped toward the center. It is advantageous to have the manure saturated with water, but large losses of plant food would result should the water drain away from the heap. Hot fermentation can be controlled by keeping the pile moist and compact. These two conditions exclude the air from the pile and prevent the action of those bacteria which cause hot fermentation, but require free air for their activity. Each daily addition of manure to the pile should be firmly packed into place. This allows decomposition to continue and greatly improves the mechanical condition of the manure. When it becomes necessary to allow the winter accumulated pile to stand for some time, cover it with an inch or two of dirt. This helps prevent the escape of any nitrogen that may be formed.

It may be impossible to construct an exposed pile which, in long periods of excessive rainfall, will not be subject to leaching. A depression lined with puddled clay will hold much of the liquid, but a pit of concrete is the only certain insurance against the escape of this surplus water. If the manure is to be stored the entire season and spread in the spring the pit should be designed accordingly. An ordinary cow will produce with litter about 2,300 pounds of manure in a month. A herd of ten cows stabled six months will produce about 70 tons of manure. A pile 18 feet long, 12 feet wide, and 9 feet high, allowing one ton per cubic yard, will contain approximately this amount. A pit 18 x 12 feet, sunk 2 feet in the ground with the walls 2 feet above the ground, would serve admirably as a receptacle for a pile of the above dimensions. The pit should be built so that loading can be done from either side.

Is the Cement Pit Necessary?

Where it is possible to haul the manure most of the time in the winter with only occasional periods of necessary storage, the cement pit is not necessary. Building the pile directly on the ground, or to meet possible emergencies, better on a foundation of puddled clay, will answer the purpose fully. As a matter of fact the cement pit is likely to lead to careless handling of manure. Carelessly dumping the manure into the cement pit without compacting the manure certainly leads to large losses of nitrogen by fermentation. If one builds a cement pit the manure should also be compacted in it.



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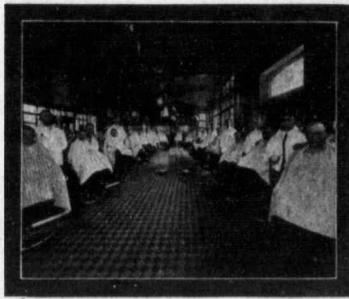
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From Chilton Tractor Journal

UNTIL a year or two ago the success of the tractor as a standard machine used on the farm, was very much doubted by the superficial observer. There was too little contact between the banker-economist, the manufacturer and the farmer, so that lacking thorough knowledge of each other's requirements and possibilities in that direction, a getting together of these people for tractor development has not occurred. The war, of course, has done very much toward developing and popularizing the tractor, but it has only accelerated the process, which in the minds of a few observers, would have come anyway, five or ten years later.

It cannot easily be realized how the war will further influence the

tractor development if it lasts a greater number of years. It is not impossible that in such a case, with the continually increasing drain of man and animal power from the fields, we might see the Government taking over the control of the farms and developing a quantity of mass farming business, which is, without doubt, more man and time saving, and therefore more efficient than the small or community farming proposition. With the increase in the farm units we might see the large 60 and 80 h.p. tractors revive; but this condition would end with the close of the war and the question now is to anticipate the tractor development after the war and to estimate the popular size of tractor, relying upon its past performance.

In the early years of the tractor development the machine of less than 50 h.p. was unknown, but the last years have seen the development of ever decreasing sizes, with the larger sizes slowly disappearing, until now, after having reached practically the smallest possible sizes, of two-plow tractor or with from 6 to 8 h.p. on the drawbar, the natural question that arises is, what next?

Reasons for Early Large Tractor
Let us analyze the causes that have determined this development in the past:

The heavy, powerful machine was received as a deliverer by the owners of large tracts of virgin land, west of the Mississippi. That land was too heavy to break up with the limited number of animals in the field, and the big tractor satisfied a real demand and has done a great deal toward developing the northwestern states. On the other hand, the success of these 10-ton tractors for 6-in. plowing, on lands that had already been plowed before and were not so hard, was rather limited.

The labor expense was also in favor of the large tractor, two men could handle the plow and tractor with ease whether it was a 10-bottom or a 4-bottom tractor and much easier than an equal or even a much less powerful outfit of horses and plows. The hiring and keeping of an expert engineer (for, indeed, it required an expert), for every single tractor, naturally induced the farmer under any conditions to buy a larger one in preference to two or three small tractors.

But these conditions have changed now; self-lift plows have been developed that can easily be handled by the same man who drives the tractor, and so far, the man handling the plows can be spared. Indeed, there are now in the field many one-man outfits

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Don't Feed Gophers All Fall. Kill 'Em Now. Use **KILL-EM-QUICK**

pulling up to four or five plows. The larger ones need two men anyway, for if the tractor would have to be stopped every time one of the eight or ten plows gets clogged by stubble and weed (so as to enable the driver to clean the bottoms) more time would be lost than actually used up. Furthermore, the recent development has made the tractors so fool-proof that many of the machines on the market do not need a man familiar with machinery.

Some of these machines are so inaccessible that adjustments cannot be made even when necessary. When the big tractors came out and even years later, they were still in the experimental stage, and the manufacturer was well aware of the risks the farmer was running in buying them; he figured, in a very business-like way, that the owner of large tracts of land could venture \$3,000 on a pitch-and-toss proposition easier than the smaller farmer can venture \$1,000. The manufacturer hardly expected anybody to buy two tractors, neither together nor as repeat orders.

And then, experimenting is very expensive, whether the tractor be small or large, and with the demand for tractors during that initial stage naturally limited, it was good policy to figure the machine high-priced, which, to make it attractive to the buyer, had to be high-powered.

And the last, but not the least, reason why American manufacturers have started with the large tractors (which was not the case with European manufacturers) lies in the fact that any American enterprise will always be started from the big end.

These were the conditions during the first years. The number of large estates that could use these big tractors was at best limited, and even if the machine was perfect its cost would have to be high; the tractor manufacturer understood that the smaller the tractor size the greater the chance for developing a quantity production, and on the other hand, the owner of the big tractor resented the fact that the large machine was unreliable, as it was usually out of commission just when needed most, with nothing to do the pressing work if he had sold his horses and rather expensive if he was to keep them as reserve power.

Outside of that the big tractor cannot adapt itself economically to small power tasks; a tractor with a string of five or six harvesting machines hitched on one side of it is a picturesque sight, but it is clumsy to steer (and especially to turn) and not man saving at all. In an ordinary field (except sugar beet or cane plantation) the tractor very seldom has

the chance to haul a full load of wagons for greater distance, and the slow speed (the only one appropriate to such a heavy machine over rough roads, most of these machines, besides, not being spring-mounted), also the difficulty of steering around sharp corners and the investment in a greater number of wagons to be used so seldom, restricted much its field of action. It is true, there is hardly any machine better adapted to build roads than the big tractors were, but this is not the farmer's line of business, at least it is not sure and steady enough to induce him to invest his money in it.

And finally the big, heavy tractor was entirely unadapted for plowing on hills, etc., for it lost most of its power in carrying itself uphill, and on flat lands, with trees, shrubs or other obstacles, much time is lost in going around these obstacles which cannot be crossed.

Small Tractor and Its Reasons

During the summer of 1914, the smaller tractors of the 5 and 6-plow types started to become popular and in less than two years any size down to 2 and 3-plow tractors was on the market, there being a large number of manufacturers entering the field, all of them manufacturing these very small sizes. The reason for this quick development of the smaller size was not primarily a thorough knowledge of farm economics, but rather reasons originating from the manufacturers' end.

The initial cost required for starting the manufacture of small tractors as compared to tractors of a large size is very limited. A great many of the parts could be bought from automobile and truck parts manufacturers, for instance: motors, gears, radiators, fans, wheels, etc., while the manufacturer who wants to start the business with a 45 or 60 h.p. motor has to build it himself; the number of gear manufacturers for large pitch gears is also limited, and radiators, even if bought outside have to be made to order, etc.

This, besides greatly reducing the capital invested in the manufacture of a small size tractor, also reduced the expense and worry of experimenting from the beginning with too many designed parts. Not only did this fact automatically reduce the risk of making the new tractor a failure from an engineering standpoint, but it also reduced the risk of the whole venture as a business proposition, for the chances of placing the good or poor tractor into the hands of some farmer, with over 100 acres of land are about three and one-half million fold in the United States, and even if the machine cannot be placed at all, the

Special Prices on Thresher Belts

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Length in feet.	Width in inches.	Ply.	
120	x 7	x 4	\$69.20
120	x 8	x 4	79.10
150	x 8	x 4	98.90
100	x 8	x 5	79.70
120	x 7	x 5	88.70
120	x 8	x 5	98.10
150	x 7	x 5	107.15
150	x 8	x 5	121.70

RED CANVAS ENDLESS BELTING

100	x 7	x 5	61.00
120	x 7	x 5	73.15
120	x 8	x 5	83.15
150	x 7	x 5	91.45
150	x 8	x 5	103.95
150	x 8	x 6	126.00
160	x 8	x 6	134.40

GREEN CANVAS ENDLESS BELTING

100	x 8	x 5	55.46
120	x 7	x 5	58.52
150	x 7	x 5	66.52
120	x 8	x 5	66.55
150	x 8	x 6	100.00

As there are very few of each size in these lots, quick action is necessary to avoid disappointment.

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FOR SALE CHEAP—10-20 h.p. Case gas engine with Grand De Tour plow, 3 stubble and 3 breaker bottoms with extra shares. In good condition. Snap at \$1,200, complete. H. Stainforth, Aldersyde, Alta.

FOR SALE—Small threshing outfit, complete, in good running order. Sykes, Russell, Man.

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loss is not considerable. To what an extent the small amount of capital required for starting the manufacture of a small tractor was a lure to manufacturers, can be seen from the fact that in spite of all these mentioned advantages, there was a greater proportion of business failures among the beginners in the small tractor field than there had been a couple of years before, among those manufacturing the big tractor.

There are, however, two very important causes that have influenced the more conservative investor in favor of the very small size tractor. First, provided this small tractor is economical, it can be used on any farm of more than 100 acres, and since there are today somewhat like 3,500,000 farms above 100 acres in the United States, the chances for the manufacturer to develop a mass production are very attractive indeed.

On the other hand, if this small machine can be used for cultivating, and the other small power tasks in the field, i.e., if its field of activity is increased to, say 120 days per year, instead of 60, then its cost in the end will be so much lower.

Defects of Small Tractor

This argument of the manufacturer in the city was, however, failing in a few points. The little machine will do all the light work all right, but it will not be strong enough to do the heavier work of plowing, or it will do it too slowly, and the farmer knows how much there is to be gained by plowing his entire field early. Still more is to be gained by deeper plowing; while only one year ago the average plowing in Illinois, Michigan, etc., was only 6 in. deep, many farmers have gone now as deep as 8 in. What was said above in regard to early and deep plowing applies fully to wheat, oats, etc., while for corn and vegetables, cultivating of the land also increases the crops. The tractor with not more than 8 to 10

h.p. on the drawbar, has proved insufficient to tackle the heavy work in the field, or to plow in harder soils or on side hills; it has no reserve power for any of these emergencies.

For the sake of stability (on side hills, etc.) a tractor cannot be made narrower than about 4 ft. Where it pulls two plows and both tractor wheels (or tracks) run on the unplowed ground, the plows have to be hitched on one side of the machine. This causes side draft, which, in order to keep the machine running straight ahead, must be compensated by another force, artificially brought into the system, which, will, however, reduce the available power of the outfit. By running one tractor wheel in the furrow, conditions are not improved; while the side draft is eliminated, the tractor runs on an incline all the time (the deeper the furrow, the greater the incline) and the subsoil of the furrow is compressed by the weight of the machine.

