

MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL.
ESTABLISHED 1843.

The Only Weekly Agricultural, Horticultural, and Live Stock Journal in the State.

VOL. CL. No. 11
Whole Number 3984

DETROIT, MICH., SATURDAY, MARCH 16, 1918

\$1.00 A YEAR
\$3.00 FOR 5 YEARS

The Business Farmer Balances His Investments

By R. G. KIRBY

WHEN a farmer is developing his business or expanding his farming operations along special lines he is constantly forced to study financial problems and balance his investments so that the cash available will cover all the needs of both the home and the business end of the farm. The skill in placing the investment in the right place often determines the success or failure of the farming business.

There are two extremes which are frequently seen in traveling through the country. The farmer with plenty of skill as a producer may place most of his capital in barns until he has made enough money to build the kind of a house that he desires. On the other hand, the man who has made his money in the city often attempts farming with the idea of making the farm a fine home. He sometimes uses nearly all of his capital in the building of a fine home equipped with modern conveniences and then has very little left for use on the fields and stock barns. In other cases elaborate barns are constructed and they use up so much of the capital that there is little money left for buying the right kind of stock for money-making farming.

Observation will lead a farmer to believe that there is a very good reason for the farming policy in any community. It has usually been built up by the kind of practical experiments which cost money but teach real lessons of value. In developing a farming business in any community it is not unwise to balance the investments in about the same manner as the neighbors have been doing for many years.

The farmer who goes into a dairy section with the idea of being a fruit grower may succeed, due to good markets and other favorable features, but he stands a better chance of success if he goes into the dairy business in a manner similar to the practices of his established neighbors. In the same way the stockman who goes into a fruit section may find that the farmers are raising fruit because their soil possesses

certain qualifications which make fruit growing safer and more profitable. There are many exceptions to this rule, but in general it is considered good judgment to study very seriously the plans and experiences of the neighbors in any locality before branching out with any fads and fancies that look good on the surface. There is certain to be reasons for what they do.

The financial problems of farming are little understood by many men who seek to benefit the farmer with advice. It is only by owning a farm and paying the bills that an educator or college investigator can really come down out of the clouds and sympathize with the men who are producing food and doing it, as many of them are, on borrowed capital. Frequently shop

men and clerks are blamed for not going back to the farm when food is high and farm labor is scarce. These men have families and are practically forced to spend all of their earnings to keep up their homes. By the nature of the business there are few farmers equipped to hire an entire family and the men desire to have their own homes, which is as it should be. However, it follows that these men cannot go back to the farm unless they have the cash to buy equipment and the credit to buy more equipment, and then the experience that will make the investment safe.

Many city people have a mistaken idea of what the farm loan board can do for a farmer. They seem to think that Uncle Sam is now prepared to

present a perfectly nice farming business to everyone desiring to go back to the land. Many farmers are being helped by these loans but just ask practical old farmers about their financial problems and many of them will say, "Where the loan comes from is not as important as what it is to be used for." They have been through the mill of financing a farming business and know that all of the difficulties connected with profitable farming are not over when they are able to obtain a loan. They hold that the cash must be used in nicely balanced investments so that it will improve the farm and the home life and earn a profit and enable the borrower to pay the interest and then pay back the principal. A difference of one or two per cent in the interest is not as important as how the entire one hundred per cent of the loan is to be placed into the farm for better or worse.

A great many of the problems of the farm are financial and the study of cash and credit in relation to a farming business is just as important as the problems of production. In addition it might be said that observation leads the writer to believe that most farmers are very skillful along this line and the average farmer balances his investment quite efficiently between his available capital and the needs of his house and farm because experience has proven that such management is essential to success.

It is a matter of prudence, notwithstanding this experience, for every farmer to carefully weigh each prospective investment in its relation, not only to the whole farm as a unit for the making of money, but to the farm also as a place in which to live. By studying the investment with reference to its various connections the farmer is more certain to put the money to a use that will be consistent with his other efforts and which should naturally bring to him a maximum of satisfaction, and that, after all seems to me to be the real purpose of our being in the great business of growing farm products.

Cooperation on a Progressive Michigan Farm



LET father and son cooperate this year in the production of their corn crops. Begin now. The first step is the testing of the seed, which should be looked after immediately if not already cared for. The following is a convenient method: Several shallow wooden trays may be made and nearly filled with sawdust or fine soil. They may be of any size desired, but a tray about two feet square is perhaps the most convenient one to handle. A cotton cloth the size of the tray is marked off in two-inch squares, each square numbered, and laid

on top of the soil. The ears to be tested are laid out in sets of ten, each ear being given the same number as one of the squares on the cloth. Taking a set of ears, remove six kernels from an ear and place them on the square in the cloth, which bears the ear number. Do this for all the ears. When all the squares on the cloth are filled, the kernels are covered with a second cloth, a third cloth is placed over this, an inch of sawdust or soil is spread on top and thoroughly wet with warm water. In place of the layer of soil, a pad filled with sawdust may be used

to cover the tester. This is somewhat cleaner and more convenient than loose soil or sawdust. When all the trays are filled, stack them in a warm place and wet the top layer of soil in each tray with warm water once a day for five or six days. At the end of this time remove the top cloth and examine the kernels. If the kernels from any ear do not show strong germination, that ear should not be used for seed. By the use of the germination test all ears unfit for seed may be found, thrown out and fed. In doing the testing the boy and the father should be copartners.

The Michigan Farmer

Established 1843. Copyright 1918.

The Lawrence Publishing Co. Editors and Proprietors

39 to 45 Congress St. West, Detroit, Michigan
TELEPHONE MAIN 4525.

NEW YORK OFFICE—381 Fourth Ave.
CHICAGO OFFICE—111 W. Washington Street.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N.E.
PHILADELPHIA OFFICE—261-263 South Third St.

M. J. LAWRENCE..... President
M. L. LAWRENCE..... Vice-President
P. T. LAWRENCE..... Treas.
F. H. NANCE..... Secy.

I. R. WATERBURY..... Associate Editors
BURT WERMUTH.....
FRANK A. WILKEN.....
ALTA LAWSON LITTELL.....

I. R. WATERBURY..... Business Manager

TERMS OF SUBSCRIPTION:

One Year, 52 issues.....\$1.00
Two Years, 104 issues.....\$1.50
Three Years, 156 issues.....\$2.00
Five Years, 260 issues.....\$3.00
All sent postpaid.
Canadian subscription 50c a year extra for postage.

RATES OF ADVERTISING

45 cents per line agate type measurement, or \$6.30 per inch (14 agate lines per inch) per insertion. No advt. inserted for less than \$1.35 each insertion. No objectionable advertisements inserted at any price.

Member Standard Farm Papers Association and Audit Bureau of Circulation.

Entered as second class matter at the Detroit, Michigan, post office.

DETROIT, MARCH 16, 1918



CURRENT COMMENT.

Potato Growers' Meeting. The potato growers of Michigan improved their opportunity to give direct and forceful expression to their views regarding the potato grading rules enforced by the authority of the Food Administration at the annual meeting of the State Potato Growers' Association held at the Agricultural College last week. No emergency has ever before called out so large a representative body of Michigan farmers as attended this meeting. Certainly a more earnest bunch of farmers never met in this state for the protection of their own business interest.

At the first session of the convention they filled the large hall on the upper floor of the Agricultural Building to overflowing. They came with a knowledge born of costly experience with which to combat such theories as might be advanced by the representative of the Food Administration regarding the alleged benefits which would accrue to them from the continued application of the present grading rules. The potato growers who were their spokesmen—as noted in the report of the meeting published in another column—presented facts and figures which could not be successfully combated by the representative of the Food Administration who defended the grading rules as now enforced.

Notwithstanding the determination expressed by the hundreds of growers present to secure relief from the unsatisfactory grading rules now in force, it is a noteworthy fact that there was little if any opposition to the principle of fair grading which would afford the potato trade and consumers a standard grade of tubers of high quality such as would be secured by grading them for size over a one and three-quarter-inch round mesh screen with reasonably rigid requirements as to soundness and quality.

The attitude which will be taken by Food Administration officials following the clear expression of organized Michigan growers on the matter of grading has not yet been announced. It is, however, scarcely conceivable that after the organized representations made by the growers at Lansing

there would be further insistence on the compulsory application of the present grading rules in this state by the Food Administration. Such an attitude would undoubtedly tend to greatly restrict production of potatoes in this state during the coming year.

Granting that the officials of the Bureau of Markets were sincere in their recommendations for the establishment of two standard grades of potatoes, and that the officials of the Food Administration were sincere in the belief that the compulsory adoption of these grades would benefit both producers and consumers, this is a case to which the old maxim may well be applied, "The proof of the pudding is in the eating." In this case the farmers furnished the proof that the enforcement of the established grades is most detrimental to them, and without compensating advantages to consumers. The result should be an early modification of the grading rules along the entirely reasonable lines which the growers' representatives outlined as satisfactory to producers.

While four thousand Farmers to be Exempted. One will be called in the next draft, practical assurance has been given that farm workers will not be included in the draft, which is soon to be announced. This assurance is found in an order recently issued by General Crowder in which local boards are requested to pass the order numbers of men who are completely engaged in the planting or cultivating of all crops, but who are in Class One and within the new quota, and defer their call for the present. This order emphasizes the fact that this step is taken solely in the need of the nation and not for the benefit of any individual, and that while boards shall consider it a grave duty to exercise this power to conserve and increase agricultural production, they are also charged with a duty of observing the conduct of those whose call is so deferred, and that in all cases where the person does not continue to devote his entire time to agricultural cultivation, the board shall forthwith call him to the colors.

This will be welcome news to the farmers of Michigan and the country who are already confronted with such serious handicaps in maintaining the desired program of production.

Since the announcement by President Wilson that the price on the 1918 wheat crop will be fixed at \$2.20 per bushel based on Chicago delivery, or the same as for the 1917 crop, there has been much inquiry as to the intention of the administration in the matter of price fixing on other products of the farm. Food Administration and Department of Agriculture officials have disclaimed any intention to make any further attempts in the matter of price fixing on any farm product.

In this connection there are two well defined schools of thought among farmers as well as among economists. Some believe that food should be produced under contract by the farmers of the country much the same as munitions are produced under contract by manufacturers, in other words, that prices should be established which would insure the cost of production plus a reasonable profit for staple food stuffs of all kinds. Others believe that there should have been no government interference with prices of food stuffs of any kind.

In this connection government officials have pointed out that in the matter of wheat and sugar it became necessary for the government to assume control of distribution, and in that way of consumption, in order to conserve the supply for domestic consumption and furnish to our Allies their absolutely essential requirements for the

carrying on of the war, while in the matter of pork prices a guarantee for the coming year was deemed necessary to stimulate the required production.

Regardless of our views in the matter, it is far better for producers to have a definite idea as to what they may expect along this line in advance of the planting season than to have the matter left for uncertain future action. Practical assurance that further price fixing is not contemplated at the present time have been given. Thus producers may safely exercise their judgment in the matter of a division of their available acreage between different time has been given. Thus producer a reasonable prospect that there will be no marked government interference with the marketing of same.

Depending upon climatic conditions and other vicissitudes to a considerable degree, crop production is at best a sufficiently uncertain business. Government interference with normal marketing may be a necessary expedient in war time, but it should not be inaugurated along any line after the planting season unless patently necessary to the nation's welfare.

From the reports received in response to our request that subscribers notify the Michigan Farmer of excessive prices charged for wheat bran and middlings, it would appear that feed jobbers in this state are taking advantage of the provision in the Food Administration order which permits the sale of mill feeds purchased on previous contract at the contract price plus a profit. In a good many cases it would also appear that millers have contracted the feeds manufactured in their own mills to eastern dealers, and are supplying their home trade as jobbers with mill feeds purchased and shipped in from other states. In replies received there were a few cases which were in direct violation of the order and which have been turned over to the State Food Administrator for immediate investigation.

A direct appeal has been made to Federal Food Administration officials at Washington for an immediate change in rules governing feed distribution, which will make effective the feed prices fixed by the Food Administration for the sale of bran and middlings. Notwithstanding the fact that the price at which bran must be sold by millers in carlots, is fixed at thirty-eight per cent of the price paid for wheat per ton, or \$26.60 per ton where the purchase price of the wheat is \$2.10 per bushel, and fifty cents additional per ton in less than carload lots, many instances have been reported in which bran has been sold at prices ranging from \$40 to \$50 per ton by feed dealers in this state. In the great majority of cases reported the bran sold at these high prices has been purchased from outside the state on previous contract, making these dealers exempt from the present Food Administration ruling. This is a form of profiteering which should be immediately checked. Feed dealers are a convenience in many localities and farmers who purchase feed from them in small lots, will be willing to pay a legitimate advance on the feed price fixed by the government to cover the cost of transportation, actual handling charges and reasonable profit, but there are many cases in this state where farmers are being charged an exorbitant profit above legitimate handling and transportation charges. These cases have been reported to Food Administration officials in the hope of securing an early ruling which will make this form of profiteering impossible.

In the meantime, farmers of every community in which feed must be purchased in quantity, should pool their orders and buy direct in carlots. Michigan Farmer readers are requested to continue reporting cases where exorbitant charges for mill feeds are made.