Finally, plowing two furrows instead of four (for instance), it will take twice as long to plow a certain size field, i.e., the expense for the operator will be twice as high as it would be if the tractor were pulling four bottoms.

Four-Plow Size More Economical

It has been figured (Journal of the Society of Automotive Engineers of April, 1918), that taking plowing alone into consideration, the total cost for plowing one acre of average land, i.e., for fuel, operator, depreciation, interest and repairs, is lower with a four-plow tractor than with the two-plow tractor, for any field larger than 180 plowed acres per year, on the assumption that a two-plow tractor would cost \$600 and the four-plow tractor \$1500. Now this assumption is forced to the disadvantage of the four-plow tractor and on the basis of equal output of the tractor factory a proportion of 800:1200 in the sales price of the tractor is more correct



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are made from this material. They give at minimum cost a three-ply roof of impervious cedar which provides permanent protection and guarantees perfect satisfaction.

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FARMING is one of Canada's biggest consumers of man-power; every farmer knows there is a shortage of man-power. Therefore every one must increase his efforts; he must do *more* work in *less* time.

A very large percentage of Overland cars are bought by farmers. They realize Model 90's value in multiplying their usefulness, saving their time, energy and increasing their efficiency.

Let an Overland perform innumerable work duties for you and in addition be an endless source of recreation and benefit for *every* member of the family.

Select this Model 90 and you save money in the first cost and maintenance.

Its price is unusually low considering its quality, its room, beauty, comfort and efficiency.

Back of it is a real Canadian institution forunately prepared to care for all

service and parts requirements now and later.

It has a powerful, fuel-saving motor; narrow turning radius; rear cantilever springs; 106" wheel base; 31x4 tires, non-skid rear, electric Auto-Lite starting and lighting and vacuum fuel system.

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than that of 600:1500. This makes the four-plow tractor more economical than the two-plow tractor, in any field larger than 75 plowed acres per year (8 in. deep), or 90 plowed acres per year (6 in. deep).

That under these conditions, the chances for quantity manufacture of a four-plow tractor are unlimited can be easily understood.

That it will do all the belt work on the farm just as economically as a two-plow machine, and will easily take care of the threshing which is too heavy work for the smaller one, is plain.

Such a tractor will do the light work on the farm, only at a trifle higher expense than the cultivator or two-plow tractor and there is little doubt but that, where there is much land to be cultivated, and often the farmer will find it advisable to do this light work with a few horses which he will not care to sell all, for a while, anyway, or, buy a low-powered, inexpensive cultivator in addition to the four-plow tractor.

Where the chances of the two-plow tractor manufacturer are nil, as compared to those of his bigger brother, are in the farms of more than 200 plowed acres. The automobile or truck manufacturer in Michigan who plans to enter the tractor field and gathers his information as regards size of machine from the farmers of his state only, will not fare well. The average farm in Michigan was in 1910, according to the statistics of the Department of Agriculture, 92 acres; the average farm is smaller in the following states of the country, only: Connecticut, Massachusetts, Rhode Island, New Jersey, Pennsylvania, Ohio and seven southern states. He should not forget that the average size farm is larger than 200 acres in Kansas, Nebraska, Texas, North Dakota, South Dakota, California, Colorado, Montana, Nevada, New Mexico, Oklahoma, Washington and Wyoming. The farms of over 175 acres each amounted in 1910 to more than 500,000,000 acres of land, and while the total farm area was 878,000,000 acres, there were still more than 400,000,000 acres of arable land which had not been touched yet. This was not due to the soil not being first class productive farm land, but mainly because with the lacking railroads, and other means of transportation, and with the low prices the farmer got for his products (which also belong to the past), his efforts increased and his returns diminished as soon as he farmed beyond a certain distance from the railroad.

The increase in the production of the country during the years to come will be due mainly to the developing of this new land, and

not, as some wise people believe, to the splitting up of the farms already under cultivation — the average size farm in the U.S. in 1890 was 136.5 acres and in 1910 it increased to 138 acres and the advent of the tractor like any other high power, time and man-saving device, will further tend to increase the average size of farm.

On all farms larger than 200 acres, one or two two-plow machines are by far too slow and expensive in the end, however low their purchasing price might be, while one or two four-plow tractors compete successfully with even as large a unit as an eight-plow tractor, due to the following reasons:

1. The purchasing price per drawbar h.p. is lower due to the quantity production of the four-plow tractor and the limited field of the big one, which will never allow of quantity production methods.

2. Greater adaptability to small power tasks.

3. Trees, rocks and other obstacles can easily be avoided, and without leaving unplowed spots, since the total width of plowing is about equal to total width of tractor.

4. There is a great chance for one four-plow tractor to meet the schedule of work if the second outfit is out of order, by running the tractor at night with the other operator, but if there is only one big machine and this broken, the work will remain undone.

5. As previously stated, the large outfit runs with two men, while two four-plow tractors run with one man each, hence it is neither one of the running expenses (operator, fuel, oil, etc.), that would tend to offset the decided advantages of the four-plow tractor as compared to the eight-plow outfit.

MANIFEST SHIPMENT OF GAME BIRDS

Sportsmen, hunters, and others making shipments of game within the province shall make a manifest placing it on the outside of each bag of game, showing exactly the number and kind of birds offered for shipment, together with the number of license on which the game was shot. This is in accordance with subsection (6) of section 13 of the "Game Act."

The season for hunting wild ducks and geese opens on Monday, the 16th day of September, and closes on the 30th day of November.

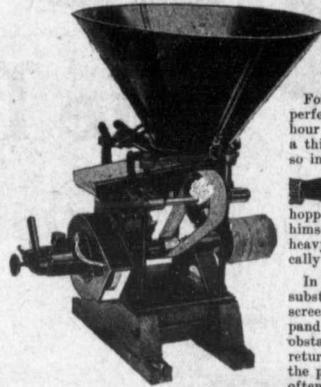
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Teacher—"Name the five zones."

Pupil—"Temperate, intemperate, war, postal, and o."

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FEED GRINDER**

is the product of the brains and life-long experience of three experts in the one line of grain grinding machinery. It is something entirely apart from anything else made for this purpose and is called

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For rapid, steady, and absolutely perfect work, its 50 bushels an hour capacity is astonishing from a thing so small, so compact, and so inexpensive.

It is so low built the merest boy can fill the hopper without unduly exerting himself, and on its solid, square, heavy wood base, there is practically no vibration.

In case of nails or other hard substance passing through the screen, heavy release springs expand the disc plates, throw out the obstacle, and the plates instantly return. This is so rapidly effected the plates cannot be choked, as so often happens with any other design of grinder.

Made in three sizes: 6, 7, 8 and 10-inch plates, and the hopper takes from 3 to 4 bushels, according to size of machine. An 8-inch size operating at 2,200 revolutions per minute, will deliver 50 bushels of finely ground feed per hour.

YOU CANNOT BUY BETTER VALUE—YOU CANNOT BUY A BETTER MACHINE AT ANY PRICE—YOU CANNOT MATCH IT FOR DEPENDABILITY, DURABILITY AND CAPACITY WITH LESS THAN THE SMALL POWER NECESSARY TO DRIVE IT. QUALITY OF MATERIAL AND WORKMANSHIP UNEXCELLED.

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Skillfully made from highest grade materials—especially durable for long wear. Well fitting, comfortable and convenient. Ask your dealer to let you try on a suit—see the guarantee in hip pocket.

Guaranteed by your Dealer and the Manufacturers

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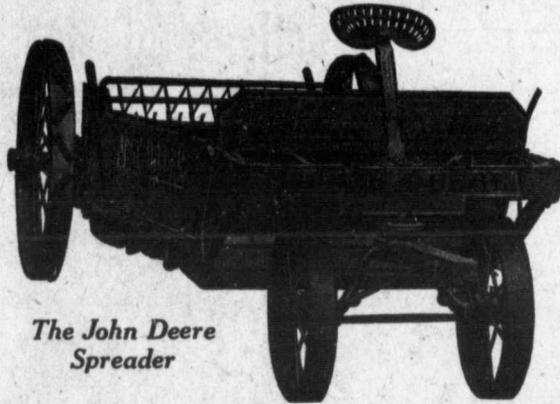
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Barn Manure ^{the very best} **Fertilizer**
when properly spread on the
ground. You can do it comfortably
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Do you realize that a load of manure left in
the yard exposed to the weather six months
loses in value of plant food from 47
to 76 per cent.

Only Hip High
From the ground to top of box is
only thirty-eight (38) inches.
You have only to lift the manure
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POULTRY DISEASES RESPONSIBLE FOR BIG NATIONAL LOSS

AT least fifty per cent of the chickens, young ducks and turkeys, and ten per cent of the adult birds, die each year from diseases, many of which are preventable. This is an annual national loss of probably millions of dollars that should be avoided to a large extent.

War conditions make it imperative that farmers and poultrymen as far as possible should stop this enormous leak. To do this every breeder should pay strict attention to the general conditions of his flock. When anything unusual is noted in a fowl, it is advisable to place the affected individual in separate quarters. If within a short time recovery does not take place, it is unwise to destroy the fowl without first ascertaining the cause of the disorder. The prevalence of disease is more often the cause of failure than the lack of practical knowledge and the extreme importance of keeping the quarters clean; isolation of all ailing fowls and immediate action in regard to finding out the cause cannot be too strongly impressed upon the poultryman.

When trouble occurs, forward to the Biological Laboratory, Central Experimental Farm, Ot-

tawa, Ont., a live but sick fowl, or, in the absence of such, a dead bird. In the interval disinfect the quarters, runs, drinking fountains and feed dishes to check the spread of any infectious disease.

Disinfect the poultry houses by spraying the interior with a lime-wash solution (50 lbs. stone lime slaked in a barrel of water plus one gallon of a good commercial disinfectant). Fill cracks and crevices to destroy mites, lice, etc. If a smaller amount is required it may be prepared by adding two and half pounds of lime to a pail of water plus by half a teacupful of disinfectant.

Keep a crop growing in some part of the yards and alternate poultry and crops. If the runs are small cover with a coating of air-slaked lime and dig up. If the runs are too large to dig, plow and cultivate before sowing. Rape is a good crop for this purpose. Rear all chicks on fresh soil.

Although these precautions may appear unnecessary it is the only way of combatting many disease conditions affecting poultry, which if left to themselves will undoubtedly prove decidedly costly in the long run.

THE REPATRIATION PROBLEM

**First Steps to Analyse Situation
Taken by New Re-establishment
Department**

MANY articles have been written and speeches made throughout not only Canada, but other countries upon the subject of the repatriation of the armies after the war. Realizing that any theories that may be advanced at this stage would not be based upon essential facts, the Department of Soldiers' Civil Re-establishment, within whose scope the civilian preparations for absorption of Canada's soldiers after the war will come, has taken steps to ascertain certain details about the problem in order that effective methods of meeting it may be devised.

The National Service Council during its tenure of office took a census of the soldiers with a view to ascertaining their occupations and their future ambitions, especially in reference to any desire they might have to undertake farm production work. This information is on cards, one card being devoted to each soldier. There are 200,000 of these cards and they are in the possession of the Department of Soldiers' Civil Re-establishment, which is analy-

sing them with a view to preparing statistical information.

Certain fundamental facts can be obtained from these cards. The Department's statistician will ascertain:

- (a) How many men wish to go on the land.
- (b) In what province they wish to settle.
- (c) How many men can go back to positions which are being held open for them.
- (d) How many men have trades or profession.
- (e) How many men there are in each trade or profession.
- (f) How many wish to go to provinces other than the one from which they enlisted.
- (g) How many men wish to go to each province.
- (h) How many men under the various trade headings wish to go to each province.
- (i) How many men have family ties which would appear to prevent them from changing their domicile, if it were found that too many of one occupation wished to settle in any one locality.
- (j) How many men were young and single, and, therefore, able to settle in another province if there were better openings for them there.