The government scale of prices fixed for millers is published each week in our Market Department.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The War Department at Washington announces as a military measure, that it will withhold the home addresses of soldiers killed or wounded, or who die from other causes in France. Relatives will be notified, however, as usual.—German raids have been numerous on the western front the past week. These raids were of some magnitude, a few extending over fronts of a mile or more in length. Particularly violent have been the operations against the British on the Ypres front. In two of these raids the Germans occupied some advanced posts, but were later dislodged by British counter-attacks and suffered heavy losses. In one instance, near Houtholst wood, the British not only re-occupied their former line, but advanced 300 yards into enemy territory. A number of raids were also attempted against the French without success, and along the lines occupied by United States troops. The outcome demonstrates that the allied front on the west is fully prepared for the anticipated German offensive, the launching of which is expected at any moment.—In northern Italy another Teutonic drive is now predicted. A large movement of Austrian troops to that front is under way and the transporting of large quantities of supplies to that quarter has been observed throughout the winter months.—In Macedonia the reports show a renewal of activity but no change in front.—The British are constantly moving north from Jerusalem. Last week they advanced their lines over a front of eighteen miles.—Rumania has been obliged to consider terms of settlement with the Central Powers following the peace arrangement between the Teutons and Ukrainians. Finland has also agreed with the Central Powers, but in Greater Russia there appears to be inclination to oppose the invaders.

Revolutionists are active along the upper Yangtse river in southern China. A Japanese gunboat which recently proceeded up the river with officers who desired to negotiate with the natives, was fired upon and obliged to return without accomplishing its mission.

Terms of agreement between Sweden and the Allies have evoked much dissatisfaction in that country. The chief criticism is that the arrangement provides no food stuffs for the northern country where the need is now very great.

Newton D. Baker, Secretary of War, with his staff arrived at a French seaport on an American armored cruiser March 10. Mr. Baker's visit is purely a military one. He will visit the different war zones and give special attention to the sectors occupied and to be occupied by American forces. It is predicted that his visit forecasts the vigorous prosecution of the various military undertakings of the American government.

Admiral Von Diederichs, who commanded the German squadron off Manila during the Spanish-American war, and who at that time clashed with Admiral Dewey over the German officer's disinclination to observe blockade rules, is dead at Baden, Germany.

John Redmond, who for many years had led in the fight for home rule for Ireland in the British Parliament, died March 6, following a severe operation. The funeral was held in Dublin, and the body was laid to rest in Wexford. Fully 30,000 persons are said to have attended the services.

National.

Five persons are known to be dead, several others reported so, many injured, and homes and other property destroyed to the extent of from \$1,000,000 to \$5,000,000 as the result of a tornado which traveled across northwestern Ohio on Sunday night. Most of the loss occurred in small towns and country districts. Much damage was also done to wires in southern Michigan.

At a meeting of the Red Cross officials at New York City it was decided to undertake the raising of \$100,000,000 in a single week for Red Cross work.

It is reported that the federal government contemplates extending military dictation over every interest in all American cities tributary to cantonments which affect in any way the military activities in these camps.

The American "non-sinkable" ship Lucia left New York harbor recently for a trip through the German submarine zone without the protection of a convoy. This maiden trip is a challenge of American ingenuity to the ruthless submarine warfare of the Germans.

A Few Time Savers for Busy Farmers

A USEFUL STONEBOAT.

In order to gather stone off my fields with the least amount of time and labor last fall, while plowing for wheat, I made a stoneboat eighteen inches by twenty-four inches, which I fastened to the frame at the rear of my three-section spring-tooth drag by means of a short piece of chain. While plowing, if a medium-sized stone lifted my riding plow out of the ground, or if the plow threw one out I would stop long enough to place the stone on top of the ground where it would be readily seen.

When dragging I would stop when I came to one of these stones and load it onto the stoneboat and throw the stones against the fence at the end of the row. This gave me a field free from stone, and what time was used in getting them off the field was necessary for my team to get their wind, anyway. This scheme would not work on an extremely stony piece of ground, but does very well for the average farm that has more or less stone being thrown out of the ground each year.

Eaton Co.

J. E. HOUSTON.

HUSKING PLATFORM.

Here is a contrivance that has served me well and is all right. A platform is attached to the side of the wagon box to hold corn shocks for husking by hand. It is especially useful when the husking is disagreeable on account of mud or snow or cold. One does not have to double up like a jack-knife to get down on the ground, perhaps in snow or mud, and extra clothing that may be necessary does not interfere so much. It is quickly attached and removed from the wagon and can be made in ten or fifteen minutes.

The material required is two pieces of 2x4x8, five pieces of 1x4x5, two pieces of wire, two clevises without bolts.

The clevises are to hook over the side of wagon box and the wires to extend down and support the 2x4's which reach under the wagon box and extend out far enough to receive the platform, which is made open to allow snow to fall through. One needs the ordinary bank board on the far side of box to catch the ears and prevent going over.

Jackson Co.

L. B. BENTON.

LABOR-SAVING AT HAYING TIME.

One labor-saving method for haying is to put a horse in the hay mow to tread hay, and you can also put more hay in the mow. A colt, if kind to handle, will do nicely. If broke to ride, the boy can get some adventure out of it riding the first aid. Those having Shetland ponies can utilize them. Leave an inclined place at one side of mow for the faithful friend to go up and down. This may be filled at the finish.

Genesee Co.

E. HOLLENBECK.

CORN MARKER.

I have a combination device for marking corn and potato ground. It marks four rows, three feet eight inches apart, each time across the field. It is made in three sections, with middle sections four feet long having runners or markers underneath. The end sections are each three feet eight inches long with runner or marker underneath the outside end of each. The sections are made of inch and a half boards held together with eight-inch strap hinges, having two hinges at each connection.

I take the pole from my spring wagon and attach to this marker and use two horses. I stand on the marker in

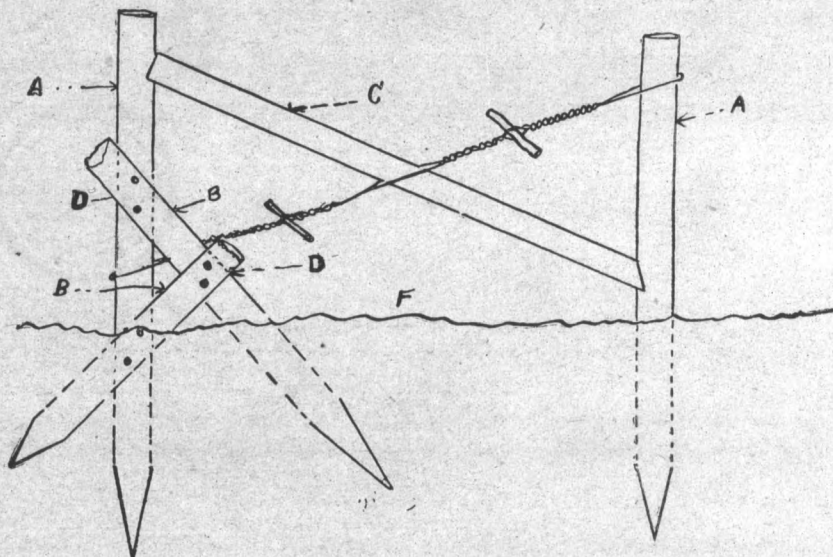
If you have as good or better ideas than any than appear in the following short and suggestive articles, the editors would like to have you send them a brief description for publication, as these men have done.

the middle and make straight rows by driving to stakes, having one at each end of field and one in middle of field. By having it made in sections it will make a mark even where the ground is not perfectly level. In going to and from the field I lay the end sections up over the middle one.

To mark potato land with rows thirty-two inches wide I placed another set of runners on top of this marker as it lay on the ground ready for marking

Wisconsin, with some late improvements, works to perfection so far as keeping the cows clean is concerned. In place of the stationary mangers above and below, a movable box is used, which should be about twelve inches deep, twenty inches wide and twenty-eight inches long. Attached to each end is a small rope which holds the box forward so that it cannot get back under the cow. It also allows the box plenty of play so the cow can nose

An End Post Anchor



Device for anchoring an end post in No. 60 spikes as shown. Battered ends, swampy ground, or where a gate is to be hung, and not convenient to tie end post back. A A are two posts; B B one post split, driven and spiked with it very effective. G. D. Lockwood.

corn. These runners or markers are thirty-two inches apart and I have five of them so I can mark five potato rows in driving across the field. I drive it to the field as a corn marker, then take out bolts at hitching attachment and turn the thing over and attach the spring wagon-pole again, and I have my potato marker.

Calhoun Co.

J. W. COVERT.

IMPROVED COW STALL.

The model cow stall invented some years ago by Ex-Governor Hoard, of

the box forward out of her way when she wants to lie down.

The overhead manger that projected back over the cow's head made it very inconvenient to hitch the cows. Where the overhead manger is used, this difficulty may be overcome by putting a scantling, say 2x4, about six or eight inches back of the bottom of the manger. This stops the cow far enough back to allow convenient hitching with a cow chain. For a large cow, scantling should be six feet from gutter and three feet from floor. It should be just high enough so when the cow rocks

forward or back on her knees getting up or down, it will clear above her shoulders, allowing her to get forward onto a clean bed. By moving the scantling forward or back you can adjust the cow so she will stand with hind feet between the 2x4 and the gutter. Should she back down into gutter, touch up her heels lightly with a whip a few times, and you will have no further trouble.

The arrangement of the model stall with 2x4 set on edge each side of cow is fine to make her lie just where she belongs, and the 2x4 set on edge across stall about six or eight inches from gutter prevents her lying down in the dirt. These 2x4's hold the straw, so there is no excuse for her not having a clean, comfortable bed.

Allegan Co.

V. P. SMITH.

A FEW PRACTICAL SUGGESTIONS.

The demand for men in munition plants and other factories and in all industries will be so great that we should study this problem of farm help and adopt new methods, and plan to substitute machinery and horse flesh for human muscle in doing farm work.

First, I would say that the manure spreader must not be depended upon to spread the manure next spring, but the manure had better be taken directly from stables to fields in winter. If snow is too deep to use spreader, it can be drawn out by sleighs or boat. This will enable us to have one of the first steps to spring work completed.

In the field better work can be done with a three or four-section spring-tooth harrow than with the two-section one. One man can drive four or six horses as easily as two, with harrow cart attached. With four good horses and a three-section harrow one man can harrow at least fifteen acres per day. Where the ground is to be rolled I have found that I can attach the end of my roller tongue to an even-er with a clevis and thus one man can harrow and roll at the same time.

Most farmers seed down with some spring crops, thus sowing grain and seed with grain drill. In order that the small grass seed is not sown too deep it is best to sow seed behind the hose or disks, then follow up with leveling harrow to cover.

By bolting two pieces of 2x4 to the tongue of drill, thus straddling spout of eleven-hoe drill and attaching the leveling harrow behind with four horses on drill, one man will do drilling and harrowing at one time, thus taking two men's place.

In cultivating, in order to do a good job each row must be straddled with shields so adjusted that loose dirt can run in around roots of beans or corn so as to smother small weeds.

If we have a large cultivated crop this year it would pay to secure one of the various large cultivators now on the market which will cultivate three rows of beans or two of corn at once.

If modern hay machinery is not owned it would be well to make arrangements with some neighbor to get machinery together and work together in taking off hay.

Now, these are just a few suggestions which have helped me, so I am passing them on and hope to receive many others through the columns of the Michigan Farmer.

Huron Co.

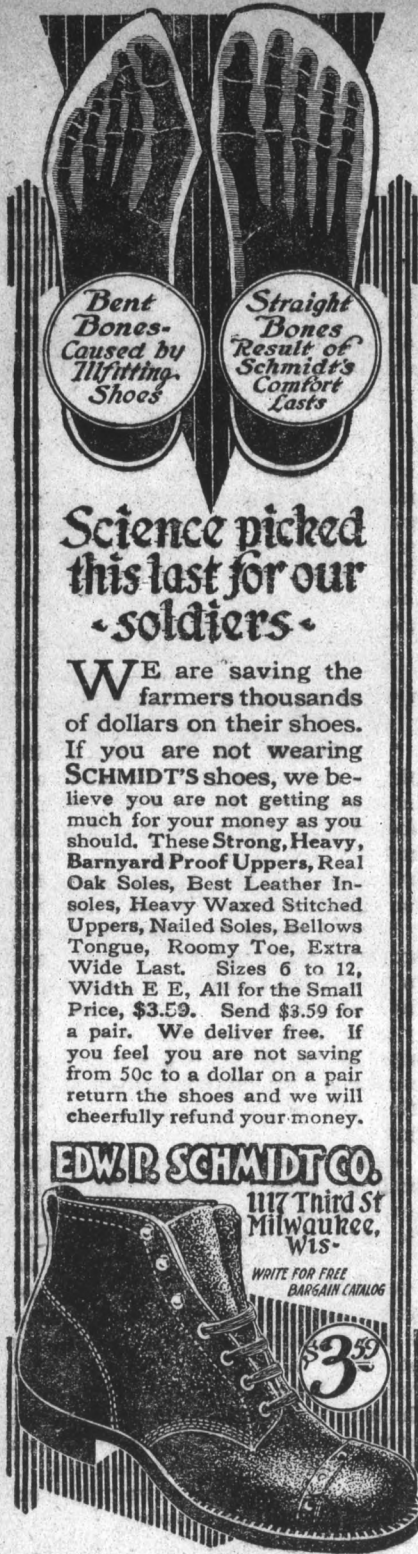
J. T. TODD.