These are only some of the facts which the cards will yield.

Although the most modern statistical analysis machines are being employed at this work many months will be required to analyse and segregate the various classes of information obtained.

THE KEROSENE FUEL PROBLEM

(Continued from Page 10).

the regular fuel tank. As soon as the can is located, take it off, punch a hole through the bottom, insert the copper tube about one inch and solder well in position. Next cut a piece out of the regular fuel tube on the tractor, so that a valve can be soldered in on the piece that goes to the tank and then the tee fitting. After this is all tight, then solder a short piece of tube into the branch outlet of the tee and solder to the other end, the second pet cock and then solder the end of the tube from the half gallon can to this. Place the can in the location previously found, and now all is ready for the test.

Shut off both pet cocks and put three or four gallons of kerosene in the fuel tank and about half a gallon of gasoline in the small can. Now open the pet cock from the gasoline supply, so the fuel can run to the carburetor and fill it. Start the engine in the usual way and let it run until it is warmed up well. Now close the gasoline supply and open the kerosene valve for fifteen seconds. Then reverse the valves to allow the gasoline to flow. The carburetor will now have a kerosene-gasoline mixture in it, and you will be able to see how the engine acts when burning this. If she runs along well, or with a little adjustment of the carburetor, repeat the fuel change, only leave the kerosene running for half a minute and see how the mixture, now richer in kerosene, seems to burn. If the engine still runs satisfactory, give it a longer run on kerosene and the next time switch on to kerosene, and let it stay there.

Do not expect full satisfaction on kerosene at first, because you have to get familiar with the peculiarities of burning it and it may be two or three weeks before you will have full confidence in it. When shutting down switch, over to gasoline for about five minutes, so as to stop with the carburetor full of gasoline. This will make starting easy. If you happen to stall the engine on kerosene, it can generally be started again if there is no delay in cranking. If, however, the engine is allowed to cool somewhat, more difficulty will probably be encountered and should it refuse to start then shut off the kerosene supply, drain the carburetor and allow it to fill with gasoline, prime a few times and start in the usual manner.



Manitoba Agricultural College AND College of Home Economics

Opens October 22nd, 1918

Winter Courses close March 29th

Students may come from town or country. No Entrance Requirements. Work Assigned to suit ability of Individual Student.

1.—Courses for Young Women 16 years and upwards.

Cooking.	Home Nursing.	Dressmaking.	Millinery.
Dairying and Poultry.	Gas Engines.	English.	Arithmetic.

2.—Courses for Young Men 16 years and upwards.

Stock Judging.	Gas Engineering.	Grain Judging.	Forge Work.
Carpentry.	Soil Physics.	English.	Farm Accounts.

3.—A Special Class opens on October 22nd for boys 14 and 15 years of age, from either Farm or Town.

WRITE FOR CIRCULAR

Stock Judging.	Grain Judging.	Carpentry.
English.	Arithmetic.	Farm Accounts.

Splendid College Residence with all up-to-date conveniences, Reading Rooms, Gymnasium, Shower Baths, Swimming Pool, Sitting Rooms, Assembly Hall.

The high moral tone of the College has been commented upon by Y.M.C.A. and other visitors. Senior students take active part in seeing that the right influences and environment surround younger men and women and the pure home-like atmosphere of the College brings back our students year after year.

Debates, Entertainments, Special Lectures and Social Gatherings form an important feature of the winter session.

KEEP OUR SCHOOLS AND COLLEGES FULL

You cannot measure the value of an education in dollars and cents, but even in dollars and cents, education pays.

FREE TUITION PRIZES

Write for the College Calendar and Boys Circular; also for particulars about the four free tuitions to the amount of \$25.00 each for four best letters on "Why I Should be at the College this Winter."

Address your letter to The Registrar, or to

PRESIDENT J. B. REYNOLDS, Manitoba Agricultural College

Perhaps you will find that after a thorough trial you are unable to burn kerosene at all. This, of course, is no reason why you should conclude that your tractor will not burn kerosene, for it may be that the carburetor is not at all suitable for this fuel. There are many carburetors on the market that are guaranteed to burn kerosene, or your money will be refunded, and it might be well to write the manufacturer of one of these and tell him the full particulars of your engine, manifold and carburetor, and probably he will be able to supply you with a kerosene burning outfit.

There is one warning to those who start using kerosene for fuel, and that is, if your engine uses its lubricating oil over and over, as with a splash or circulating system, be sure and watch that the oil does not become too thin through kerosene leaking past the pistons. You may have to replace the oil a little oftener when burning kerosene, especially if the piston rings are not tight. Of course, on engines that use fresh oil all the time by some positive feeding device, there is no need to bother about the lubrication becoming too thin.

BIG MONEY FOR TRAINED ABILITY

There isn't a man or woman—"highly educated or highly ignorant"—in Western Canada who has not some individual strong point—that is capable under proper direction of being employed to some great and worthy purpose, while incidentally bringing in a splendid income to the worker.

Especially in these days, when the flower of the nation's young manhood

The ability to take in and apply the necessary knowledge is already in the possession of every creature who is not mentally defective.

There's another corner of daily life that offers constant and highly remunerative employment to hundreds who are now earning but a bare pittance, and that is the barber profession. Anyone reading these lines would be amazed if they really knew what there is in barbering, and how great is the demand of experts that cannot be filled.



Two Amazon tractors—Miss Leticia Gallop and Miss Frederickson, pupils of the Hemphill Motor School

and womanhood has been drafted by the State for foreign service, are there opportunities such as never occurred before.

There is, for example, the tremendous and daily increasing field in the department of automobile, gas tractor and stationary gasoline engineering. The harvest in this one sphere of industry is truly "great but the laborers are few."

Engineering progress—particularly farm engineering—is fast outrunning the numbers of men and women who are capable of running these engines. They are becoming less complicated every day, and while the "trick" is a simple one, it is an impossible job to the uninitiated.

In both of these industrial spheres, the Hemphill Trades Schools are doing a fine work, in finding and fitting the necessary hands, and we are glad to call the attention of our readers to the announcement of this educational house, which will be found on page 35. The Hemphill Schools are no new venture, but have been established in the great business centres of Western Canada for many years, and from actual knowledge of more than one instance of their efficiency we can with every confidence recommend any interested friend to get in touch with them.



Uncle Hiram ON CONSERVATION

I ONCE heard an old-time preacher say that "experience is something you acquire when the opportunity for using it is gone." Now these old-time sky pilots had a way of saying things that drove the sentiment down your spine and made every word cling to your memory like burdock thistles. The fact was, they had lived through what they were talking about, and the best man to tell you how wet the water is, is the fellow who has been three-parts drowned.

That was one bit of street corner wisdom that stuck to me just where it hit, and it is there yet, breeding lots of similar crop. For example, that "experience" you "acquire" when you've started out to have a great day at the fair with two crisp dollar bills in your pocket pinned to a neatly hand-printed list of the things you mean to buy with it and "invest" it with the wheel-of-fortune man before you have been five minutes in the mid-way!

These early experiences were forcibly recalled to my memory the other day as I sat in the smoker of the Imperial Limited, talking to a friend. (I enjoy the smell of a friend's cigar, but I've cut out tobacco myself while the war is on.) Two great carcasses of human flesh and fatty degeneration came barging in swearing like overheated stokers at the infernal bill of fare in the dining car. "Not enough there on the whole blanket card to feed a six-months' kid! Food Controller be —!" and more to that effect.

My friend transfixed the great imponderability of wrath with his steel blue eyes and said: "Young-fellow-my-lad, I'm not in agreement with you. While I have no desire to fight about it, like yourself, I have just returned from the dining car, but with a completely satisfied appetite and the comfortable assurance that I'm not going to be the victim of an overloaded stomach. I'll admit I've paid less many a time for more grub, but that needs no explaining in these days and we all expect it."

"Furthermore, my friend, let me remind you that anyone can

'feed,' but eating is an art. The particular food controller who has cut your rations may be a perfect ass in many ways (we all are), but let me tell you to your face that there's nothing of the 'assinine' in the principle he is seeking to enforce. I find the people of this country are observing the principle, and by heck I'll back the people. Just where would we and our pals in Europe be to-day if the people of North America had said in their hearts: "damn the food controller?"

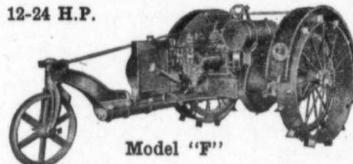
"Yes, sir, it is the inborn decency of the common herd of our western citizenship that has done the trick for the fighting lads and the starving populations of the Allied countries. Not the food controller's mandate, but the humane purpose of the man-in-the street and his household to conserve, must we thank for the fact that everyone! at the front and at home too has plenty to eat and will not lack food till the war is won."

My hair stood on end with pleasurable delight while my companion (a perfect stranger to me) spoke to that big mass of overfed corruption. And it would have given you more fun than you'd get at a Charlie Chaplin show to see how the big mass wilted—just like a nicely shaped new "Stetson" when a stout lady sits down upon it. It was a wholesome experience, carried out without spleen or so much as an argument, and we all were jolly good fellows for the rest of the trip. You can even get at the heart of a hog by fitting a ventilating system to his stomach.

Talking of hogs reminds me that at a lecture only last night I sat next to a beautiful silver-haired American lady, one of the most gentle-spoken, refined women I have listened to for a long time, and while we waited for the lecturer, her husband started the "conservation" subject. This refined woman could not do justice to the satisfaction she felt in the results to her family and herself through their voluntary rationing system. "We had really been living like hogs," she said, "and we didn't know it."

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The Isle of Prayer

(The following beautiful poem, sent by Mrs. Dayton, of Virden, to this department, was written by Winifred Davidson, a young blind girl in the Ontario School for the Blind. It was recited by her at the annual concert, at which the National Council of Women attended. I am sure it will be a great comfort to our readers. Paste it where you can read it every day.—P.R.H.)

Do you ever feel discouraged with the story of your past?
Have you tried to do your duty, tried and tried and failed at last?
Does your life seem vain and useless, crushed and desolate your heart?
Would you give earth's dearest treasure just to get another start?
Then I know a little island that is just the place for you,
Where your soul may find refreshment, and your life begin anew,
I have often found fresh courage in its purifying air,
In the place where God meets mortals—'tis the sacred "Isle of Prayer."

There the sunbeams of forgiveness soon dispel the clouds of gloom,
From our tears of deep repentance, flowers of Hope begin to bloom,
From the crystal streams of mercy, rising washed and purified,
We begin our lives all over, with a loving friend to guide,
Let us often seek the pleasures of this happy little isle,
And forget our cares and worries in the sunshine of God's smile,
He has given us many blessings but no privilege so rare
As a full and free admission to this golden Isle of Prayer.

With Our Dear Friend, Mrs. Dayton Dear Friends:

SOME of you I know have missed me from the programs of June and July. I, too, have missed you, and I hope that my absence both East and West will tend to give me an enlarged experience which I may hereafter use to the benefit of our work in this province.

Year after year the Homemakers invite me to their convention at Saskatoon held in the University of Saskatchewan. Magnificent buildings of grey stone flecked with all the colors of the rainbow patterned after the famous Eton School of old England. Situated on rising ground a short distance from the city, stretching away south and west to the splendid experimental farm in connection with the College of Agriculture. To the east, spanned by beautiful bridges flows the river, and just beyond the city of Saskatoon, wonderful for its youth and ambition. Saskatchewan has reason to be proud of its university. It is indeed "A city set on a hill" from which rays of inspiration will reach to the most remote parts of the province. Imagine what it means to the pioneer women of Saskatchewan to get away for a time from home responsibilities and to be welcomed here with the most gracious hospitality that President Murray, Miss De Lury and all connected with the University so genuinely extend to mothers of Saskatchewan. "The strong right arm of this University" dining from the same tables, sleeping in the same beds, and dancing in the same halls as their sons and daughters, watching year by year the place grow in beauty as the shrouds and trees, a short time ago so tiny, now reach to some of the highest windows. Will any

sacrifice be too great for these mothers that their sons and daughters may have the advantages here provided?