POULTRY DRINKING CUPS.

Some time ago I saw an article in the Michigan Farmer on home-made water fountains for chickens. It directed to make a hole in a crock near the top to fill with water and place the top end in a pan. I think if a small hole was made in a jug near the bot-



In Constructing the Quarters for the Sheep on this Northern Michigan Farm Much was Gained in Comfort by Simply Locating the Structure Under the Protection of the Hill.



Bent Bones—Caused by Illfitting Shoes

Straight Bones—Result of Schmidt's Comfort Lasts

Science picked this last for our soldiers.

WE are saving the farmers thousands of dollars on their shoes. If you are not wearing **SCHMIDT'S** shoes, we believe you are not getting as much for your money as you should. These **Strong, Heavy, Barnyard Proof Uppers, Real Oak Soles, Best Leather Insoles, Heavy Waxed Stitched Uppers, Nailed Soles, Bellows Tongue, Roomy Toe, Extra Wide Last.** Sizes 6 to 12, Width E E, All for the Small Price, **\$3.59.** Send \$3.59 for a pair. We deliver free. If you feel you are not saving from 50c to a dollar on a pair return the shoes and we will cheerfully refund your money.

EDWARD SCHMIDT CO.
1117 Third St.
Milwaukee, Wis.
WRITE FOR FREE BARGAIN CATALOG

\$3.59

Works Like a Hoe

Covers 8 Acres A Day

It does as good work as you can do with a hoe—it cuts every weed—none can dodge it—not even Canadian Thistles—Keeps the surface in condition to readily absorb rain and produces a mulch or dirt blanket of fine soil which prevents the escape of soil moisture. One trip to the row, whether narrow or wide.



With one horse The Fowler does as much work as you can do with a two horse cultivator—and better work—because it cultivates shallow—has no prongs or teeth to destroy or disturb the crop roots. You can work right up to the plant with a Fowler. By removing plow foot you can cultivate astride the row.

The Light Draft Fowler is a time saver and money maker. It will pay for itself many times both in the saving of labor and horses and again in increased crops.

In wet weather the Fowler can be used very soon after a rain on account of running close to the surface and it covers so much ground in one day that weeds and grass are kept under control.

It's the cultivator for corn, sugar beets and beans and truck crops planted in rows.

Write today for catalog which fully explains The Fowler—The Progressive Farmer's Cultivator, that covers 8 acres a day—it's free.

HARRIMAN MFG CO., Box 514 Harriman Tenn.

Stop and Think. Now is the Time to Get Your Truck.

Drive your Ford into our place of business and have it changed over into a guaranteed 1½ ton Smith-Form-A-Truck for \$350 while you wait.
SMITH-FORM-A-TRUCK SALES CO.,
Ralph F. Snelder-Distributor, 346 East Jefferson Ave., Detroit, Mich., Cherry 4023.

tom, it would be much better than the crock. There is a law of nature involved in about all chick water fountains that I find quite a large per cent of the human race do not know about, and I did not until I was over sixty years old. It is shown by filling a bottle with water and inserting the open end in water, when the water will not run out of the bottle. I make much use of bottles for chick fountains, simply invert the bottle so that the open

end will be in water in a small or large dish. The bottle can be held in place in many ways, as simple as Columbus's way of making an egg stand on end by breaking and flattening the shell. As this is getting a little long I will not tell of all the ways of holding the bottle in place. I write, thinking it may do some good, or it may cause someone to improve their chicken utensils.

Washtenaw Co.

P. CRIPPEN.

Potato Growers' Meeting

THE meeting of Michigan potato growers held at East Lansing, March 7-8, was a leading feature of Farmers' Week at the college. It was the fourth annual convention of the Michigan State Potato Growers' Association and prospects of a scrap over present grading rules excited interest that filled to overflowing the large convention hall, top floor of the Agricultural Building. It was the expected that happened this time and the fight started early Thursday afternoon and continued throughout the long opening session until six o'clock. On the one hand there were hundreds of Michigan farmers mad clear through because of the potato situation, and on the other hand there was H. P. Miller, of the United States Food Administration, charged with chief responsibility in fixing the United States Potato grades. It was a stormy time.

Dorr D. Buell, of Elmira, president, called the meeting to order and introduced as the first speaker, Professor Taylor, of the Wisconsin Agricultural College, the subject being, "Cost of Production of Potatoes." In part he said: "What we want is cost of production, plus a fair profit. The manufacturers are studying costs—why not the farmers? It is hard to fix on prices because of the great spread in costs of production. It is difficult for the man producing at low cost to agree with the one producing at high cost. Again, it is very difficult to figure cost on a specific crop. Your farm is made up of a series of crops and your oats and clover and other crops in the rotation interlock, so there are joint costs to figure. No standard system of book-keeping will answer the needs of farmers. You keep a team and your own labor must be figured, not for one crop but for a series of crops. Really it is not worth while to find the specific cost of a crop, because you can't make use of it as a basis of price fixing. Comparative costs for comparative profits is what we are looking for, and this is a rather simple matter. We can use relative profitableness as a price basis."

So Prof. Taylor went on, and while it was interesting the big audience began to exhibit anxiety to get at the main subject at hand. Some of the late comers evidently mistook Prof. Taylor for Mr. Miller, and they pried him with questions, such as, "How about the potato screen?" He was the target of many shafts intended for Mr. Miller, but remained serene through it all.

Mr. Miller's Presentation.

Mr. Miller was then introduced and profiting by the experience of Prof. Taylor he requested that questions be withheld until he was through with his talk. It was not a set speech and neither did it set well with a great many of the farmers present. His repeated admonition at the outset that "our country is at war" and therefore we must be patriots, touched some sensitive spots. "We know this as well as you do," was the reply. "Some of us have sent our only sons, who are just now landing in France. We will lay down our very lives for our country."

Mr. Miller had no elaborate defense for the new grading rules. He did speak of the great waste that comes from shipping potatoes that are worthless at destination, of satisfaction with the rules shown in other states and of

the advantages of fixed grades and a trading basis. He said that he did not make the rules but suggested that they be adopted. The rules were the result of more than three years of investigation on the part of the United States Bureau of Markets. They were approved later by the United States Food Administration, and jointly recommended by the Department of Agriculture and the Food Administration. It was stated that these rules are more of a burden to the dealer than to the grower. The advantages of standardization were shown in the ability to quote carlots by wire and it was stated that Michigan has already reaped advantages of the grading system. Mr. Miller said he had data showing that No. 2 grades are being sold and that Michigan potatoes are holding their own with other states in the outside markets.

Then it became an experience meeting and some of the testimony became so warm that Secretary Gibson, of the West Michigan Development Bureau, seeking to pour oil on troubled waters, called for peace and for united effort in the one big job of smashing the Huns.

The Growers' Speak.

The secretary of the Manton Potato Growers' Association said the people of his section depended almost entirely on potatoes and the dairy industry. He believes in grading and was convinced that while the local market was down to seventy-five cents per one hundred pounds when he left, the tubers would have been selling for forty cents without grading rules. He favors one grade, over an inch and three-quarter screen. A. M. Smith, of Lake City, said he put his potatoes over the screen and one-third of them graded as No. 2's. He thought it strange that the food administration can't understand that farmers are opposed to the present grading rules.

L. A. Siple, of Greenville, stated that the grading system had defeated its own object by trying to market culls as No. 2's. It is forcing us to do the thing for which we were condemned—that of putting culls on the market. Mr. Siple said that a Greenville paper has reports from 299 farmers in that territory who would raise 2,853 acres of potatoes under normal conditions but will plant only 1,143 acres if no relief is given in the grading rules. A questionnaire in a Wexford county school district shows prospects of only fifty-two acres planted this year as against 300 acres last year. "We will raise beans, sugar beets and other stuff," says Mr. Siple, "but unless you give us relief we cannot raise potatoes."

New Officers.

The potato association elected the following officers at Friday's session: President, A. M. Smith, Lake City; vice-president, Melville McPherson, Lowell; secretary, L. A. Siple, Greenville; treasurer, Dorris D. Buell, Elmira; executive committee, the officers and the following representatives of potato growing sections: C. R. Estes, Grand Traverse county; Clarence Oatley, Antrim; J. D. Mulder, Missaukee; J. C. Redpath, Kalamazoo; Alva Wood, Osceola; Jason Woodman, Van Buren; D. H. Fisher, Montcalm; Wm. Bishops, sr., Wexford; Roger Southwick, Oceana; Wm. Snyder, Isabella; J. G. John-

son, Tuscola; E. E. Thompson, Mecosta; Miles P. Morton, Cass; James Cox, Lapeer; O. W. Braman, Kent; F. H. Daniels, Ionia; David E. Burns, Benzie.

A. M. Smith, president elect, of Missaukee county, has a large farm near Lake City, and has a herd of registered dairy cattle. He was a prominent Presbyterian minister for twenty years, but six years ago resigned his charge at Mattoon, Ill., on account of ill health and invested in a Michigan farm. He is well again and is president of the Missaukee Institute and Potato Growers' Association.

A committee on revision of by-laws was appointed and it was the sentiment at the Lansing meeting that the association should be confined strictly in the future to growers. Resolutions adopted were as follows:

Resolutions.

"Whereas, the United States is engaged in a war that involves the freedom and democracy of the world, the preservation of our nation and safety of our homes, we fully realize that its successful prosecution and the welfare of our boys over seas depend upon the united strength of the nation's man power and the coordination of its commercial and agricultural interests. Farmers have heeded the pleas of President Wilson that they put forth their utmost efforts to increase the food products and supply the wants of our soldiers and allies, and

"Whereas, in complying with the pleas of the federal government the farmers last spring planted the largest acreage of potatoes in their history, paid the highest prices in years for seed, labor and fertilizers, tended the crop through a most discouraging season and because of circumstances outside of their control secured a most disappointing yield, and

"Whereas, when farmers took potatoes to market expecting that they would be graded and sold as in former years they were required by the buyers to conform to a grading system, which in practical operation produced a so-called No. 2 grade having little if any market value, but containing twenty-five to thirty-five per cent sound, edible potatoes that in previous years had found a ready market, and

"Whereas, grading rules so suddenly promulgated were not extended to include all potato growing sections of the country, neither were any established rules or requirements demanded of retail dealers or distributors, thus enforcing grading rules on farmers without following the product to consumers in an effort to create a demand for such grades, and

"Whereas, the result has been great financial losses to farmers, paralyzing the movement of the crop during the normal marketing season, resulting in over-abundance at source of supply and shortage at consuming markets, forcing farmers to hold their crop of No. 1's for much higher prices than would have been necessary had they been able to place on the market the usual percentage of their crop, and

"Whereas, the lack of a market for No. 2 stock has resulted in enormous and criminal waste of precious food, in direct opposition to the teachings of the food administration, and

"Whereas, the President has said, 'no law can last long which does not recognize and accept the principle that governments derive all their just powers from consent of the governed, and

"Whereas, the farmers have been arbitrarily compelled by virtue of the very nature of marketing machinery controlled by organized shippers of the state to have their potatoes graded in a manner contrary to their wishes and detrimental to their interests, with no voice in the matter whatsoever, therefore,

"Be it Resolved, that we, loyal citizens and farmers of the state in convention assembled do hereby pledge our utmost efforts in prosecution of the war and in production of food stuffs, and were the present method of grading potatoes in any measure calculated to assist us in our work of producing food for the nations, or were it of direct benefit to those most vitally concerned, the producer or the consumer, we would gladly abide by its provisions.

"We further protest against the indiscriminate waste of food resulting from the double grading of potatoes and so request the immediate abolishment of all obnoxious rules governing the production of food that will in any way have a tendency to reduce such production, and that the government do all in its power to assist the farmer in his efforts.

"Be it further resolved that we particularly condemn the double grading (Continued on page 350).

The Days Between

By R. D. BAILEY

WELL begun is half done." Show me the farmer who does not dislike to be bothered with repairs and "puttering," after field work with the team has begun; and, too, show me one for whom it is not too expensive to do odd jobs, though they are necessary, while the team stands idle.

Yet, there is a multitude of things that need to be done if the season's work is to progress smoothly. Many farmers, through lack of planning, foresight and timeliness, simply have to take valuable time to do it, in the midst of the season's work, what could have been done during the time less valuable.

During cold, raw days the farm shop is especially valuable. Here, comfortable with a fire made of cobs, bits of broken boards, trimmings from trees, and other rubbish, the farmer can sharpen his saws, planes, drawshaves, bits, augers, axes, hatchets, and mowing machine knives, etc., so that they are ready for effective work at an instant's notice.

This is a good time to sharpen the butcher knives, paring knives, and shears for his wife. Repair, black and oil harness. Potato crates should now be mended, and cup-boards and shelves for the house, and other household conveniences built in the shop.

With the house warmed with its stoves, this is the best time of the year to make household repairs and interior alterations before the spring housecleaning.

Test seed corn. It has been stated at the Agricultural College that, by testing his seed corn, a farmer can make fifty dollars a day, for the time consumed in testing, and thus put himself into the class with civil engineers, physicians and lawyers, as an earner. Where seed germination tests show a low per cent of good seeds, better seeds should be purchased, if possible, to secure them; if not, then the amount of seed sown or planted should be increased to insure a better stand.