The Colleges of Art and Agriculture are here, boys and girls from the same family taking the different courses and from all parts of the province, playing on the same campus. What a beneficial influence this is bound to have on all their after relations in life. Those taking the agriculture course will understand something of arts viewpoint and art seeing the patient

not only spread all over our own province but to Saskatchewan and Quebec.

We told the Homemakers what we were doing for medical inspection in our schools. To-day, in Saskatchewan, this work is becoming general, and sanitary conditions including individual drinking cups, towels and hot school lunch are usual wherever a club exists. The first woman school trustee in the West was in Manitoba, now Saskatchewan has several. May the number increase as this is one of the

in the place and time of meeting. The beautiful old City of Brantford looked its best in those early June days. Its magnificent trees were in full leaf, and everywhere peonies in full bloom, and though many a beautiful lawn had been plowed up and given over to the production of the homely potato it in no way detracted from the beauty and comfortable appearance of the homes, but bore silent testimony to the patriotism of the owners.

It seemed to me that men and women vied with each other to give a welcome to the delegates. A public reception was held at which an official welcome was extended by the mayor and other prominent citizens.

A most delightful trip, both interesting and educative, was given by the Motor Club. Many places of interest were visited, among others the Mohawk Institute, situated a short distance from Brantford. Here the descendants of the Six Nations represented by the Mohawk Cadet Corps drawn up in full military array, the smallest one among them holding aloft the Union Jack, gave the initial welcome. Then the girls with bright red ribbons in their hair, bobbing here and there among the trees on the beautiful lawn looked, as we drove up, for all the world like a field of scarlet poppies. They assisted the faculty in escorting the visitors through the Institute, and afterwards served tea on the lawn. Then there was shown to the visitors the Bible belonging to the Mohawk Church, in which many noted names were inscribed, also the Communion Service, both given to the Six Nations by Queen Ann. We also visited the Mohawk Church near by which contains the first bell which rung for church in Upper Canada, also a very rare Coat of Arms given by George III. The Lord's Prayer, Ten Commandments and Creed in the Mohawk language brought out from England by Chief Brant in 1784. His descendants are still a loyal people, 300 of them from the village having gone to the front. Lieut. Cameron Brant, a direct descendant of Chief Brant, being the first to pay the supreme sacrifice.

We also visited the Bell Homestead situated on Tetula Heights where Alexander Graham Bell invented the telephone. The little white house which was his home has become a shrine where many a distinguished visitor finds his way, and the old wooden seat on which he pondered now grown into the trunks of triple birches beckoned us for a moment to see the valley of the Grand in all its beauty.

A concert given in the evening of this day by the pupils of the Ontario School for the Blind was most interesting, wonderful is the work being done here for pupils from all over Canada.

The touch of some of these blind children is so delicate that they can tell the color of cloth by touching it. To test one of them a piece of cloth known as pepper and salt was given, and after feeling it she said I don't just know, but it has a black thread and a white one.

I am enclosing a beautiful poem written by a young blind girl, a pupil of this school who expects soon to take a stenographer's position. No praise can be too great for the splendid staff. The work they are doing for those who can never see the beauty and the glory of God's gifts is simply wonderful.

After this perfect day we settled down to business, several days from 9 a.m. until 11 p.m.

The opening address of Mrs. Torrington the retiring president, was an inspiration and help to all privileged to hear it. She spoke of the impressive spirit of unity which characterized the Women's Con-



THE NEW WOMEN OF MANITOBA

Winners of Manitoba Agricultural College Inter-Collegiate Basketball Series, 1918. (Winning the Dingwall Cup Second Year in Succession). Beatrice Wright (forward), Evelyn Moore (defence), Gladys Henry (captain), Anna Kennedy (basketball instructor), Evadine Judson (defence), Gretta Lyon (centre), Margaret Speechly (forward), Winnie Wood (spare).

scientific work that is here being done for agriculture is bound to have a great respect for all that the word means.

Coming here as I did this year directly from eastern and southern cities, where ambition for place and position made one think there was danger of women becoming as real politicians as men, it was a great relief to look into the faces of women, not self seeking nor over-dressed and whose complexions were those that Nature had given. Not fault finding nor critical, but loyal and true to the institution which is putting forth its best efforts in their behalf. I heard no word of destructive criticism. Women here are reaching out for all that makes for better homes and a finer race. And as one looked into the faces of these pioneer women one instinctively felt that the future of Saskatchewan was safe in their keeping.

Though doing their full share of war work, they showed renewed interest in all pertaining to the children's welfare. There are now 195 clubs of these women scattered over the province and in every case the community is richer for their presence, and as we hear of what they are doing we wonder if Manitoba had had a little part in helping. Our first resolution for nurses for rural Manitoba also included Saskatchewan. As a result the head of the Victorian Order visited the West and everywhere the Homemakers welcomed and arranged meetings, and nurses were established in many districts where there were no doctors.

The small Home Economic Society of Benito, Manitoba, started the first boys' and girls' club. To-day this work has

most necessary lines of women's legitimate work.

I hope we women of Manitoba will be encouraged by realizing that we are often building better than we know. That our influence often reaches further than we may ever realize.

We are fortunate in having a government doing its best to assist us, yet leaving us free to work along any line we wish. Are we doing our part to bring to the uttermost parts of our province the benefits and inspiration of messages such as was brought to us recently by the best women of the province?

Very sincerely yours,
Rebecca Dayton.

Letter From Mrs. H. W. Dayton to the Women of Manitoba

THOUGHT it might be of interest to Lady Aikins, the local councils and others whom I had the honor of representing at the Twenty-fifth Annual Meeting of the National Council of Women of Canada, if I were to supplement the synopsis of this minutes sent out, by a description of some of the more important happenings of that meeting.

It always seems to me a red letter day for the women of Canada (whether they realize it or not), when the National Council (comprising as it does not only the women of the East and West, but now the women of the prairie provinces with their many viewpoints, opinions and interests) meets to discuss matters that pertain to the welfare of the whole women of the Dominion.

We were particularly fortunate, both

ference at Ottawa and the pledge of closest co-operation in view of the growing conviction that unity is a necessity in winning the war, and went on to speak of the wonderful changes which had come to women during her presidency, particularly the enfranchisement of women. She urged that English be taught in every school in Canada, and that the system of education be extended to include French, the language of our great ally. She made a strong plea for community singing. She would make music compulsory in all schools and would have people's choruses and people's concerts within the reach of people's pockets. Mrs. Torrington was at her best and sincere regret was felt by all that this was her last year of office. She was presented with a beautiful sheaf of roses, made a life member of the Council, and given a beautifully illumined address in appreciation of her valuable services.

There are now 59 Local Councils and 22 Federated Societies in affiliation.

By the standing committees of the National Council information as to conditions and needs is gathered from one end of the Dominion to the other, public opinion created which leads to securing legislation, and when a request comes from such a representative body to the Parliament of Canada it can only with great difficulty be ignored. Through the efforts of the National Council many reforms have been brought about. The laws relating to women and children are its especial care. The establishment of women's police courts and the appointment of women judges over the latter has been the work of the National Council. It inaugurated the supervised play ground movement in Canada. Its patriotic work has been noteworthy.

I hear some one say what was its especial work this year. I can only touch on it. Its effort for food conservation has been Dominion wide. The welfare of our women and children has been its first care. Miss Power, of Toronto, speaking on the child welfare problem said that last year over 7000 babies had died in Canada, while the deaths of the men at the front are authoritatively given as 2 per cent a year, the percentage of deaths of babies under one year is 14 per cent. That is to say the soldier braving death in camp and battlefield, has seven times better chance of life than the new born baby in Canada. Is it not time we were up and doing? The fine suggestion was made that a baby week which was such a feature in Great Britain last year, should be made Empire wide. She said the co-operation of the National Council would be invaluable. Amendments to the criminal code were urged with the result that the law of the land now is that neither man nor woman can now make a home unfit for children to live in on account of immorality. A child can be taken away from an immoral home even if it is considered too young to be demoralized.

A clause in the Criminal Code which is a shame to Canada, came in for much discussion. A Canadian boy or girl cannot sell his or her property until twenty-one years old, but a Canadian girl can consent to her own dishonor or sell her honor at fourteen years. This shame is shared with Austria-Hungary and Germany. In England the age of consent is sixteen years, and they are trying to raise it to eighteen. In the United States only six states have the age as low as sixteen, some name it as high as twenty-one. The fact that our House of Commons passed this year the amendment asked for (raising the age to sixteen years) and that it was thrown out by the Senate roused the indignation of the National Council, and many caustic remarks were heard about that body. The National Council, however, will see that the amendment is introduced again and yet again until it becomes law.

Other resolutions passed provided for the presence of women at all trials of women and children. If any woman is doubtful of the great need of this let her attend just one trial of this kind.

Miss Gunn, President of the National Association of trained nurses spoke of the great shortage of trained nurses and urged on the Council and its affiliated societies the necessity of co-operation in bringing this matter to the attention of our young women.

The United States has been in the war one year and already has 7000 extra nurses in training. What is Canada doing? There isn't a village in Canada

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but could help in this most patriotic work.

The shortage of wool and the great need of it for the army was brought before the National Council. As a result the National Council urges stopping the knitting of all fancy wool sweaters and such like and prohibiting the manufacture of yarn for this work.

A letter from the Foot Wear Reform League brought on a discussion which showed the need of reform. Mrs. Dennison, of Toronto, said she examined the feet of fifteen girls in a swimming pool in Toronto and had not found one perfect. What wonder when one sees the shoes our girls and many of their mothers are wearing. A soldier is only as good as his feet and so only is his mother or sister.

Many other important discussions took place which time and space will not permit me to mention. One of the most import-

ant resolutions was the provision for provincial executives to be appointed in each province where there are three or more Local Councils, to be composed of the president and one other from each Local Council and federated society, with the provincial vice-president as chairman. This body may bring to its provincial legislature all provincial matters without first referring them to the National Council as required by the constitution. Considerable time was spent in discussing the revision of the constitution, and a strong committee was appointed for this purpose with Mrs. McWilliams as convener.

A resolution from the I.O.D.E. threatening to withdraw from the National Council if all international affiliation with the countries with which we are at war was not repudiated. The discussion which

followed showed that the National Council was exactly in the same position as every other organization which had international affiliation, all except the Red Cross, were in abeyance during the period of the war. "The National Council like the others is waiting until the war is over before pronouncing on its policy, but one fact is certain, it will act in harmony with all other National Councils of the British Empire." The above is the gist of the National Council resolution bearing on this matter. Could anything be more fair or reasonable, yet to its own detriment the I.O.D.E. has since withdrawn. An act whereby it will lose the co-operation and sympathy of thousands of women, narrow its horizon and cripple its usefulness. In times-like these most people as well as organizations are learning that only in unity is strength. Where would

our empire and our allies be to-day if they allowed either personal or national ambition to interfere with their splendid spirit of unity. Would that we all could learn the lessons of co-operation, and put the welfare of our community and country first instead of pride or prominence of our own particular organization.

During the past year the following organizations which number over 50,000 women, have affiliated with the National Council. The Women's Grain Growers and Home Economics Societies of Manitoba, the Women Grain Growers and Homemakers of Saskatchewan, the United Farm Women and Women's Institute of Alberta. What a splendid thing this will be for the National Council and also for these women. Many of them pioneers from the outposts of Canada will in this way be linked up with the women of the older cities and provinces, and by bringing their problems together in discussion will receive sympathy and encouragement which will strengthen the whole and thus will the women of Canada assist in carrying out the dream of the Fathers of Confederation.

A strong patriotic note was heard in all reports and discussions. The final resolution sent "The love and gratitude of the National Council of Women of Canada in convention assembled at Brantford to Sir Arthur Currie, our splendid soldiers and nursing sisters overseas, for protecting our liberty and ideals with such courage in this great war." Every day in silent prayer Divine help was sought.

The annual meeting next year will be held at Regina. This will give the women of the West an opportunity which should be taken advantage of as fully as possible because it is a great educational and national privilege.

Meeting of Home Economic Advisory Board

A MEETING of the Home Economics Advisory Board was held in Winnipeg on Friday, Aug. 30th. Those present included Mrs. H. W. Dayton, presiding, with Mrs. McBeath, Headingley; Mrs. J. G. McIntyre, Dauphin; Mrs. G. T. Armstrong, Manitou; Mrs. Gair, Portage la Prairie; Mrs. H. M. Speechly, Hon. Secretary; Miss Helen Macdougall and S. T. Newton, Extension Service.

A report was presented of the demonstrations and short courses given to the Home Economics Society during the summer. The subject of the lectures included dressmaking, millinery, home-nursing, canning and war housekeeping. An encouraging feature was the increased interest in food conservation due to the demonstrations on canning, etc., and also to the stress laid on the world food situation by institute speakers who visited the societies in June and July.

The programme for the annual convention was outlined, and convenors of committees chosen. In connection with the convention it was decided to hold two sectional conferences. One, composed of Secretary-Treasurers and Presidents, who may wish to discuss Home Economics Bookkeeping and the conduct of meetings. This should be particularly valuable to secretaries who find themselves sometimes overdone with bundles of bulletins. The Home Economics Society is one of the main avenues into the homes of the people, and the literature sent out by the department ought to be distributed regularly and promptly. The members of the board agreed that much of it is wasted owing to faulty distribution and recommended that each secretary keep on file a copy of each bulletin for reference, thus securing a permanent collection of really valuable material.

The other conference will deal with the part to be taken by the Home Economics Societies in the summer fairs. This is designed to promote a high standard of fair exhibits and to give explanations of judging. The board recommended that at an early date while the 1918 fair is still fresh in the memory, Home Economics Societies discuss the management of the recent fair with a view to suggesting improvements for that of 1919. These plans are so often left until the spring when the previous fair is merely a fading memory. Home Economics Societies were also advised to consider

holding a horticultural section of the summer fair and thus securing a government grant.

A further recommendation was made to the effect that each delegate to the annual convention attend each session. Unless the delegates attend each session they are liable to miss the thread of the discussions and are not able to vote with full knowledge of the subject under discussion.

While still considering the convention, the question was raised as to whether the total government grant paid to the Home Economics Societies, on a basis of membership would not be used to a greater advantage in paying the railway fares of delegates to the annual convention. This would mean that the nearby societies would receive less, and the far-away societies more. This question is to be discussed at the annual convention when a recommendation from the Advisory Board in its favor will be considered and voted on.

The problem of planning programmes suitable for the monthly meetings was considered. To solve this, it was decided to hold a competition in which prizes will be given for 1919 programmes most suitably planned and tastefully printed. Details will be announced later.

Finally the question was raised of women's responsibility towards the young people. Societies were asked to consider the formation of Junior Home Economics Societies or Senior Girls Clubs. Following on a thoughtful discussion of the problems relating to the younger generation both in and out of the home, the board decided to ask the Home Economics Societies to participate in a representative meeting of the women of the province, to be convened by Mrs. H. W. Dayton, with whom as Provincial Vice-President of the National Council of Women the local councils will co-operate. This meeting will be held at a date in November to be announced later. In preparation to this event Home Economics Societies are asked to make a study of questions affecting women in their new citizenship, having particularly in mind problems relating to themselves and young people.

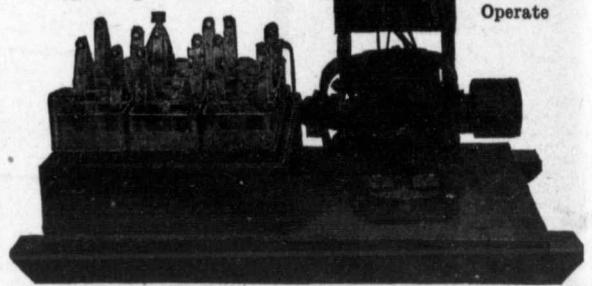
Conference of Institute Speakers

ADVANTAGE was taken of the presence in the city of the members of the Home Economics Society Advisory Board to call together the institute speakers who had visited several of the Home Economics Societies during June and July. The meeting was convened in Winnipeg on Thursday, August 29th, with Mrs. H. M. Speechly presiding. Besides the members of the Advisory Board there were present Mesdames Robson, Winnipeg; Dickinson, Birtle; Hamilton, Portage la Prairie; Miss Johns, Superintendent Children's Hospital, Winnipeg; Miss Russell, Department of Public Health, Winnipeg; Miss Clarke, Extension Service; and Miss Clendenan, Farmer's Advocate, Winnipeg.

The object of the conference was to give the speakers an opportunity to exchange ideas and experiences, and by describing the needs in the localities visited, to enable the Extension Department to sum up the value of the work done and to plan the programme for the coming year.

All were unanimous in bearing witness to the value of the demonstrations and also to the power of a Home Economics Society in the community when it was well officered and promptly organized. It was generally agreed that the Home Economics Society, because of its comprehensiveness, was the best organization for rural districts, but that a greater sense of local responsibility for meetings was needed. In many cases the local officer had made no effort to secure an audience, and yet after the meeting had been held there was general regret at the smallness of the gathering. It was suggested that the telephone might be used to a greater extent than at present to advertise meetings. Instances were quoted of good audiences gathered together in places where one Home Economics member on each party line called up and secured the presence of every subscriber on her line.

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Further remarks on meetings, meeting places and hotel accommodation elicited the feeling that the Home Economic Societies might include in their activities an attempt to remedy conditions that are at present anything but sanitary in many cases. Evidence was given showing an increasing interest in the health and well-being of the children. In fact, all allusions to the health of the people were sympathetically received—an attitude fostered and in a large degree due to the popular Home Nursing lectures given for the last four years by Miss L. Clarke of the Extension Service.

Allusion was frequently made to the sad plight of places where too many organizations existed, and the true community comradeship had been killed by the weeds of discord and strife. Instances were given of average sized districts where the Home Economics Society at the beginning of the war had risen to a great national occasion, and backed by an unanimous public, confidence had undertaken the women's end of patriotic effort as an auxiliary to a community effort on the part of the men. It was pointed out that in the larger places where possibly there might be room for more organizations, it was quite possible for all to co-operate for the benefit of the whole district, all groups working harmoniously together and uniting whenever the occasion presented.

With regard to the question of food conservation, it was agreed that a better understanding of food conservation brought about a better feeling towards it. After a full discussion of some of the difficulties, the following resolution moved by Mrs. H. W. Dayton, seconded by M. G. T. Armstrong, and carried unanimously, was directed to be sent to the western branch of the Canada Food Board.

Resolution

Whereas the present food law calls for a pure standard wheat flour and pure substitute flours, and we are assured that both the present standard flour and substitutes are being blended, and

Whereas the law demands that one pound substitute be used to four pounds of standard flour, and Whereas this present combination flour contains a much higher percentage of substitutes than called for, and does not make good or wholesome bread.

We therefore recommend that this matter be drawn to the attention of the Western Branch of the Canada Food Board in order that the public may be able to procure a pure wheat flour and pure substitutes, and, further, that the samples of the flour mentioned be submitted to the western branch of the Food Board.

COAL SELLERS LIMITED

Coal Sellers Limited, with head offices at Winnipeg and branch offices at Regina, Saskatoon and Calgary, report business in all lines of coal as exceptionally brisk for this season of the year. This company has largely increased the output of its Pembina Peerless Mine, situated about seventy miles west of Edmonton, and is in a position to appoint numerous new agents for this coal. By Dominion Government Test (Department of Mines, Ottawa, 1915 Report No. 331) Pembina Peerless Coal is proved to be superior in efficiency and actual heat obtained to Taber, Drumheller and Edmonton coals.

A western desperado had been killed. There was scarcely any evidence against the man who shot him. The coroner's jury brought in the following verdict: "We, the jury, find 'Bad Bill' was killed with his boots on. We're against killin'; but thank God Bill's dead."

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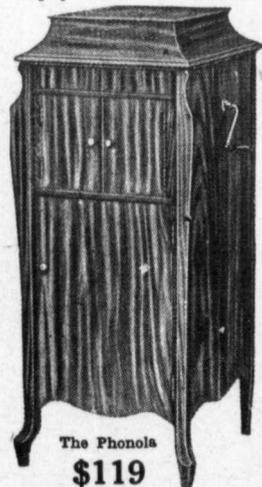
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The Rest Room: The Rural Women's Town Home

WHY did we start a rest room? Because it was a crying necessity then, and is just as badly needed now.

Eight years ago the first rest room in the West was started in Virden, Manitoba, by the Home Economics Society of that town. At this time there was no provision made for the comfort of women coming to do their business in the towns. Men and horses were taken care of (men often to their detriment) but women after their shopping was done, waited around the stores or walked the streets, often with a child in arms and others at their feet, waiting for husbands who were often long in returning.

We had faith in our venture and started without a cent, rented a good room (which

we could divide in two) in a central location, on the ground floor, at \$15 a month. No rest room should ever be upstairs. We furnished it by gifts from men and women of toilet conveniences, furniture, telephone, pictures, sofas, magazines, books and daily papers. (We had to have the Telegram when we had the Free Press, for we were a strong party people in those days.) We then hired an honest, discreet matron to begin work at 11 a.m. and stay until 9 p.m., at \$15 per month.

How did we finance it? The H.E.S. took the responsibility, appointing a strong committee whose duty it was to attend to it, and for the first year the members of the Society gave all the establish. Then donations from our merchants, dinners, grants from our town council and one rural council, with the sale of refreshments, did the rest. Some rural

councils turned us down. They didn't realize what it was going to mean.

To-day this room is the community centre for the women of the district. Many bring their butter and eggs here, having previously arranged with the town women for sales. In the early days of our patriotic work we gave out thousands of articles, cut, ready to make, and hundreds of pounds of yarn for socks from this room, and this got the whole country side interested in the work, and also in the room. Our women feel at home here, leave their wraps and their children, get a cup of tea if they wish, meet other women. There is always some one in the rest room. In winter they heat foot warmers, wrap up the children, etc., and go home in comfort. Doctors say if there was a rest room in every town there would be fewer sick women.

To-day there is no trouble to finance it.

Women using it give subscriptions, grants come from councils, and an occasional dinner does the rest. The upkeep is between \$600 and \$700 a year. Many H.E. Societies provide heated furnished rooms without the matron, but these lack hominess and sociability.

To the men of Portage la Prairie must be given the credit of solving the rest room problem in the ideal way. It is the only place in the Dominion where men have done such a thing. These men saw the need, and knowing that nothing was too good for their mothers, wives and sweethearts, many of whom were breaking down under the stress of war, put their heads together, located suitable rooms, furnished them, equipped them beautifully in every detail, including telephone and kitchenette, put a matron in charge who has her own room and sleeps there, then handed it over to a committee of women

to manage, and like men, paid for the upkeep out of the taxes. What did it add to these? The first year when it was being furnished which included painting, etc., it increased the taxes 45c a quarter section. Since then 12c a quarter section maintains it. The tea served pays for writing paper and towels, paper, coal oil for the stove. The men do the rest.

It is good business for any town to make the women who do the shopping in it comfortable. I am sure the rest room helps Virden's business. It is very important that the right sort of matron be secured; she must not be too young, must be able to hear well and say little.

Mrs. H. W. Dayton,
Virden, Man.