As the weather becomes warmer, and the farmers can work bare-handed, the hay track, fork, and rope can be inspected, and stalls and stable floors repaired. There will usually be plank worn thin in floors; manger fronts or partitions gnawed by horses; feed and salt boxes coming to pieces, or gnawed; partitions partially kicked to pieces. That "a stitch in time saves nine" can be attested by thousands of farmers who failed to take that stitch.

Take the hay rack and the wagon box into the shop and repair and paint them, or make new ones.

Restore missing handles to tools.

Put in window lights. Put a fender in the pen where the sow is to farrow, and save pigs and dollars. Make some gates in the shop if you do not buy them.

Take drags to blacksmith shop and have teeth sharpened. Take the cultivator teeth, too, if it is cheaper to have them sharpened than to buy new ones. Have the grub hoe sharpened, and a new point drawn on the crowbar. Make a load for the blacksmith shop, while you are at it, and throw in all chains that need repairs. If it needs repairs, hitch the grain drill behind the same wagon.

Buzz up the pole wood. Split and pile all wood, so it will dry out in these spring winds. It is a mark of an improvident man to have to cut dribblets of wood morning and night, after field work has begun, and the feelings of the wife had better be imagined than expressed.

While fence posts are frozen in they can best be cut off neat and even. This improves the appearance of the field or farm like cutting a man's hair and giving him a shave.

Barbed wire and woven wire can be stretched while the ground is still frozen. Established fences, on which the wire has sagged, can be tightened. After the frost is out of the ground, but fields are too soft to be traveled, post holes can be dug and new fences built.

Build one or more portable hog-cots of the A-type. Build a stock-loading chute. Make some chicken coops. Repair the hen yard. Dig some shade trees in the woods. Clean chimneys and work soot in around rose bushes, the shrubs and perennials of the hardy border, and around the pieplant.

Bring home some brick to top out old chimneys, and to build new ones where a stove pipe has been used. Hundreds of houses in this state have been burned, and their owners reduced to distress, through shiftlessly depending on a rusty stove pipe stuck through a roof. Don't go through another winter on a stove-pipe basis. "Do it now."

Sell surplus horses, for the demand is at its best at the approach of spring. Buy early if you have to buy.

Engage your hired man.

Make a hot-bed.

Take an inventory.

STUCCO BARN.

I am planning on building a one-story low barn 60x30 feet. I already have my silo in place. Have any of your readers had any experience with a stucco or plastered barn, and approximately, what would it cost?

Kalamazoo Co. H. S.

Stucco has not come into general use for barn construction. It is probably not as satisfactory for this type of construction as it is for protecting the house. In the first place the siding of a barn is subject to rougher use than is that of the house. It is under greater strain due to wind pressure, due to the pressure of hay, and to jars and striking with forks and other tools.

Its cost would probably be from one-half more to twice as much as wood construction.

Where stucco is used it is usually made in the proportion of one part of cement to two parts of sand, which is screened through quarter-inch screen. To this is added about one-tenth part of hydrated lime to make the stucco work more smoothly under the trowel.

The most satisfactory stucco is that placed on hollow block walls and which gives permanent construction. Both metal and wood lath are used to some extent. Metal lath, unless well clinched and covered on the interior, are likely to corrode and rust while wood lath shrink and swell.

The high price of metal lath and the high cost of cement would make this type of construction quite prohibitive at the present time.

Mich. Ag. Col. H. H. MUSSELMAN.

THAWING FROZEN WATER PIPES.

I have been thawing out some of my water pipes very handily this winter and thought the method might be new to some of your readers, so here it is: I use a small pipe that will slip inside the one to be thawed and fix a nozzle on one end. Insert the other end in frozen pipe against the ice and pour in boiling water, advancing the small pipe as ice melts. Ice will not last long as far as the small pipe can reach. Of course, you can not go beyond an elbow. If the pipe to be thawed is horizontal I use an elbow on the small pipe so as to have a perpendicular pipe to pour into. The perpendicular pipe should be three or four feet long to give force to the water.

Jackson Co. SUBSCRIBER.



"No, sir—
We'll have her ready the day after tomorrow"

YOU wonder why so much time is necessary to clean the carbon out of the combustion chambers?

As a matter of fact you were lucky in meeting a mechanic who really knew his business. It took him several hours to scrape out hard carbon which was caked behind the piston rings. Then he had to clean some more carbon out of the oil leads which carry oil to the bearings. To reach those parts he had to take down the engine.

What caused the trouble?

Largely incorrect lubrication. You used an oil of incorrect body or low quality. It supplied only a partial piston-ring seal.

So the oil reached the combustion chambers in excessive quantities and burned up. That meant extra carbon deposit.

Part of the carbon was forced down past the pistons on the power strokes. Some got in behind the rings and caked there. And some went down into the crank case and churned in with the oil.

Finally this carbon content choked up the oil leads.

* * *

CARBON TROUBLES have been largely minimized by advances in engine design.

But carbon in bearings, oil leads and piston-ring recesses is still common among motorists who buy oil carelessly or at low price per gallon.

Why do users of Gargoyle Mobiloils find comparative freedom from all kinds of carbon troubles?

Because the Vacuum Oil Company's engineers have analyzed the mechanical conditions and lubricating requirements of every make and model of engine. They have specified the correct grade of Gargoyle Mobiloils for each engine in a Chart shown in part on the right.

The correct grade of Gargoyle Mobiloils insures an efficient piston-ring seal, thus preventing excess oil working into the combustion chambers and preventing the products of incomplete combustion from being forced past the piston rings into the crank case.

Write for 56-page booklet containing complete discussion of your lubrication problems, list of troubles with remedies and complete Charts of Recommendations for Automobiles, Motorcycles, Tractors and Motor-boat Engines.



Mobiloils

A grade for each type of motor

In buying Gargoyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container. If your dealer has not the grade specified for your car, he can easily secure it for you.

VACUUM OIL COMPANY
New York, N. Y., U. S. A.

Specialists in the manufacture of high-grade lubricants for every class of machinery. Obtainable everywhere in the world.

Domestic Branches:

Detroit	Chicago	Minneapolis
Boston	Philadelphia	Pittsburgh
New York	Indianapolis	Des Moines
Kansas City, Kan.		

Correct Automobile Lubrication

Explanation: The four grades of Gargoyle Mobiloils, for engine lubrication, purified to remove free carbon, are:

Gargoyle Mobiloil "A"
Gargoyle Mobiloil "B"
Gargoyle Mobiloil "C"
Gargoyle Mobiloil "Arctic"

In the Chart below, the letter opposite the car indicates the grade of Gargoyle Mobiloil that should be used. For example, "A" means Gargoyle Mobiloil "A," "Arc" means Gargoyle Mobiloil "Arctic," etc. The recommendations cover all models of both pleasure and commercial vehicles unless otherwise noted.

This chart is compiled by the Vacuum Oil Company's Board of Engineers and represents our professional advice on Correct Automobile Lubrication.

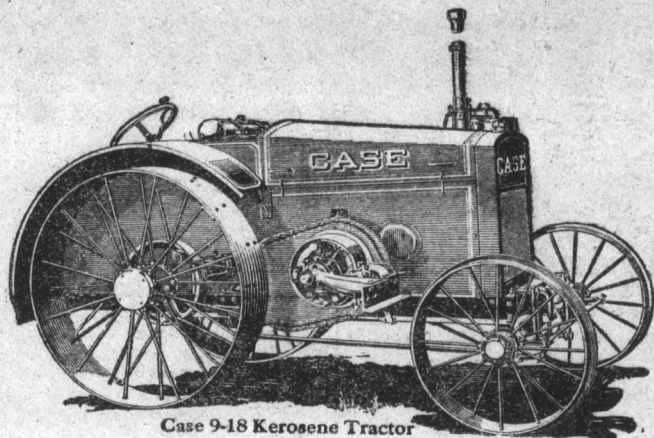
Model of	1917		1916		1915		1914		1913	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
CARS										
Abbott-Detroit.....	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	A	Arc
Allen.....	A	Arc	A	Arc	A	Arc	A	Arc	A	A
Apperson.....	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Auburn.....	A	A	A	A	A	A	A	A	A	A
Autocar.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Briscoe.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Buick.....	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Cadillac.....	A	A	A	A	A	A	A	A	A	A
Case.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Chalmers.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Chandler.....	A	A	A	A	A	A	A	A	A	A
Chevrolet.....	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	A	A
Cole.....	A	A	A	A	A	A	A	A	A	A
Cummins.....	A	A	A	A	A	A	A	A	A	A
Dart.....	A	A	A	A	A	A	A	A	A	A
Dodge.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Dort.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Empire.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Federal.....	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Fiat.....	B	B	B	B	B	B	B	B	B	B
Ford.....	E	E	E	E	E	E	E	E	E	E
Franklin.....	A	A	A	A	A	A	A	A	A	A
Grant.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Hal-Twelve.....	A	A	A	A	A	A	A	A	A	A
Haynes.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Hudson.....	A	A	A	A	A	A	A	A	A	A
Hupmobile.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Jeffery.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Kearns.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Kelly-Springfield.....	A	A	A	A	A	A	A	A	A	A
King.....	A	A	A	A	A	A	A	A	A	A
Knight.....	A	A	A	A	A	A	A	A	A	A
Knight.....	A	A	A	A	A	A	A	A	A	A
Lincoln.....	A	A	A	A	A	A	A	A	A	A
Lippard-Stewart.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Locomobile.....	E	E	E	E	E	E	E	E	E	E
Marmon.....	A	A	A	A	A	A	A	A	A	A
Maxwell.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Mercer.....	A	A	A	A	A	A	A	A	A	A
Mitchell.....	A	A	A	A	A	A	A	A	A	A
Moline.....	A	A	A	A	A	A	A	A	A	A
Moon.....	A	A	A	A	A	A	A	A	A	A
National.....	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	A	A
Oakland.....	A	A	A	A	A	A	A	A	A	A
Oldsmobile.....	A	Arc	A	Arc	A	Arc	A	Arc	A	Arc
Overland.....	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Packard.....	A	A	A	A	A	A	A	A	A	A
Palmer.....	A	A	A	A	A	A	A	A	A	A
Patton.....	A	A	A	A	A	A	A	A	A	A
Pearce.....	A	A	A	A	A	A	A	A	A	A
Pierce-Arrow.....	A	A	A	A	A	A	A	A	A	A
Pontiac.....	A	A	A	A	A	A	A	A	A	A
Regal.....	A	A	A	A	A	A	A	A	A	A
Renault.....	A	A	A	A	A	A	A	A	A	A
Reo.....	A	A	A	A	A	A	A	A	A	A
Richmond.....	A	A	A	A	A	A	A	A	A	A
Saxon.....	E	E	E	E	E	E	E	E	E	E
Selden.....	A	A	A	A	A	A	A	A	A	A
Simplex.....	A	A	A	A	A	A	A	A	A	A
Stearns-Knight.....	A	A	A	A	A	A	A	A	A	A
Studebaker.....	A	A	A	A	A	A	A	A	A	A
Stutz.....	A	A	A	A	A	A	A	A	A	A
Valve.....	A	A	A	A	A	A	A	A	A	A
Westcott.....	A	A	A	A	A	A	A	A	A	A
White.....	A	A	A	A	A	A	A	A	A	A
Willys-Knight.....	A	A	A	A	A	A	A	A	A	A
Willys-St.....	A	A	A	A	A	A	A	A	A	A
Winton.....	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc

YOUR TRACTOR

also may be lubricated efficiently with Gargoyle Mobiloils. On request we will mail you a separate Chart specifying the correct grade for each make and model of tractor.



CASE



Case 9-18 Kerosene Tractor

A Tested Tractor Is Best and Cheapest

Most farmers know that. Most farmers know how costly it is to experiment.

Case has an experience of 76 years in the power-farming field, and this experience has taught us that our policy of selling only tried and true products is right.

Case Kerosene Tractors have been in the process of development for 26 years, and when you buy one you become the owner of a tried and proven tractor. You do not have to experiment.

From official tests, and from records kept by thousands of farmers owning Case Tractors, it is now an established fact that Case Tractors are most economical in the long run. The cost of fuel per acre is low and upkeep at a minimum. We will be glad to furnish you the evidence to prove these facts.

Case Kerosene Tractors come in four sizes: 9-18, 10-20, 12-25 and 20-40. So there is a size for every farm.

We have a very interesting catalog regarding Case Kerosene Tractors which will be sent free upon request. It contains a lot of valuable data in addition to giving you an opportunity to know the leading tractors.

J. I. CASE THRESHING MACHINE CO., Inc.

(Founded 1842)

921 Erie St., Racine, Wisconsin

Send for This Descriptive Printed Matter—All Free

Below are listed the different series of booklets and folders. Tell us which interest you.

**FREE
Books**

- | | |
|----------------------|------------------|
| 1—Kerosene Tractors | 5—Hay Balers |
| 2—Steam Tractors | 6—Silo Filler |
| 3—Grand Detour Plows | 7—Road Machinery |
| 4—Threshers | 8—Automobiles |

Or, if you wish, ask for our General Catalog, describing the entire Case line. It is free.

**Write
Today**

**TELLS HOW
TO SAVE CROPS**

Get more profit from your crops. Prevent destruction from bugs, insects and disease. This book sent FREE tells how; also shows complete line of Hurst Sprays sent on **TEN DAYS FREE TRIAL** with three ways to pay and big money saving offer. HURST spraying is positive in results. 37 styles to select from; you get the exact type of sprayer best for your needs. Tell us what you have to spray and how much, we will give you valuable help. Write today. HURST MFG. CO., 127 Hurst St., Greenwich, Ohio.