Mother's Corner

Thought and Prayers

As I sit by the sunny window,
My thoughts are far away
From the small, wet garments I'm making
For our own little one of "some day."

For over the stormy ocean,
In the land they call "somewhere,"
The laddies of other mothers
Are bravely doing their share.

They fight for the cause of freedom,
For the country that gave them birth,
They battle for "home" and "mother,"
For the future homes of the earth.

For the sacredness of the family,
For liberty, justice and right,
For the millions of little children,
Who never have seen the light.

Because they stand to protect us,
A wonderful birthright they give
To the boys and girls of the future—
The right to grow strong and live.

So, while my fingers are busy,
My heart is breathing a prayer
Of thanks "Oh, Father in heaven,
Protect them, in France somewhere."
—A. N. W.

A good husband is a good son grown up.

Parents' Mistake

No greater mistake can be made by parents than to fancy that a boy is naturally inclined to go wrong; and no mistake is so likely to make a boy go where he is expected to go. The fact is that anything is natural to a boy. He can be bent crooked or kept straight like a growing bough, and the chief reason why goodness does not appear to him more tempting than sin is that goodness is seldom made so interesting, picturesque or heroic as sin. In the Oriental picture of the shepherd and the sheep in the Fourth Gospel the shepherd goes before the sheep and the sheep hear his voice and follow him. That is the only way to be a shepherd of boys. They are hard cattle to drive, but easy to lead. There is nothing they like better than a consistent single-minded straight-going leader and when they hear his voice they follow him.—Francis Greenwood Peabody, in "Religious Education of an American Citizen."

Dear Mothers:—

THIS corner is indeed a lovely place to visit. While I write I see baby faces smiling at me every where. I have never before had so much pleasure opening my mail. I eagerly look for a sweet baby face in nearly every letter to this corner. This month we had great difficulty in deciding the monthly prize letter for one judge insisted that Mrs. Duncalie, the mother of eight, should have the two dollar prize, another was determined to give it to Mrs. Marshall, the mother who increased her baby's weight from six to twenty pounds in one year, and then they felt Mrs. Hagen, whose baby at five months and a half weighed twenty-seven pounds, should be awarded the prize. I impressed on them the fact that the monthly prize is for the most helpful letter on the care of children. The judges of the Baby Contest will decide on the most perfect child in October. All the monthly prize letters with pictures of the children

will be entered in the baby contest, as well as all other letters with photos received.

Remember every month a prize of two dollars is awarded to the mother who writes the best description on the care of children.

Besides this prize is the Baby Contest. This contest is open until the first of October. Twenty-five dollars is offered to the mother who sends us the picture of the most perfectly formed child with a description of the care of the child. The second prize is ten dollars and the third is five dollars. We hope to have the pictures of a hundred babies for this department. Do you want to see your baby's face in our department? You will help other mothers by sending us your experience on the care of children. We believe we have the most helpful mother's department in Western Canada because the information is practical, it comes from the hearts of mothers.

Your particular letter may save the life of a little one. Is that not worth while? Send us, then, the photo of your little one with a description of your care of the child. Give weight, height, chest measurement and general condition. Every photo will have a place in our department. I all want to see the picture of you, little one on our page. Send all letters and photos to Pearl Richmond Hamilton, 983 Grosvenor Ave., Winnipeg, Canada.

Prize Letter

Flaxcombe, Sask.

I AM sending a photo of my baby, Doris Agnes Darinis, born April 30th, 1916. She was a fat healthy child when born, weighing 10 pounds and at present, age two years and almost three months, she weighs 29 pounds, chest 21 inches, height 35 inches, head 19½ inches. I nursed her and she gained right along. Every day I gave her



Doris Agnes Darinis

warm water two or three times, sometimes I put a little peppermint in it as it would raise any wind off her stomach which might have prevented sleep. When an infant about three months old, I started to give her every day one half or one arrowroot biscuit, rolled almost as fine as sugar, with warm water on it and a little sugar. Later, when able to use her hands, I gave her a small crust of bread, and when old enough to take solid food it consisted of cereals, soft boiled eggs, beef broths, custards, and any light food that is easily digested. She has her full set of teeth without any trouble other than restlessness at those times. I gave her a teaspoonful castor oil which always soothed and helped her. She had her daily bath. I also kept boracic acid water to wash out her eyes and mouth.

She walked good at 12½ months and talks now at 27 months very plain and has always had a healthy color.

When about 10 months old she took whooping cough. I simply rubbed her with camphorated oil and burned a Vapo Cresoline lamp, taking care to not bath her, only sponge bath, so as not to get cold, and she came through a hard attack losing comparatively little if any flesh.

Thanking you for your interest.

Yours very truly,

Mrs. Frank Darinis.

Weight and measurements without clothes.

Mr. Thresherman

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The mother of Doris has given us a very helpful letter. I am sure many mothers will learn much from this letter.—P. R. H.

Dear Mrs. Hamilton:—

I AM enclosing some pictures of my baby, that I took myself, and hope you find them nice enough to put in "Mother's Corner." Her name is Olive May Marshall, and is now one year old. At birth she weighed six pounds, at three months fifteen pounds, and twenty now. Her chest measures 19 inches, and her length 31. She is my first baby and is so healthy, happy and good.

I have never had cause to worry over her, as she never has had any sickness. Her first tooth came at seven months and three weeks, and she has eight now. I nursed her for nine months, and then started giving her arrowroot biscuits, and lately she has been having beef broth and some Nestle's Food, and any light food that she will take. I have not weaned her altogether.

She has had orange juice nearly every day since six months. I have always tried to feed her at regular times. She will not take a bottle, so I feed her from a spoon or a cup. I started putting her in a nursery chair at six months, and she is a very clean baby.

After her bath in the morning she goes to sleep in the hammock on the veranda, and again in the afternoon for a little while. She goes to bed regularly at seven o'clock, and if she does not fall asleep while feeding I just leave her and she very seldom cries, but soon falls asleep. She has always slept in a cot by herself and has never given me a night's trouble. She sleeps all night, and wakes up about four or five usually for a feed, and then sleeps on until seven o'clock. I am a great believer in lots of sleep for children.

My girlie is so good-natured and sweet. Is not shy with strangers. She is creeping around into all kinds of mischief, and I think will soon be walking.

I like reading the letters from other mothers and I am sure your interest will prove a great benefit to many readers.

Yours sincerely,

Mrs. Robert Marshall.



Olive May Marshall—5 months



Olive May Marshall—14 months

Editor's Note—Mrs. Marshall deserves great credit for increasing her baby's weight from six pounds to twenty in one year. Olive is a beautiful child and shows excellent mothering.

SOMETHING YOU WILL LIKE



WARM, STYLISH SET OF BLACK WOLF one of the very very special values offered, fine silky black fur which will give real service. SCARF is wide on shoulders trimmed with head, tail and paws as shown. MUFF is large, roomy and warm, trimmed as shown, saten lined, silk poplin ends and wrist rings, scarf lined with silk poplin. A rich dressy set at a very moderate price.
M 809, Price Per Set Delivered..... \$25.00

STYLISH COAT OF NORTH-ERN MUSKRAT made from the finest selected skins, length 60 inches, cut full and roomy, finished with full belt. Note the deep sailor collar and the handsome reverse border effect on the skirt. Lined with guaranteed satin l'custon. MUFF to match, cut in reverse effect to match border on coat. Sizes 34 to 44.
M 718, Coat Delivered..... \$155.00
M 718, Muff Delivered..... \$2.50



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You see HALLAM buys the Raw Furs direct from the Trappers for Cash, and every skin is carefully inspected—sorted and matched.

Then Hallam selects the best and most suitable skins, makes them up into the famous *Hallam Guaranteed Fur Garments* and sells them by mail direct to you for cash.

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And how easy for you—simply look through HALLAM'S Fur Fashion Book, select the articles you think you like and send the order to us by mail; no time wasted—no noise—no waiting in a busy store—no bother—and no urging by an anxious sales clerk—then by return you receive your furs—the whole family can examine them in your own home without interference—and at your leisure.

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Everyone should see this BOOK, it shows Fur Coats from \$36.00 up to \$550.00 and Fur Sets from \$6.50 to \$300.00.

The articles shown here are all taken from this Fur Fashion Book and will be promptly sent on receipt of money.

Thousands of pleased people from all parts of Canada, who have purchased Hallam's guaranteed Furs by mail, bear testimony to the wonderful values given.

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DURABLE, WARM COAT OF MANCHURIAN FUR, 60 inches long, made from jet black glossy, full-furred skins. It is very full and roomy and just the garment for hard wear and warmth combined. Lined with farmer's satin, finished with pouch pocket, fastening with large crocheted buttons. Deep storm collar and lapels, deep cuffs on sleeves. Sizes 34 to 46. MUFF to match in barrel shape trimmed with head and tail, satin cuff and ring.
M 780, Coat Delivered..... \$45.00
M 781, Muff Delivered..... 8.50

HANDSOME SET OF NATURAL GREY CANADIAN WOLF, beautifully soft full-furred skins are used. Scarf is in wide cape effect, giving great warmth and protection. MUFF is in the new "Camden" shape roomy and warm, lined throughout with grey silk poplin, muff has wrist rings, silk cuffs, etc., trimmed with natural heads, tails and paws.
M 806, Scarf Delivered... \$21.00
M 807, Muff Delivered... \$2.50



Dear Mrs. Hamilton:—

Miami, Man.

ENCLOSED is a snapshot of our baby boy taken at the age of eight months. At birth he weighed 8 pounds. He is now 9½ months old and weighs 18¾ pounds, height 27 inches, chest 18 inches, abdomen 16¾ inches, head 18 inches. He has four teeth. From the first we have tried to teach him regular habits, and he is the most happy little fellow imaginable. He has never

been sick and we have not lighted the lamp for him since the night he was born. After his first bath he was rubbed with olive oil to prevent colds, and though the others in the house have had cold and la grippe he has escaped them all. I also use it to keep his little head clean, rubbing a little into the scalp about once a week. For his mouth and eyes I used boracic acid powder (a teaspoonful to a cup of water), using a clean swab each time.

At first I fed him every two hours when awake and let him sleep as long as he would, but soon found he was so hungry and the milk came so fast it gave him indigestion, so took to feeding him every two hours, and he would go on sleeping, and was not bothered with wind on his stomach so much. If had nothing but the breast until five months old, with lots of boiled cooled water without sugar or anything in it. Then I took to feeding him half a soda biscuit at dinner

time, gradually increasing to a whole biscuit. He now gets two, one at mid-day and one for supper, and is fed only every three hours. I do think more babies are made cross by overfeeding than any other cause, and then the poor little things are shaken and rocked until they are tired out, for their mothers would do anything for them when they feel so miserable.

He has never been rocked to sleep, but since he was a month old I always let him

have a good kick on my knee when he is undressed. He now creeps all around and pulls himself up by the chairs. I have seven older children so have had lots of experience with babies.

Yours sincerely,
Mrs. H. T. Duncaife.



Walter Newton Duncaife—8½ months

(This mother of eight little ones has found time to write us a most helpful letter and has sent us a picture of a lovely child. The idea of olive oil after the first bath is excellent. I have rubbed it on my little one after her bath. If the stomach is weak it is an excellent help for strengthening and nourishing the body. I have used olive oil for rubbing the child's stomach and back after stomach trouble.)

Dear Mrs. Hamilton:—
Saskatoon,
We have been taking your book, The Canadian Thresherman and Farmer, for some time now, and saw your contest for babies, so I am sending a photograph of our baby girl, age 15



Dorothy Valina Grummett

months now. At birth she weighed 8 pounds. She was short and fat and had dark hair and eyes, and slept most of the time. We had to waken her to feed and bath her till she was three months old. She is a breast fed baby and was so good. Her daddy wanted to know one day if she did all her crying when he was at work, but she never cries like other babies do. She has never been sick, even when getting her teeth, and she walked when she was 12 months old. She used to creep on her hands and feet. She never crept very long, and now she goes out to play with the other children. She is our fourth girl.