**WHY
HOW
AND
WHEN
TO SPRAY** SENT FREE



**Send
For
This Book**

and let us show you what you can save on that new range—or any other style stove, heater or furnace. Deal direct with manufacturers and economize. Getting "A Kalamazoo Direct to You" has saved millions of dollars for stove buyers. We pay freight—quick shipment—cash or easy payments—positive guarantee. Ask for Catalog No. 113.
Kalamazoo Stove Company, Mfrs., Kalamazoo, Michigan

**How Much
Can You
Save?**

The Farmer Will Do His Part

IT is more than interesting or amusing to read what some people say who seem to know very little about the American farmer, as to the part he is to take in the production of extra food under the conditions which the farmer finds himself in today.

Some city people even who had war gardens last year, are beginning to realize that there is something to farming, that it is a sort of business, that crops don't grow unless you have favorable seasons, that crops don't grow unless they are properly planted and cared for and that they also must be harvested and that the farmers don't have as easy a time as some of them imagine. In fact, they are beginning to realize that farming is a business and that only a real farmer can produce crops in a commercial way, and supply the world with food.

The city consumer has been told time and again that the farmer had to work harder for what he got out of his business than almost any other man but they did not seem to believe it. If you compare the farmer's lot with the laboring man's lot in the city, you will find that the laboring man has more leisure, he only has to work a given number of hours a day, he assumes very little responsibility, he has all of the conveniences and luxuries and entertainment of the city. The farmer must put in more hours besides the day's work in the field. He must do all the chores in the morning before he goes to work. This isn't figured as a part of the day's work but it must be done. The city business man wouldn't think of doing such things before he goes to the office. But the farmer must do this and then do his day's work besides.

This war, in spite of its horror, is doing a lot of good in the world. It is bringing us all closer together; we begin to think of the other fellow and what he has to do and what he ought to do. Men who never thought about the farmer's lot before are beginning to realize that when the world demands an increased production of food and at the same time the country takes many of the best laborers off the farms, the farmer is up against a serious proposition. Yet this extra food must be produced and this extra food will be produced.

Whether the farmer gets prices proportionate with those received by the manufacturer, or as good wages as the laboring man does, you can depend upon it that the farmer is not going back on the country in this crisis. He is going to produce all the food that he possibly can. If it is necessary, he is going to live as his forefathers did who cleared up this country. They were provided with none of the modern conveniences whatever. They cleared up the forests, grubbed out the stumps, ditched the land and lived on a very meager bill of fare. In many instances, the pioneer farmers in this country didn't have white wheat flour for several months at a time, but lived upon corn meal mush and johnny cake. If it is necessary to do that again in order to furnish food for the people of America and for the Allies in Europe, our farmers will do it and they will do it because they have traditions that they are proud to live up to.

The American farmer is going to do his part. The world needn't worry about that. The American farmer never has made very much out of farming and probably he never will. The conditions governing farming are so different from those governing any other business that he need not expect to get wealthy, as that term is used in other lines of industry. The nature of his business is such that he can't turn his money over quickly like the speculator does and make a good percentage on it every time he turns it over; he can only realize on his investment

once a year and if he gets a good living and succeeds in accumulating a sufficient amount to keep him out of the poorhouse by a long, thrifty life, it is about all that he can expect.

But he is patriotic to the bone. When you talk about love of country, there isn't any class of people in this land that holds more sacred their loyalty to country than does the farmers. They have deeds to land and it makes them think more of the country than many citizens who do not own real estate and who do not get their living out of the soil. Now that they are beginning to realize the big burden upon their shoulders, that this war is really as much of a battle between the farmers of middle Europe and the farmers of this country as it is between the armies of middle Europe and the American army and our Allies, you needn't worry but what the farmer is willing to assume this responsibility, and he is going to produce the goods whether there is any profit in it or not.

It is no more than fair that he should have as large a proportion of profit as any citizen; but I am in no way criticizing the price fixed by our government. I think the majority of them are fair and just. There are some other products besides the farmer's that ought to be controlled, however. I believe that justice will be done as soon as it can be in this respect. But laying all these things aside, I am confident that the world needn't worry about the farmer for he is not going back on the responsibility that rests on him in this great world crisis. He has never failed in the past and he will not now. The farmer will "go over the top."

COLON C. LILLIE.

SPRING WHEAT FOR SOUTHERN MICHIGAN.

Is spring wheat grown in southern Michigan with any degree of success? Lenawee Co. L. T. S.

This question has been answered several times in the Michigan Farmer. In the early days spring wheat was successfully grown in Michigan, but gradually the winter variety was found to be much more reliable and eventually took the place of spring wheat. This shows without any chance for an argument that the winter variety is much more reliable for lower Michigan. However, with a favorable season one may hope to grow a fair crop of spring wheat but he must take a greater risk than he does with winter wheat. If we should have an early spring so that the wheat could be gotten in early it would lessen the chance for failure.

COLON C. LILLIE.

UTAH BEET GROWERS GET \$9 AND ADVANCE.

In Utah the beet sugar factories and farmers have come to an agreement on the price of sugar beets which is considered fair by both sides. The factories will pay \$9.00 a ton and fifty per cent of any advance in the price of sugar over \$7.45 (wholesale) per hundred weight. The present price (February 7), of refined sugar at New York remained fixed at \$7.301.

POTATO GROWERS' MEETING.

(Continued from page 348).

of potatoes as now employed by shippers and demand its immediate abolishment in the interests of the common cause."

The further resolution was adopted that sound, merchantable potatoes produced in Michigan and screened over a one and three-quarter-inch round mesh screen be known as Michigan Standard Grade No. 1.

The efforts of C. W. Waid, extension specialist, and the retiring secretary, were recognized along lines of more and better potatoes for Michigan.

Kent Co.

ALMOND GRIFFIN.

Growing Drug Plants in Mich.

By RALPH W. PETERSON

THE production of drug plants, since the outbreak of the war, has been a matter of considerable interest and will continue to be of increasing importance. The shortage resulting from the rapid depletion of the wild plants has been intensified by the curtailment of foreign importations and the increased demand for drug preparations.

The supply of drug plants in the past has come primarily from the less inhabited portions of the country. Very crude methods of gathering the plants and preparing them for the market has been the rule although the therapeutical value is dependent upon uniform methods of growing and handling the drug plants. Crude methods in the production of drug plants cannot be corrected by assaying in the laboratory. The result is that a dependable drug can be produced only from a uniform supply of drug. Much interest in drug plant production is therefore being shown by the large drug houses.

Uniformity Needed.

But even the cultivated drug plant is subject to wide variation in alkaloid content and much study is still needed along cultural lines to produce a crop with a uniform appearance and alka-

prices are responsible for much of the agitation about the huge fortunes that await the grower of medicinal plants or weeds, as some would call them. Possibly they are weeds if we are willing to accept the definition of a weed as a plant out of place, for surely the propagator of medicinal plants will often think that either the plant or he himself is out of place. He must be prepared to meet reverses in the propagation of belladonna for it logically follows that such enormous prices would never be paid for a crop within the cultural means of anyone.

Belladonna Growing.

Belladonna has certain cultural traits one must become familiar with. For instance, field sown seed is an absolute failure. Just why is a debated question, but possibly because the very small seedling is disturbed by the winds and shifting soil before it has taken root. In a few cases field sown seed, well protected from wind and weeds, has given a fair germination. The only assurance of success, however, is by growing the plants in a house or under sash and transplanting to the field in May. The seed is very slow in germination but can be made to germinate much more evenly by soaking for about a day in a sixty per



It Pays to Give the Garden Good Care.

loidal content. It is a line of business that must not be entered into lightly. But the man with experience in farming and gardening can find the production of drug plants a very absorbing part of his farming operations. Absorbing in capital will be the first deduction but the grower of medicinal plants will find none more interesting and few crops more profitable.

Some of the main drug plants adapted to commercial production are Datura stramonium, Atropa belladonna, Hyoscyamus niger, Digitalis purpurea and Cannabis indica.

A Weed of Drug Value.

Datura stramonium, or as more commonly known as Jimson weed, is a fairly common plant in many sections of the country. It is a poisonous annual belonging to the nightshade family. All parts of the plant contain the desirable alkaloid but only the flowering tops and leaves are in demand on the market. The seeds should be sown early in the spring, three feet by one and one-half feet, in rich, light soil. The plants will make a very rank growth and by fall the leaf crop should be around 1000 pounds per acre and the seed crop approximately the same amount. The price of the leaves has gone up about 100 per cent, due to the war and the present market value is around twenty cents a pound. A large amount of the stramonium leaves are still coming from wild sources and will continue to compete with the commercially grown products.

Much interest has been shown in the past two years in the production of belladonna leaves, root and seeds. The pre-war price on belladonna root and leaves was around fifteen cents a pound. The present market value quoted by the large drug houses is \$1.00 to \$1.50 a pound for the leaves and \$2.00 to \$4.00 a pound for the root. Such

cent solution of commercial hydrogen peroxide. The seedlings are hardened off gradually and transplanted, three feet by three feet, in the field. Well drained clay loam is well adapted to the culture of belladonna. No particular disease will be met with but much damage may result from the potato and striped cucumber beetle. These insects can be held in check with Paris Green or lead arsenate, but such arsenical sprays may find their way into the finished product, if not carefully handled.

Harvesting the Crop.

The custom in northern states such as Michigan, is to take two leaf crops the first year. The first crop of leaves and flowering tops is cut at the time of flowering and the second crop is taken in the fall. At the same time the roots are dug up and either marketed or heeled in to be planted out the following spring for a second year's growth. If protected by four or five inches of straw mulch the roots will survive moderately severe winters standing in the field.

Some difficulty will be met in drying the leaves for the market. Tobacco drying methods are well adapted to belladonna. The plants should be dried in the shade or darkened room and preferably by artificial heat. The roots are carefully washed, split and dried.

The first year's crop of leaves will be from 300 to 1000 pounds per acre and the second year leaf crop slightly larger. The second year's root crop will be around 1000 pounds.

Belladonna Market Conditions.

It must be recognized at the start that while the commercial demand for belladonna is very brisk right at present, the high price now offered will induce extended planting with a consequent decline in price in a few years.

How to raise



Get this great book

FREE—beautifully illustrated in four colors—24 pages of interesting, valuable information for every corn grower. Tells how to prepare the seed bed, select, store and test the seed; shows the dollars and cents gained by accurate planting; explains just what is meant by accuracy in a corn planter; and describes the latest and best method of corn cultivation. Write today for package CP-321. This book also tells all about the

JOHN DEERE 999 Corn Planter. The Accurate "Natural Drop" Planter

The same accuracy that you would get if you painstakingly counted out the kernels of corn and dropped them in by hand—that is the accuracy of the John Deere No. 999 Planter. It is the accuracy of the hand planting method made tireless and rapid by mechanical devices.

John Deere Planter accuracy is the result of 50 years' experience—50 years of thought, of study, of experimenting with that one goal always in mind—accuracy. The 999 has rightly been styled the "super-planter."

Careful design and workmanship have made possible this high degree of accuracy. Each kernel enters the cell in the seed plate in a natural position. The sloping hopper bottom

feeds the corn to the cells whether the hopper is full or nearly empty. It is the most simple yet most effective planting mechanism ever used on a corn planter.

You Control the Number of Kernels Per Hill

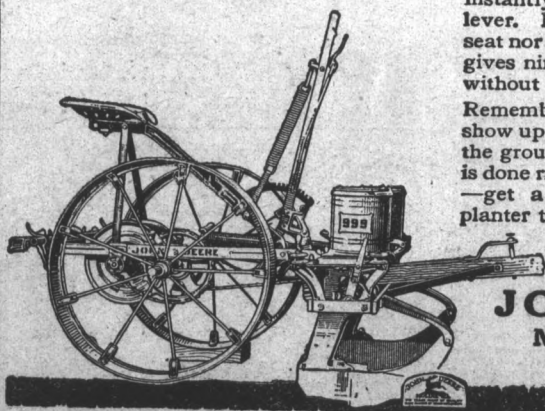
Without changing seed plates or even stopping the team you can plant 2, 3 or 4 kernels in the hill, whichever number you decide the land will sustain.

Merely shifting the foot lever varies the number dropped and you can change the drop as frequently as you desire. The variable drop mechanism of this planter is just as perfect and well protected as the gears on the best automobiles.

You can also drill corn with the John Deere Planter. Change from hilling to drilling or back to hilling is made instantly by means of a foot drop lever. Not necessary to get off the seat nor stop the team. The 999 Planter gives nine different drilling distances without changing seed plates.

Remember, a planter's mistakes never show up until the corn appears above the ground. Make sure that the work is done right when the corn is planted—get a John Deere No. 999—the planter that must prove its accuracy through rigid factory tests before it goes into the field.

JOHN DEERE
MOLINE, ILLINOIS



LIME

LAKE SHORE STONE COMPANY,
P. O. Box 175,

Pulverized lime rock for "sour" soils. WE SELL YOU DIRECT. Shipment from our Muskegon, Mich. yard. Write for sample literature, analysis and price.
Milwaukee, Wis.



Homes and Farms in the "Sunny South" Nature has blessed this section with mild, healthful climate. Farms land in Va., W. Va. and N. C. at \$15 per acre and up. Fruit, truck, poultry and general farming is successful here. Write for information.
F. H. LAHAUME, Agr. and Ind. Agt., N. & W. Ry., 221 Ry. Bldg., Roanoke, Va.

Get More Money For Your Work

Worms and caterpillars, bad as they are, are not the cause of all poor fruit. Potato bugs and flea beetles are bad enough, but blight is worse. *Plant diseases must be fought* as well as worms and insects. Pyrox is the weapon to use against both. It also invigorates the plant or tree, yielding products of superior size and quality. In order to get more money for your work

Spray with
Pyrox
REG. U. S. PAT. OFF.
TRADE MARK REGISTERED

"It fills the barrel with the kind that used to go on top"

It is an insecticide and fungicide combined,—a smooth, creamy paste, *all ready to use by mixing with cold water.* It mixes easily and saves time and labor. In a letter to a friend, the Editor of "The Fruit Belt" says: "I have made up many thousands of barrels of spray mixtures on the farm, and I can say to you I have mixed my last barrel. I now use Pyrox."

Most good agricultural supply dealers sell Pyrox. Last year the demand for Pyrox exhausted the dealers' supplies. See your dealer at once about your supply and write for new Pyrox Crop Book. It tells when and how the large farmers and growers spray to make money. We send it free.

Bowker Insecticide Company

43 E Chatham St., Boston 1016 Fidelity Bldg., Baltimore



Hardie Orchard Gun \$12.00

The most effective and simplest spraying device ever made. Growers all over the country find it saves them time and labor. Does the spraying job quickly and thoroughly. It's easy to use—just fits the hands—quickly adjusted to throw from 10 to 30 ft. No hard work or tiresome effort any more. Spray all day and hardly know it. A big improvement over the old method. Shoots a big cloud of penetrating spray, covering the tree quickly and thoroughly. Make sure of your Hardie Orchard Gun by ordering promptly. They are selling fast. Don't delay.

Hardie Spray Pumps are fast taking the places of other pumps on spray rigs—the growers are getting Sprayer-wise. Over 40,000 of them know that Hardie Sprayers last longer and give more constant service with a lower upkeep cost. This is because they are designed better, built more carefully with better materials and better workmanship. Not built just to sell, but for long and satisfactory service. Our catalog tells you things you ought to know.

THE HARDIE MANUFACTURING CO.
Hudson, Mich.
Branches in Portland, Ore.; Kansas City, Mo.;
Hagerstown, Md.; Brockport, N. Y.



FIELD SEEDS AT WHOLESALE PRICES

We save you money on your Seed Bill. Write for our Special Money-Saving Price List and get our reduced prices on Best Quality Guaranteed Seed. You should know about our low prices. Write at once and be convinced. Everything Guaranteed equal to Sample or Money Refunded. Don't pay double profits on Grass Seed. Our seeds are sold subject to Government test. Have low prices on Seed Corn, Oats, Wheat, Speltz, Barley, Cane, Millet, Cowpeas, Rape, Vetch, Sudan Grass, Potatoes, Artichokes and all leg. Farm and Garden Seeds. Don't order until you write for big 116-p. catalog. Free samples and special low prices on seeds you require. Free 60-p. book on Growing Alfalfa to those who ask for it. Write now. A. A. Berry Seed Co., Box 231, Clarinda, Iowa.


TIMOTHY 35¢
PER BUSHEL
ALFALFA 90¢
PER BUSHEL
CLOVER 168¢
PER BUSHEL
ALSKA & TIMOTHY
At Low Prices
SAMPLES
And 116p. Catalog
FREE

You Must Spray

To Make Crops Pay

There's a Brown's Auto-Spray that will suit you. 40 styles—hand, traction and power. All have non-clog nozzles—save endless trouble. Used by Experiment Stations, and over 450,000 farmers, gardeners, etc. Send today for catalog and Spraying Guide—both free.

E. C. BROWN CO.
852 Maple St., Rochester, N. Y.



"More Potatoes"

From ground planted secured by use of The **KEYSTONE POTATO PLANTER** than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc.

A. J. PLATT, MFR.
BOX 7 STERLING, ILL.



IRON AGE GARDEN TOOLS

Answer the farmer's big question: How can I have a good garden with least expense? How can the wife have plenty of fresh vegetables for the home table with least labor?

IRON AGE Combined Hill and Drill Seeder

solves the garden labor problem. Takes the place of many tools—sows, covers, cultivates, weeds, ridges, etc., better than old-time tools. A woman, boy or girl can push it and do a day's hand-work in 60 minutes, 30 combinations, \$4.50 to \$50.00. Write for booklet.

Bateman Mfg. Co., Box 24C, Grenloch, N. J.



Present prospects are, however, very encouraging.

Hyoscyamus niger, commonly called henbane, is one of the most difficult of all medicinal plants to grow on a large scale. The market price of henbane leaves is fifteen to twenty cents normally but at present is \$1.50 to \$2.00 per pound.

Henbane seed germinates with difficulty, transplants very poorly and is subject to much injury from insects and weather. Henbane is esteemed a very dainty morsel by the potato beetle and extensive damage may be done in a single day by this pest. The plant winters so poorly it is advisable to heel in the roots over winter in some sheltered location or in a protected cold frame.

Growing Henbane.

Henbane may be an annual or biennial but it is impossible to tell from the seeds into which category the seedling will fall. The annual strain has a more slender unbranched stem. The seed is started in flats the last of February and shifted to pots once or twice, then hardened off and set in the field, three feet by one foot, during late May. The leaves and flowering tops will be ready for harvest in August or September. The same care must be used in drying henbane as balladonna leaves. Digitalis purpurea or foxglove has increased 200 per cent above normal price and is now selling for twenty-five to thirty cents a pound. Most of the digitalis on the market still comes from the wild. The Pacific coast regions of Oregon and Washington have a very prolific growth of wild foxglove and will be a factor in determining the price of digitalis for some years to come. Experiments the past year or two have proved that digitalis leaves of the first year's growth will meet the official requirements. It has been the custom in the past to grow the plant

two years before taking the leaf crop. The leaves are dried by artificial heat and stored away unexposed to light or moisture. Five hundred pounds of leaves is considered a fair crop.

Cannabis indica grows very well in Michigan but the alkaloid content varies widely and is always less than that of the drug imported from India. Cannabis indica makes a very large growth (six to ten feet) and should be spaced accordingly. The desirable alkaloid is found in the resinous flower tops of the female plants. The male plants are worthless for alkaloid production and should be eliminated as soon as possible unless the plants are grown for seed production. The tops are harvested when the resin has accumulated and become very sticky. This will be in the early fall. After drying the tops are ground up and stored in air-tight containers or put on the market immediately.

The yield in green tops will be around one ton an acre, or when dried about 500 pounds an acre. The market price varies from twenty-five cents to \$1.50 a pound, according to quality and alkaloidal content.

Drug Plant Growing Profitable.

It is evident that these drug plants are extremely profitable when grown under the right conditions and when properly harvested and prepared for the market. The industry is specialized however, as the resulting product contains the most delicate principle known to science and its uniformity depends upon the growing environment and methods of handling. The two million acres of war gardens will be a powerful factor in the solution of the food problem but it is only the observing grower, conversant with the reaction of drug plants to the various growing conditions who can hope for any great degree of success in growing medicinal plants.

Grow a Good Garden

A GOOD rich soil will give best results for garden purposes. Many of us have garden plots which we have been using for years past, but this spring there will no doubt be some who have not given much attention to garden growing, who will have to lay out new ground for this purpose. When choosing new garden ground it is best to locate at least a part of it near the house and close enough to the well so some irrigation is possible. However, in doing this, it is necessary to surround the plot by some sort of chicken-tight fence. Green peas and other fresh vegetables form very appetizing but costly feed for the fowls. Either woven wire or tall paling fence is efficient and looks neat and attractive and may be covered with flowers and vines. Hop vines were one of my mother's favorite decorations when I was a boy at home then my mother used the hops to make her own yeast. In these later days many of us have forgotten such little economies.

Two Garden Plots Best.

We find it better to have two garden plots. One close to the house and near the well for small early garden, and a large place for sweet corn, potatoes, tomatoes, cabbage, etc., that can be planted in long rows and cultivated with a one-horse plow. This plan saves both time and labor and it can all be cultivated sufficiently often to provide a good dust mulch to hold the moisture and keep down the weeds.

We cleaned our ground and plowed it last fall so that the soil could be put in better tilth this spring. The garden soil should be thoroughly worked to a good depth. The surface should be thoroughly packed, pulverized and friable. Working when it is muddy will produce hard clods that are difficult to work down until melted under the softening influence of spring rains.

In our hurry to get the early vegetables growing we must not become impatient if the ground remains damp for a time after spring seems to be here, because when it is that way, the ground is still cold and the seed would not germinate if we had it there. Oftentimes we are in too great a hurry to get the seed in early. Seeds like lettuce and radishes will stand considerable cold, but many times the seed salesman gets blamed for poor seed when the fact of the matter is that it has not grown simply because it was placed in cold damp soil where it lay until all vitality is lost before warm spring days are really here. Usually there are a few warm days before the cold weather is really past, and on these we feel a great temptation to plant the garden. However, seed planted a few days later when the ground is moist and warm will germinate more quickly and make a more rapid growth than plants from seed placed in the ground too early.

Do Not Crowd Garden.

Last spring under the urging of the farm papers and government, we increased our garden planting considerably. However, we made the mistake of crowding our rows too closely together. We set out twice the usual number of tomato plants, but used nearly the same amount of space. The tomatoes did not do as well as they should. This year we will set the tomato rows four feet apart and plants three to three and a half feet apart in the rows. Then, too, we have the stakes ready so no time need be lost either in preparing them when needed, or their use put off until too late because we are busy with other work. In the small garden next the house, the plantings can be so arranged as to keep the ground busy. Certain vegetables can either be grown in the same row or in alternate rows sixteen inch-

es apart, so that when the earlier vegetable is used and out of the way, the later vegetables are ready to come on and occupy the space. With the proper arrangement a great deal can be grown in a small house garden.

The farm garden should be given more attention than usual this year. It will not only help ourselves individually by providing cheaper food for our table use, but it will help our country by increasing the food supply. We should study our own needs so that in making out the plan for this year's garden we will be able to plant a proper proportion of each kind of vegetable and procure the best arrangement possible, then when storage time comes, we will have a good variety of vegetables to draw from for table use and plenty of everything. If we have more than we need it will help to pass the surplus on to someone less fortunate in their efforts.

Nevada.

P. H. EATON.

MORE SHADE TREES FOR MICHIGAN.

I have been attempting to get each farmer in this locality to plant maple and elm shade trees outside his fence line, along the public roads. It seems hardly necessary to tell anyone in the state the benefits derived from avenues of shade trees, not only from a standpoint of beauty, but from an economical one: the enhanced value of such property is sufficient argument for the planting of shade trees along its roadways. Nevertheless there are thousands of farmers who will never appreciate the value of improving their farms and the country in general in this way, until the state wakes them up and helps them.

In New York the supervisors are authorized to pay \$1.00 per tree, (to quote the substance of the law), "to each owner who shall set out or transplant by the side of the highway adjoining his premises, and shade tree, (desirable), maple, elm, etc. the sum of \$1.00 for each of these living trees, etc. Trees must be set out during the preceding year and living and well protected from animals at the time of the allowance."

Can we not have a similar law in Michigan? The premium could be cut to fifty cents, or even to twenty-five cents, and we should find in a year or two a wonderful increase in the planting of shade trees in Michigan.

Benzie Co.

JOHN NEWHALL.

TROUBLE DEPARTMENT.

Renovating a Fruit Farm.

I bought a fruit orchard in Grand Traverse county. Nobody has cared for the orchard for three years so you see everything is growing wild. As I do not understand orcharding I am turning to you for information.

I have 3000 bushes of gooseberries, 2000 bushes of red raspberries, 1000 bushes of red currant. How soon and how should they be pruned and sprayed? The bushes are standing in pretty fair shape, but, of course, are growing wild.

Gd. Traverse Co.

J. S.

The first thing I would do is to endeavor to get the orchard in a good state of cultivation. This will keep in check all of the weeds which have been sapping the ground of moisture and fertility and give the trees new stimulus for growth. As the orchard has been neglected for some time, the trees will undoubtedly need considerable pruning. The first step in pruning a neglected orchard is to cut out all of the dead wood and then such limbs as cross or interfere with each other. In cutting off either dead or healthy limbs, be sure to cut them close, as leaving the stub of a limb will encourage the starting of a rot in the wood. The stubs will dry out and the rot will in time make its way into the trunk.

Spraying is one of the chief essentials in renovating a neglected orchard, as an orchard in this condition is usu-



A Small Size Oil Pull An Iron-Clad Guarantee

"The new 14-28 sure is a real Oil Pull"

THAT'S the way a Kansas farmer who bought one the other day, put it. And he hit the nail right on the head. Just consider this—in the 14-28 you're getting more than just a small, light weight, easily handled tractor. You're getting all that *plus* the well known Rumely Oil Pull dependability and long life—*guaranteed* ability to burn low grade fuel oils *at all loads, under all conditions*—automatic speed control—oil cooling. You're getting a *real* Oil Pull.

Nor have strength or power been sacrificed in making the 14-28 a light weight tractor. It's a *big* power outfit—capable of handling up to 5 bottoms in plowing, and to run a 24 to 28 inch thresher with all attachments.