Thanking you for space in your contest.
Yours truly,
Mrs. B. Grummett.
(Little Dorothy Grummett is a splendid example of good mothering. Our babies are making this department most attractive and helpful. We love them all—P. R. H.)

Dear "Corner":—
ENCLOSED you will find a photo of my second youngest little girl, Elsie Viola McMillan. She was born on the 27th day of March, 1916. She is 36½ inches tall, chest measurement



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Elsie Viola McMillan

21 inches and weighs 31 pounds. Her hair is a pretty golden hue tinged with red and has large black eyes.

She has always lived on a farm and from a month she was a bottle baby, being raised on cow's milk. Other prepared foods were tried, but none seemed to agree with her like the cow's milk, on this you could see her thriving every day. She is now a fine healthy girl and never sick a day, and is certainly lots of company. This is her latest picture taken but a couple of weeks ago.
I am very much interested in the Corner, and think it ought to help save our babies by other people's experiences. I hope to see my baby's picture in the paper before long.

Sincerely yours,
Mrs. W. McMillan.

Dear Mrs. McMillan,—Will you kindly write us exactly how you prepared the milk for the first six months? You have been so successful that many mothers will be grateful for complete directions from you.—Sincerely, P. R. H.

(Every one who sees this department will fall in love with the splendid boy on next page.)

Dear Friend:—
Davidson, Sask.
AS I was reading in The Canadian Thresherman and Farmer, I saw this contest for babies, so will send a photo of my baby. When this photo was taken he weighed 23 pounds at three months and a half. We weighed him again about two weeks ago—at five months old, and he weighed 27 pounds. His chest measurement is 22 inches and length is 28 inches, her body is solid. It is not flabby fat.

He was fed on the breast for a month and a half, and then he was put on a bottle all together with nothing else but cow's milk at first. I put in five ounces water and three milk and half teaspoon sugar for about a month and half, and then gradually put more milk in until now he gets pretty nearly all milk, and is now five months and two weeks.

He has always been as healthy as a baby could be, and I have had him sleeping alone ever since he was born. The main thing is keeping him dry, clean and comfortable. That helps as much as feeding. When he gets baby colic I make him good and warm and he is soon

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relieved. I don't like too much medicine for baby. Castor oil is all right once in a while. I feed him whenever he is hungry. A baby cries either when hungry or colic or is not dry.
My little girl is three years and is a big fat girl, and I raised her the very same way.



Erven Orval Hagen

My baby is not bothered with summer complaint, but a good remedy for that is to take the milk away and give them lighter oatmeal gruel or barley water boiled for three hours straight, and give the juice thereof strained through a cloth and sweetened, until the trouble is stopped.
From yours truly,
Mrs. E. Hagen.

Hyde Park Homemakers' Club

THE Hyde Park Homemakers held their monthly meeting on July 11th at the home of Mrs. James Brandon.

There was a crowded meeting, ten members being present, five visitors and quite a few children. The meeting opened with the singing of "The Maple Leaf." Minutes and correspondence were then read and dealt with. A letter was read from the secretary of the Hyde Park Exhibition Committee asking the ladies to arrange about the refreshments

for the exhibition. It was proposed that the money raised was to go to the Red Cross and Y.M.C.A., that took quite a long time to discuss and elect a committee for same.

It was then thought we had better bring the meeting to a close and have a little music and friendly chat. We then sang the National Anthem.

We were very pleased to welcome Mr. and Mrs. Rayner among our midst, our new minister and wife, also so many new faces from Hillside district. Mrs. Brandon then brought in a very dainty lunch which we all enjoyed.

The time for departure arrived. The next meeting is to be held at Mrs. Shepherd's on August 8th. We hope all who can possibly come will do so. It will be the final meeting to arrange about refreshments for exhibition.

We are sorry we did not get May and June report in, but our reporter was away. Our May meeting was held at Mrs. McNabb. June meeting at Mrs. Parkhouse.

(Mrs.) A. J. Marsh,

Hartney H.E.S.

THE members of the Hartney H.E.S. met at the home of Mrs. Thos. Fry, of Melgund, on Thursday, July 4th. Members were taken by auto to the home of Mrs. Fry, a distance of six miles from Hartney, our usual meeting place.

Miss Annie Robson read an interesting instructive paper entitled "A well arranged and equipped kitchen." After reading her paper Miss Robson passed drawings and plans of well arranged kitchens and farm homes. She also showed samples of labor-saving devices. A miniature ironing board to attach to the wall by means of a hinge was shown. This board could be folded to the wall when not in use and thus occupy very little kitchen space. Every one was much interested in Miss Robson's topic, and she felt well repaid for the pains she had taken and the time she had spent in the preparation of the subject.

Mrs. Fry served buffet luncheon to the guests and the usual collection for the

Belgian Relief Fund was taken, and added \$4.80 to the fund. After an hour of social intercourse the ladies adjourned.
O. M. Hodgson.

August Meeting

The August meeting of the Hartney H.E.S. met in the Town Hall on Thursday afternoon, the first of the month.

Mrs. Dr. Graham read a paper on "First aid before the doctor comes." She first explained the body and its anatomy. She then explained different wounds, such as might happen to one engaged in housework, a cut causing capillary wound, a venous wound and an artery wound. A fracture of the different bones was explained, also dislocation of different bones.

Dr. Graham demonstrated a bandage for a broken jaw bone, a broken bone in the forearm, in the upper part of the arm, a broken collar bone, a fractured rib, a fracture of the bone between the thigh and the knee, a fracture between the knee and the ankle.

Mrs. Graham and Dr. Graham passed at intervals, giving the members the opportunity to ask questions on any points not thoroughly understood.

Mrs. Graham explained how ice and cold applications were beneficial to sprains. After Mrs. Graham explained treatment for different wounds, Dr. Graham demonstrated. Fainting was explained and treatment demonstrated. Bites from animals, particularly those likely to be poisonous were fully dealt with, and saving the wound to prevent spreading of poison was advised. The treatment for burns and scalds were explained. The paper and demonstration were particularly beneficial.

A vote of thanks was tendered Dr. and Mrs. Graham for their excellent paper and demonstration.

Miss Hazel Thomas gave a reading. The members voted \$15 for the Red Cross Fund that is promised by the Provincial H.E.S.

After serving light lunch the meeting adjourned.

O. M. Hodgson.

MACLEOD'S QUICK SERVICE TO THE FARMER

ON another page will be found the advertisement of MacLeod's Ltd., of Winnipeg, who specialize in Stationary Engineering Plants, Horse Truck Outfits, and in every conceivable detail of farm machinery and equipment, belting and belting supplies, farm and blacksmithing tools of all kinds, harness, dairy equipment, steel stock tanks, domestic needs, such as high-class footwear, etc.

MacLeod's issue a most attractive catalogue, copiously illustrated, for which there can be no loophole for misapprehension in ordering, and from which the purchaser can select his or her wants just as if the article were seen and handled in the store. MacLeod's, like all honest traders who have built their business on real, as distinct from alleged "service," carry all risk of disappointment, and send out every order on the clear understanding of "perfect satisfaction or the money refunded," with all transportation charges which the purchaser may have paid.

On the solid footing of quality, service and price, this enterprising house basis its bid for western trade. Its financial standing is first class, and reference is permitted to any bank or Commercial Agency. We have personally seen a very large number of the most unqualified acknowledgements from western people who "bought and were delighted" with their experience at the hands of MacLeod's Limited.

Nut Stunt

On a table place eight nuts of the rolly variety—such as walnuts, pecans, hazelnuts, etc. The problem is for each player in turn to put four on the back of each hand, using his hands to place the nuts and also his teeth if need be. After having placed the nuts, each must walk rapidly around the room; only such nuts as remain on his hands are counted in the game. Or scores may be omitted and each player perform the stunt again and again until successful.



Make

Good material—cut to fit—strongly sewn.

NORTHERN Shirts & Overalls

Made for Western Canada Farmers and grade as good as the wheat No. 1 NORTHERN

The Northern Shirt Co. Ltd. WINNIPEG



"It Raises the Dough"

Gold Standard BAKING POWDER

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Gold Standard Mfg. Co. - Winnipeg

Our Young Folks

Dear Boys and Girls:—

WE are sending out the prizes at the end of every month. Kindly acknowledge them for we want to know that every winner receives the prize. We have had a great revival of interest in this department. We are anxious for every boy and girl who reads this page to write to us. Write us about your part in winning the war, your ambition in life, anything that interests you will interest us. Boy scouts, the boys' and girls' clubs and other boys and girls are invited to write to our club.

A prize of two dollars is awarded every month to the boy who writes the most interesting and helpful letter; a prize of two dollars is also awarded every month to the girl who writes the most interesting letter. Send all letters to P. R. Hamilton, 983 Grosvenor Ave., Winnipeg.

With best wishes to every boy and girl who reads this department. I am, sincerely,

Cousin Doris.

Girl's Prize Letter

Daysland, Alta., August 5th, 1918

Dear Cousin Doris:—I have just been reading the interesting letters of our Young Folks' page. I saw that I nearly won the first prize last month so I will try again. This time I am sending a picture of the old homestead house. We lived in that house 12 years, then we built a new house with eight rooms in it. That sure was a change to go into a large house. I am sending a photo again this time which was taken two years ago. It is a picture of our 200 pigs which we fed for the soldiers at the front. These are only a few of the hogs we had. There are two of my brothers on the picture also. My oldest brother and my third oldest one. Papa could not do anything hardly but feed the hogs all day. We had a frost out here, July 23rd, and it froze all our grain so we cannot use it for anything but to feed to the cattle.

We were at a lake last Sunday called Dried Meat Lake. There was a large crowd of people with whom we spent a most enjoyable day. The crops around the lake look fine.

I must close now for my letter is getting quite long. Hoping I'll have better success than the other time. I am, your loving friend,

Elizabeth Koetke.

(We are short of space for the boys and girls this month, but they will get "big measure" in October, when we will publish Elizabeth's fine picture.—Ed.)

Boy's Prize Letter

Keeler, Sask., August 8, 1918.

Dear Cousin Doris:—I read your interesting corner for the first time last month as I did not know there was such a club. I read all the letters and then I thought I would write. The boy who won the prize last month wrote a very interesting letter. I think the scouts are a good thing for they can help the war in many ways. I am helping by growing peas, onions, lettuce, radishes, turnips, carrots and potatoes. Then I kill gophers which saves the wheat. I got 247. I do not drive any horses as my brothers and daddy drive them. I will drive some when my brother Irwin goes to the war. He will be drafted this fall. I get the cows in and do other work. We are milking two cows, then we will have one come home from pasture. We have five pigs and about thirty hens and ten horses. I go to school and passed into grade six this midsummer. Our teacher left and I am sorry. Our school starts on Monday.

The town of Keeler is not very big but they do a lot of work and business. On the first of July there was a celebration in Keeler. They cleared over \$600. There were all kinds of races and I won one. Then there was baseball. The first game was played between Tuxford and Keeler, and Keeler won. The second game was played between Brownlee and Keeler, and Keeler won again, so they got the \$25 prize. There is a concert in Keeler to-night. My mother and daddy are in it.