And you'll find the 14-28 extremely easy to handle. The platform is just a step from the ground—all operating levers are within easy reach and all working parts easy of access. It has an automobile steering device. It is short turning. An air starter is part of the regular equipment.

Then there's the patented shifting device that makes the 14-28 equally efficient on drawbar or belt, with no sacrifice in construction. The 14-28 catalog explains it fully—we'll just say here that it is *one of the greatest improvements that has been made in tractor construction.*

Get These Special Catalogs

A new Oil Pull catalog is just out. Besides covering every detail of the new 14-28, it describes the medium and large size Oil Pulls, the 18-35 and 30-60 h. p. Also you'll want the catalog of the new small Ideal thresher—the 20x36 Junior—made especially to be run by a small size tractor. Just ask our nearest branch.

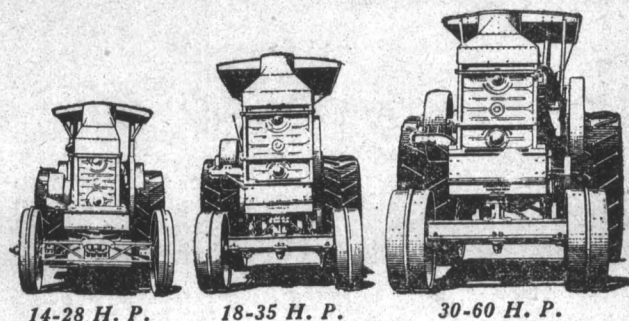
ADVANCE-RUMELY THRESHER CO.

(Incorporated)

LaPorte

Battle Creek, Mich.

Indiana



14-28 H. P.

18-35 H. P.

30-60 H. P.

ADVANCE-RUMELY

OPENS FURROW
DROPS FERTILIZER
DROPS SEED
COVERS

Eureka Potato Planter

Pays for Itself in Labor and Time Saved

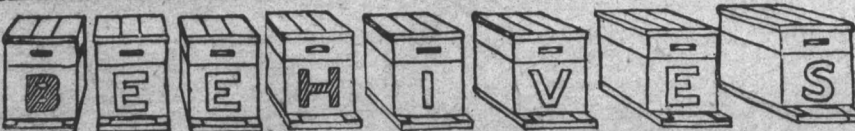
One man and team with an Eureka Potato Planter needs no hired help to plant the whole crop. Whether you plant 4 acres or 400, the Eureka Planter will pay for itself many times over. Better than hand planting. Increases yield. Does 5 operations at once, automatically—accurately.

Opens furrow, drops seed any distance and depth, drops fertilizer (if desired), covers up and marks next row. Furrow opens and seed drops in plain sight—an equal distance apart, at uniform depth, with absolutely no injury to seed. Easy to operate in any soil, made of steel and malleable iron—assuring long life, light weight and few or no repairs.

Write for free catalog on this great line of potato planters—the largest line made. 3 sizes, 1 or 2 rows, with or without fertilizer attachment. In Stock Near You. A success for over 19 years. Whether you are a large or small grower—write today.

EUREKA MOWER CO. Box 832 UTICA, N. Y.

Send for Catalog



Every Orchard and Garden should have bees. We can start you. Sections. Foundations. Bee Veils. Smokers. A complete line of supplies for bee keepers, ready for immediate shipment. 40-page catalog free. Bees Wax Wanted. A. G. WOODMAN CO., Dept. M. F., Grand Rapids, Michigan.

CONDON'S NEW EVERBEARING TOMATO

"Queen of the Market" Big Money Maker. Large solid fruit; excellent canner. To introduce to you our Northern Grown "Sure Crop" Live Seeds, we will mail you (125) seeds of Condon's New Everbearing Tomato and our Mammoth 1918 Garden and Farm Guide.

Tells how, when and what to plant for pleasure and profit. Send postal today.

CONDON BROS., SEEDSMEN
Rock River Valley Seed Farm
BOX 85 ROCKFORD, ILLINOIS

SWEET CLOVER

BIGGEST MONEY MAKER KNOWN—INVESTIGATE

The greatest forage plant that grows. Superior to all as a fertilizer. Equal to Alfalfa for hay. Excels for pasture. Builds up worn-out soil quickly and produces immense crops, worth from \$50 to \$125 per acre. (Easy to start, grows everywhere, on all soils. Don't delay writing for our Big 16-page free catalog and circular giving full particulars. We can save you money on best tested, guaranteed, scarified seed. Sample Free. Write today.

A. A. BERRY SEED CO., BOX 931 CLARINDA, IOWA

Owens Transplanter

Only Self-planting machine. Transplants sweet potatoes, tomatoes, tobacco, strawberries, etc. Any desired depth. Better than hand. As plant is released, water valve opens, then closer rollers press dry soil around plant. Holds moisture but leaves no wet surface soil to bake.

J. L. Owens Co.
1143 Dartmouth St., Minneapolis, Minn.

4 to 7 Acres a day
Circular free

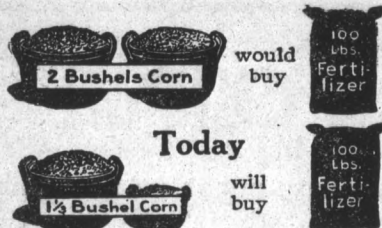
Please Mention The Michigan Farmer When Writing to Advertisers

Fertilizers Pay Better Than Ever

TODAY a bushel of corn or wheat buys more fertilizer (potash excepted, of course) than at any time during the past three years.

Note how much cheaper you can buy a 2-10 fertilizer now than before the war.

In 1914



Today



In terms of farm products, fertilizers cost less today than in 1914.

Fertilizers paid you then—they will pay you better now.

Fertilizers are today more profitable and more necessary to efficient production than before the war. Grow more per acre and increase your profits by using fertilizer.

Help both the railroads and yourself by ordering Spring Fertilizers now.

Send for literature to Dept. 9.

Soil Improvement Committee
of the
National Fertilizer Association
Postal Telegraph Bldg. Chicago The Munsey Bldg. Baltimore

Did You Get Our
LOW PRICES
ON
ACID PHOSPHATE
Nitrate of Soda,
Fine Ground Bone?

IF NOT, write us at once,
before placing your order for

FERTILIZER

Sears, Roebuck and Co.
Dept. 51F CHICAGO, ILL.

20 Packets Seeds—10c

We want every reader to test "HARRIS SEEDS THAT HUSTLE." Send 10c. now—before you forget for this mammoth collection. We send you 20 separate packets finest varieties—one each of Beets, Carrots, Cabbage, Celery, Cucumbers, Lettuce, Cress, Muskmelon, Watermelon, Onion, Parsley, Parsnip, Radish, Salsify, Spinach, Tomato, Mixed Peppies, Giant Cosmos, Double Jap Calendula and Children's Botanical Garden, a curiosity collection of flower seeds. With this collection we send rebate check for 10c. and big catalog of world's finest seeds. HARRIS BROS. SEED CO., 1150 Main St., Mt. Pleasant, Mich.

Mention the Michigan Farmer when writing Advertisers

ally a good breeding place for insects and various forms of diseases which attack apple trees. Before any growth starts, I would spray thoroughly with lime and sulphur at winter strength, which is one gallon to eight of water. If the orchard is of bearing age, I would follow this with lime and sulphur at one to forty gallons, and two pounds of arsenate of lead immediately after the blossom petals drop. If the trees are set to fruit, it would be advisable to follow this last application with a similar one about two weeks after, and another about the first of August if trees are winter varieties.

In bringing your gooseberry and currant bushes back to productive condition, I would advise a thorough pruning of them as soon as the weather permits, cutting out a great share of the old wood and leaving probably about five of the best canes. When cutting back the canes, be sure to observe whether the center of the cane is in healthy condition. If the center is black, it will indicate that a cane borer is present, and then one should continue cutting back until you eliminate the black center. I would also cut out all the new growth that has sprouted from the ground with a pos-

sible exception of one or two of the strongest shoots. These should be kept to replace next year the worst of the old canes which you have left to bear fruit this year.

A thorough spraying with the lime and sulphur, winter strength, will do much to clean the bushes from insects and fungus diseases. However, if the bushes have set to fruit, one or two applications of Bordeaux mixture with about two pounds of arsenate of lead to fifty gallons should be made. This Bordeaux is made of four pounds of copper sulphate and five pounds of lime to fifty gallons of water. Slake the lime in a small quantity of water and dissolve the copper sulphate, after both the lime and copper sulphate have been diluted to about twenty gallons each. They should never be mixed in concentrated form. After the Bordeaux has been made, and the arsenate of lead.

The raspberries should also be pruned, taking out all of the old canes, and an application of Bordeaux mixture would also be beneficial.

Of course, all small fruits will be benefited by a thorough cultivation, which should start early in the spring and continue to about midsummer.

by the system of pruning whenever it is possible. It is obvious that the crotch is the weak point where large limbs are apt to break down when loaded with fruit. This injures the appearance and fruit bearing area of the tree and such a tree is very difficult to restore to its former producing ability.

An effort should be made to prune the young peach tree so that some of the main limbs will grow directly into the prevailing winds. This will prevent the tree from becoming lop-sided with most of its limbs leaning in one direction. In trimming back the young twigs the direction of the growth can be controlled by leaving the bud on the outside at the end of twig remaining. If the end bud is one growing on the inside of the twig, of course the ensuing growth will start inward.

An open center is desirable so that the sunshine can enter the dense foliage and color up the fruit. This should be considered in building the scaffold or frame work on which is developed the bearing surface of the tree.

In pruning the peach it pays to do as much as possible of the work from the ground or from the step-ladder. Climbing in the tree will frequently cause breaking of the brittle branches. If it is necessary to climb into the tree it pays to wear a pair of old rubbers to avoid slipping and tearing the limbs.

Ingham Co. R. G. KIRBY.

The M. A. C. Hort. Show

THE Tenth Annual Horticultural Show given by the Horticultural Club of the Michigan Agricultural College, must be regarded as an unusual success and a credit to the students of the Department of Horticulture. With many of their number in the service the Horticultural Club members came to the front with a show even better than those of the past and far surpassing all others as a financial success, the exhibition netting about fifty-five dollars. A distinctive feature of the show was the Food Administration exhibit. Miss Shier, of the Lansing Food Conservation Committee, was largely responsible for this very fine and extensive display of meat substitutes, conservation posters and literature.

The students in charge proved themselves master hands at the art of camouflage. Through their efforts the com-

partment are very loyal to the annual show along with letters from the men wishing the affair every success.

The tables along the sides with their exhibits of packing, shipping, disease and insect control, plant breeding, and bee-keeping methods, showed thoughtful work on the part of the men in charge of them. This was also true of the displays of horticultural implements, regions and products. A large number of charts and photographs were made use of in bringing out the various points of the work.

As usual, the pie contest was an important feature of the show. Prizes are offered annually for the best apple pies made by co-eds. This year about sixty young women took advantage of the opportunity to demonstrate the worth of the Department of Home Economics. The five dollar gold piece for the best pie went to Miss Esther



The Students' Hort. Show is an Annual Attraction.

monplace Agricultural Hall Pavilion Hallet, a junior from Hillsdale, Michigan. The second prize, a box of Sun-kist oranges, went to Miss Jessie Illenden of Adrian, and the third prize, a box of apples, to Miss Grace Smiley, an instructor in domestic art.

Ingham Co. R. S. SIMMONS.

BUILDING PEACH TREES.

In building up the development of a peach tree it pays to prune annually. The fruit is produced on the previous year's growth of wood so the supply of young wood bears an important relation to the size of the crop of fruit.