Next week is the Fair in Moose Jaw. There is supposed to be a lady to fly in an

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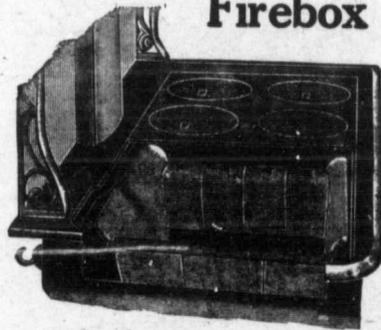
E. W. GILLETT CO. LTD.
TORONTO, CANADA
WINNIPEG MONTREAL

Maple Drop-Cakes

Melt two tablespoonfuls of butter substitute, add one cupful of maple sirup, two yolks of eggs well beaten, one cupful each of whole wheat flour and wheat flour, sifted with two teaspoonfuls of baking powder and one-fourth teaspoonful of salt, and add one-half cupful of chopped nuts-meats. Mix well and drop by spoonfuls

on greased tins and bake in a quick oven. Cool on a wire rack, then cover with the following maple icing: and place half a nut meat on top of each: Pour one and one-half cupfuls of maple sirup into a saucepan and boil until it forms a soft ball when tested in cold water; then pour upon the stiffly-beaten whites of the eggs and beat until thick.

The Stretchable Firebox



Durability in a firebox depends mostly upon its ability to expand when hot and to contract when cold, without cracking.

Ever notice that steel rails are laid with a space at the ends—it is wider in winter than in summer. That space allows for stretching in the warm summer weather.

Kootenay fireboxes are made of nine pieces of pure semi-steel. They can expand without cracking. That is why Kootenay fireboxes last so long. If you do have to change a piece it comes out with a tap of a hammer—no bolts, no rivets or other fastenings—just good accurate fitting.

"Service in the Kitchen."—Booklet Free

This is only one of the many features of the Kootenay Range described in a beautiful little booklet, "Service in the Kitchen," which will be mailed free on request. It tells all a woman wants to know about a range before she buys it.

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Send us your bill of lumber and without cost or obligation to you we will promptly tell you the exact cost delivered FREIGHT PAID to your nearest station.

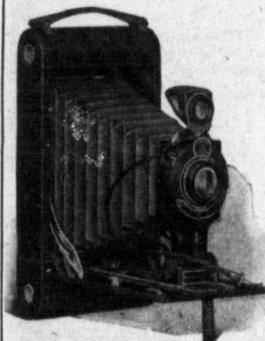
A carload requires about twenty-two thousand feet. If this is more than you require, club with your neighbors. We will load and invoice each order separately. We guarantee QUALITY, COUNT and MEASUREMENT in every shipment.

A POSTCARD WILL BRING OUR GENERAL PRICE LIST. Or send your bill for our quotation DO IT TO-DAY.

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3A Autographic Kodak, Jr.

Price, \$17.50

Pictures of family and friends, of neighborhood gatherings, of beautiful scenery—each negative dated and titled at the time of exposure—that's pleasure.

Pictures of live-stock, of barns and fields and orchards, whether for record or comparison, pictures showing up-to-date methods in other farms that you would like to imitate in yours—each negative bearing the date and title written on the film at the time of exposure, without which no record can be authentic—that's business.

The 3A Autographic Kodak, Jr., illustrated above, is an ideal camera for the double duty. Compact, mechanically and photographically RIGHT and very easy to operate.

THE PRICE

With Meniscus Achromatic lens, \$17.50
With Rapid Rectilinear lens... \$6.00

CANADIAN KODAK CO., Limited
TORONTO, CANADA

airplane. I must stop or there will be no space for the other boys' and girls' letters. If I win the prize it will be a surprise to me. Yours sincerely,
Wray Wiley (Age 10.)

Clanwilliam, Man.

August 12, 1918.
Dear Cousin Doris:—I like to read your most delightful letters which I think are grand. I am always anxious to see who gets the prize every month. I wrote before but I hope I will do a lot better this time as I have a whole day to write it in as it is rainy weather and can't go out for mud and water. I am going to tell you how I got a stem of a maple tree to grow.

I first got a stem I cut off nearly at the bottom of the maple tree, then I took it in the house and put it in water till it got roots then I planted it outside. One day when I came to water it I found that the heart was fading away. I thought it was dying but I discovered at almost the bottom a fresh heart was growing and two leaves, and I looked after it for a few days. One day lately I found it dead and broken. Now I have a lot growing in the garden which has been planted the same way. I wonder if any boy or girl has ever tried this stunt before.

Sincerely,
Martine Neilson (12 years).

Pilot Mound, August 10, 1918.

Dear Cousin Doris:—My garden is splendid. I started using new potatoes on August 1st, and vegetables, too. But could have sooner. I am using beets, turnips, peas, carrots and the corn is just ready. I have a lot of pumpkin plants, they are in bloom. Then I have a small flower garden which is in bloom and looks very nice. I have poppies, sweet peas, pansies, zinnia, pinks, wild cucumber and morning glory. I like morning glory the best.

Wild fruit is not very plentiful this year. There are a lot of cranberries and choke cherries. I have a row of wonder berries in my garden. They are in blossom. We have a small crop but a good one so far, also a good patch of potatoes.

I will close hoping the club success. I hope to receive my prize soon. From your friend,

Marion K. McEwen.

Killam, Alta., August 7, 1918.

Dear Cousin Doris:—When we got The Canadian Thresherman and Farmer I at once turned to the Young Folks' page to see who won the prize. I wrote one letter before, I saw it published in the paper. Our holidays will soon be over, I am very glad they are, because I like going to school.

This spring when I was going about in the hay loft in the barn I found a hen's nest in a very dark corner. I left her there, and one day I went down to see how she was. As soon as I got in the barn I noticed the hen with five wee chicks. I don't know how they got down because the men say they hadn't taken them down. They must have fallen.

The 24th of July I got up, looking out of the window, and to my surprise I saw the potatoes were froze. When the men made investigation they found that the grain was nearly all frozen. I had a garden of my own. The first thing I did was to see if it was froze, and to my sorrow it was, so I will not have any vegetables to exhibit at the school fair at Sedgewick. If we got rain it could be possible, but we don't get very much here.

We have a black and white cow that has twins, and sometimes they will stray away from their mother, and my little brother and I have to go away down the pasture and bring them back to her. One day they followed my oldest brother's cows away home to his place, about a mile off.

One day my brother just older than myself went over to a place we rented, and when he was on his way home he saw five kittens in a gopher hole so he got off and caught three, but the two were so wild he did not catch them. One day later my youngest brother went with father over and he caught the other two. I must close as my letter is getting long. Your loving friend,

Hannah Olsonberg.



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Save Sugar BY USING

CROWN BRAND CORN SYRUP

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Makes dainty Pie Fillings, Biscuit Mince, Puddings and Custards, and can be used in Bread making.

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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, Teaching, 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

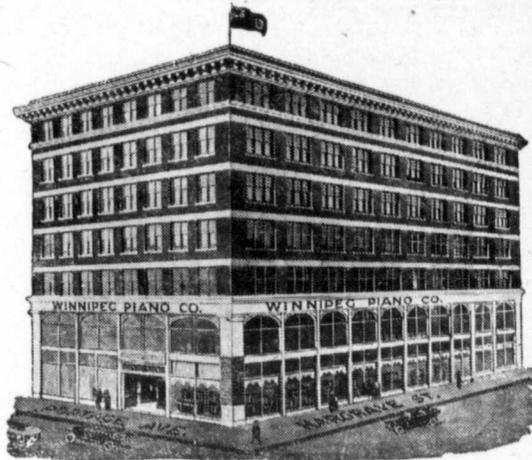
Those who are genuinely interested in the subject may obtain a Free copy of the Book by sending name and address on a postcard to Savory & Moore, P.O. Box 1601, Montreal.

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WESTERN CANADA'S GREAT MUSICAL SUPPLY BASE

THE fine building reproduced on this page is the home of the Winnipeg Piano Company, one of the largest and most completely equipped repositories of high class musical supplies in Canada.

Established in 1904 with only one line of pianos, and backed by many years of experience in the piano trade, the Winnipeg Piano Company has increased its business till it now carries twelve leading makes of pianos, including Steinway, Chickering, Nordheimer, Gerhard Heintzman, Cecilian, Haines, Bell, Lesage, Canada, Sherlock-Manning, Doherty, etc., in all the different finishes of mahogany, walnut and oak; ninety different styles are always kept in stock.

Besides pianos, the company is headquarters for the famous Edison and Columbia phonographs. Buying in large quantities and handling the whole business from the one head-quarters where the organization is under the direct supervision of the proprietors, the many different lines carried, the established quality of the instruments, easy terms and generous treatment explain the phenomenal growth of the company, which is probably the largest music concern west of Toronto, in fact, no other piano house on the continent handles so wide an assortment of high grade and reputable instruments.

Special care is taken with out-of-town instruments, each instrument being personally selected by one of the proprietors just as though the purchaser was choosing it himself on the floor, and as each shipment is made subject to the customer's approval it is probably unnecessary to say that many are the flattering testimonials received by the house as a result of this intelligent and gratifying manner of handling large and important transactions at great distances. Indeed, their extensive piano and phonograph mail order department is at once an important branch of their business and a striking tribute to their pleasing and businesslike methods.

The company occupies what is undoubtedly the finest piano store in the Dominion, as is readily conceded by the trade and visitors from all over the continent; it speaks volumes for their methods and success that they are using over thirty thousand square feet of floor space. The staff of six has now grown till it numbers forty-six, and many are doing their bit at the front.

While the Winnipeg Piano Company are great believers in advertising, they realize that it is even more important to give unquestionable value; hence the cumulative nature of each sale, which almost invariably leads to another sooner or later.

The reputation and financial standing of this house is of the best.



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The New Recruit—"Sir, I have finished feeding the non-ruminant pachyderms. Have you any further orders?"



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Thresh your grain with a New Century Thresher and then you are absolutely sure that you have done your duty as a thresherman—"saved all the grain."

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Once you operate a New Century thresher and see with your own eyes how well it does the work; how it cleans and saves the grain under all conditions, then, and only then, will you appreciate what real thresher efficiency means to you.

You should know more about the New Century and it isn't too late to get these facts. Write us today for catalog and full particulars. It will pay you whether you are in the market now or a year or two hence.

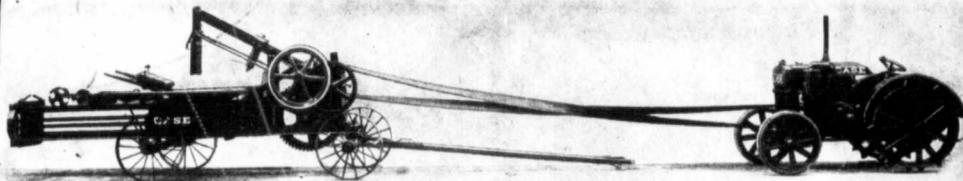
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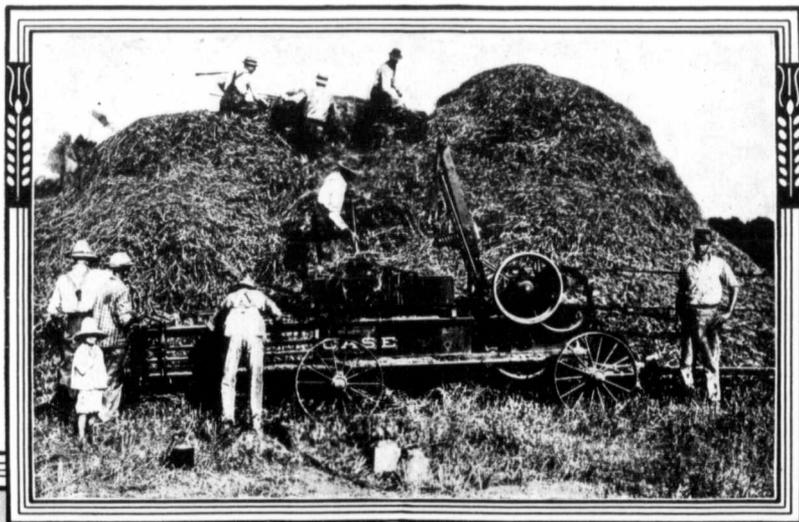
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