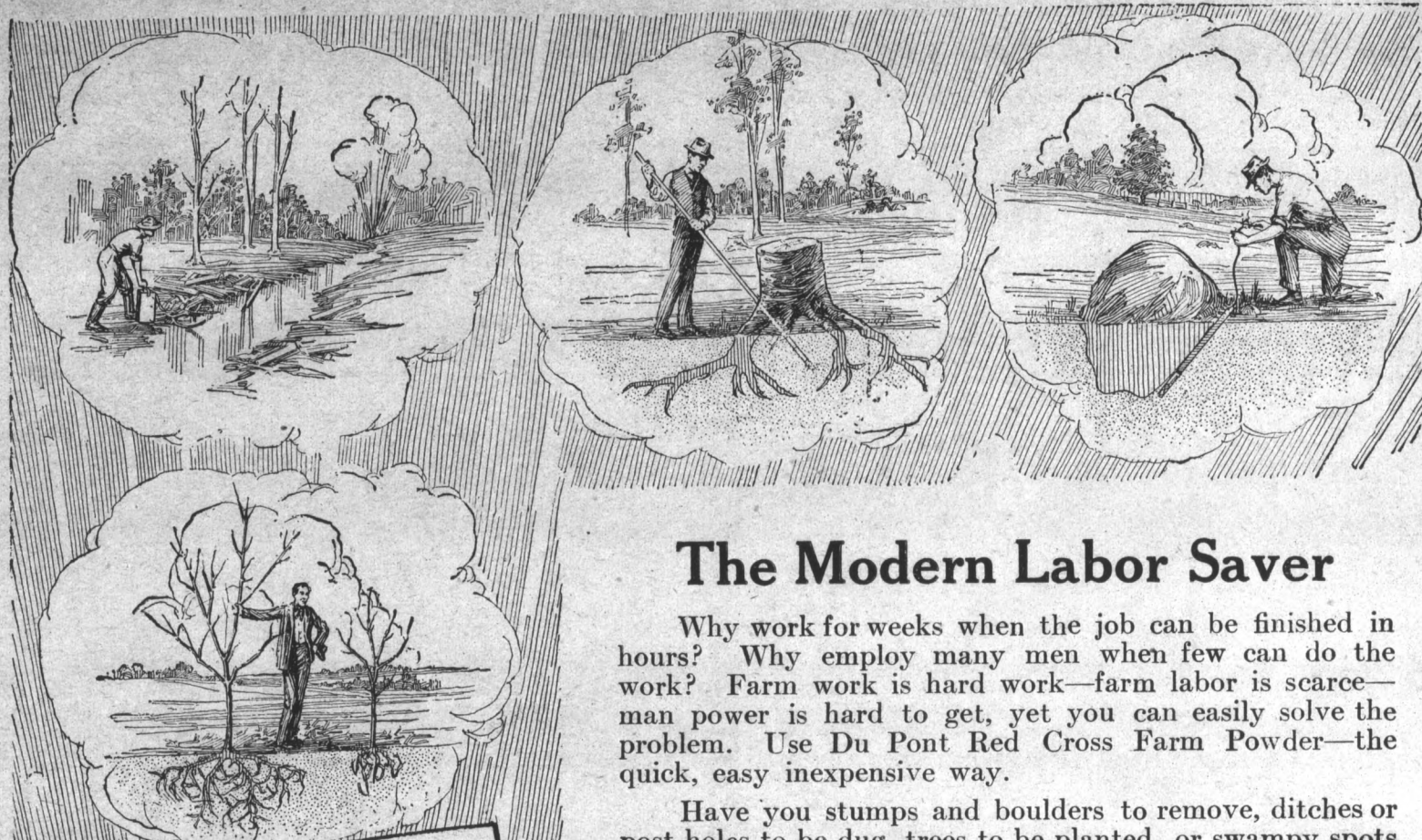
The low-headed tree is usually considered the best, as the fruit from such a tree can be harvested at less expense. Then there is less danger of limbs breaking in the wind when over-loaded with fruit, or weighed down with ice after a severe storm. The peach tree is apt to form many brittle crotches and these should be avoided

by the system of pruning whenever it is possible. It was chiefly with a view to setting strawberries on the same ground later, that I had my asparagus bed well mulched with stable manure in mid-winter. To my surprise, I had nice even rows of asparagus shoots in the spring of 1916, so I cleaned out the weeds, salted well, and cultivated some but the soil was hard from continued soaking, and I never got it very clean that year.

That winter another heavy coat of manure was applied, and the weeds were less luxurious this spring. I cleaned them all out, cultivated with the wheel hoe, and was rewarded by a splendid crop. I sold \$3.26 worth, and five of us almost lived upon it for weeks while flour and potatoes were around \$5. After cutting ceased in July the feathery heads completely covered the ground.

New York. MRS. E. M. ANDERSON.

DU PONT AMERICAN INDUSTRIES



The Modern Labor Saver

Why work for weeks when the job can be finished in hours? Why employ many men when few can do the work? Farm work is hard work—farm labor is scarce—man power is hard to get, yet you can easily solve the problem. Use Du Pont Red Cross Farm Powder—the quick, easy inexpensive way.

Have you stumps and boulders to remove, ditches or post holes to be dug, trees to be planted, or swampy spots to drain? Do it with



Red Cross Farm Powder

Don't break your back grubbing or digging—just bore a hole, light a fuse and watch the hard work do itself.

Stumps removed with Red Cross Farm Powder come out broken up, free and clean of soil and leave the ground in better condition.

Trees planted in blasted holes excel trees planted in spade dug holes. They grow faster, keep healthier and bear earlier.

Speed up your work. Save yourself both hard work and money. Save coal. Burn stump wood for fuel and pay for the powder out of the money saved.

The whole world needs food. There's a big market and an eager one. It is every farmer's golden opportunity. There's a short cut to it.

Get Our New Book "The Giant Laborer"

It's a remarkable volume that will open your eyes to the many uses for Farm Explosives. It explains new methods which have helped thousands of farmers everywhere to make more money. Check farm Explosives in the coupon. Sign and send it in. Get your copy—now.

E. I. du Pont de Nemours & Company

Established 1802

WILMINGTON, - DELAWARE.

The Du Pont American Industries are:

E. I. Du Pont de Nemours, & Company,	Wilmington, Delaware	Explosives
Du Pont Fabrikoid Co.,	Wilmington, Del.,	Leather Substitutes
Du Pont Chemical Works,	Equitable Bldg., N. Y.	Pyroxylin and Coal Tar Chemicals
The Arlington Works,	725 Broadway, N. Y.	IVORY PY-RA-LIN and Cleanable Collars
Harrisons Works,	Philadelphia, Pa.,	Paints, Pigments, Acids and Chemicals
Du Pont Dye Works,	Wilmington, Del.,	Dyes and Dye Bases

Visit the Du Pont Products Store, 1105 Boardwalk, Atlantic City, N.J.

**+ RED CROSS +
FARM POWDER**



Mark X before subject that interests you
and Mail This Coupon to
E. I. DU PONT DE NEMOURS & CO.
ADVERTISING DIVISION.
100 DELAWARE.
WILMINGTON.

Farm Explosives	Raynite Top Material
Hunting	Motor Fabrikoid
Trapshooting	Craftsman Fabrikoid
Industrial Dynamites	Truck Special Fabrikoid
Blasting Powder	Marine Special (U. S. Sand)
Blasting Supplies	Book Finish Fabrikoid
Anesthesia Ether.	Py-ra-lin Toilet Goods
Leather Solutions	Challenge Collars
Soluble Cotton	Novelty Sheeting
Metal Lacquers	Transparent Sheeting
Wood Lacquers	Py-ra-lin Rods & Tubes
Pyralin Enamels	Py-ra-lin Pipe Bits
Pyroxylin Solvents	Py-ra-lin Specialties
Bronze Powder	Sanitary Wall Finish
Commercial Acids	Town & Country Paint
Alums	Vitrolac Varnish
Pigment Bases	Flowkote Enamel
Tar Distillates	
Fabrikoid Sheeting	Antoxide Iron Paint
Fairfield Rubber Cloth	Bridgeport Wood Finishes
	Auto Enamel

NAME _____
ADDRESS _____ STATE _____
CITY _____
BUSINESS _____

YOU WANT CORN

We can ship promptly
carloads good

ILLINOIS EAR CORN

at \$1.60 per bushel
seventy pounds

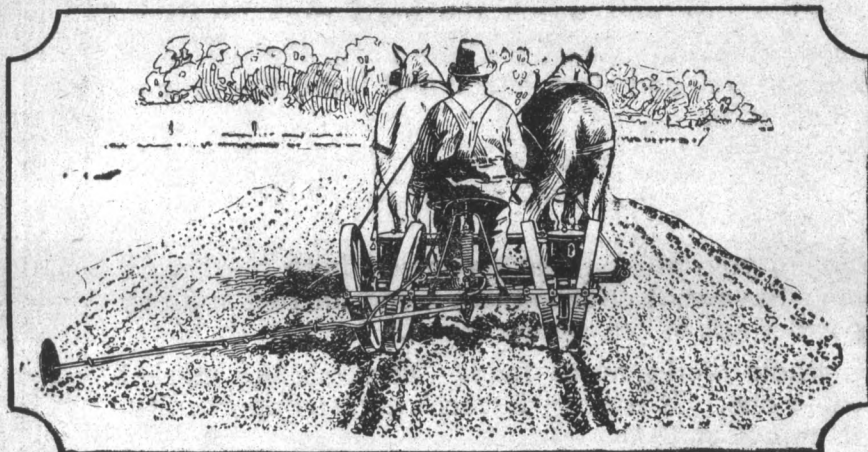
Freight Paid

Telephone or Wire
our expense

CARLOAD WELLMAN

Grand Rapids,

Michigan.



The Moline Four-Wheel Corn Planter

A simple, reliable, perfected four-wheel planter

When you use a Moline Four-Wheel Corn Planter to plant your corn you plant every kernel in every hill, the crop germinates quickly and uniformly, gets a quick start on the weeds, and matures early and uniformly. This means a bigger and better crop and more money for you.

All the seed is planted at the same depth because the runners set well back between the wheels. The four wheels pack the soil firmly from the sides and leave the top soil in a loose condition. This causes rapid rise of soil moisture and quick germination of the seed. The young plants push through the loose top soil easily. The ridges made by the four wheels will not wash out as easily as those made by the ordinary planter.

There is seldom any replanting to be done after a Moline Four-Wheel Corn Planter.

The Moline drop never fails to work—you always get the full number of kernels in every hill. There are no complicated parts to get out of order. Valve action is very simple and hills cannot be scattered.

Many other features such as close-coupled construction which makes it easy to handle, accessible parts, seed-can which may be tipped, a foot pedal for throwing out the check wire, easy adjustment for depth of runners, automatic disc marker, and a strong, simple construction, make the Moline Four-Wheel Corn Planter the best corn planter made.

Disc furrow openers and a fertilizer attachment are furnished on special orders.

Write for free catalog describing the Moline Four-Wheel Corn Planter in detail, also name of your nearest Moline dealer. Address Dept. 42

MOLINE LINE

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Wagons and Stephens Salient Six Automobiles.

MOLINE PLOW CO.  **MOLINE, ILLINOIS**
MANUFACTURERS OF QUALITY FARM IMPLEMENTS SINCE 1865

Please mention the Michigan Farmer when you are writing to advertisers and you will do us a favor

Feeders' Problems

Finishing Steers on Corn.

I would like to ask your judgment on feeding steers \$1.75 corn. I have nine steers which weigh about 1200 pounds apiece and I feed all of the ensilage they will clean up with four pounds of cottonseed meal per head a day, and all the mixed timothy and clover hay they can eat. I would like to put these cattle on market April 15. What more can I feed and make a profit? I expect to get \$11.50 per cwt. if nothing goes wrong.

Livingston Co.

F. L.

I think all who have had experience in fattening steers will agree that there is no prospect in making any profit in feeding steers \$1.75 corn when the steers must be sold after fattening for \$11.50, and with your ration of mixed hay, corn silage and cottonseed meal, I don't think that corn is necessary. Cottonseed meal is cheaper and taking into consideration its food value at the present price, with corn at \$1.75 per bushel, if I were going to add more grain I would increase the amount of cottonseed meal, gradually adding more until you get the steers to eat six or seven pounds of cottonseed meal a day. This, with all the corn silage they will eat and with a ration of hay ought to give you as much gain as you could get out of the corn. Perhaps your steers will not have quite as good a finish. The consensus of opinion is that there is nothing that will put the finish on a fattening animal quite equal to corn. However, I don't believe it would make any difference in the price. You are feeding now a splendid growing, fattening ration and I believe the cheapest one that you could possibly get, taking the price of all foods into consideration.

FITTING HORSES FOR MARKET.

It is often desirable to give horses a little extra attention before they are offered for sale, either at a public sale or otherwise. An animal in a nice fat condition always brings a better price than one which appears to be in a run-down condition, and one will more than be repaid for the expense of getting the animals in good marketable shape.

When it is the desire to make large gains daily, heavy grain feeding will have to be practiced and this means the cutting down of the hay supply. Twelve or fifteen pounds of hay daily will be enough for the average horse, and after that he ought to have just about all the grain he will clean up three times a day. If a horse won't fatten when fed corn, oats and clover hay, then his digestive system must be out of condition. Of course, there are some horses that are naturally slow to take on additional flesh and they must be given individual attention. The first thing to do with one of this kind is to have his teeth examined and put in shape if they are out of order. We have in mind one case where a horse was "fattened" all winter and he never gained a pound. In the spring the advice of a veterinarian was sought and it was found that the horse had two long grinders and he actually couldn't bring his teeth together. But even when their teeth are in perfect condition, there will sometimes be individuals in a bunch that will not do well on corn, oats and clover hay. They have to be petted, as it were, and there are different ways of doing this. If one can get a horse of this kind to eat a warm bran mash two or three times a week this will often bring him into condition, and especially if you will give him a tablespoonful of sulphur once a week. A ration of molasses once a day also frequently gives good results when the animals are not otherwise doing well.

Many a good horse gets his digestive system out of condition, but he can be put back in shape and be worth a good deal of money if he is started in the right way, and that is why it is advis-

able to go to a little extra trouble in handling those individuals that do not respond to the ordinary ration. It may also be added that one can sometimes get greater gains by feeding soaked grain than can be made by feeding it dry. Soaking may be done anywhere from twenty-four to thirty-six hours. This applies especially to those cases where a horse is inclined to have the colic under high pressure feeding.

Indiana.

W. F. PURDUE.

THE SHEEP SHEARING MACHINE.

As I have purchased a sheep shearing machine I would appreciate any information on how to run it. How close should the sheep be sheared and how many times a year? Once or twice?

Marquette Co.

R. E. J.

The sheep shearing machine is practical. I don't think a man can shear any more sheep in a day than he can with a common pair of sheep shears if he is an expert, but the sheep shearing machine allows a novice to shear sheep without cutting them all to pieces and, too, if he is careful he can get along without cutting the fiber off twice as is done in many instances with a common pair of sheep shears.

It would be very difficult to tell a man how to use a sheep shearing machine without being there and giving personal instructions. If you can run a horse clipping machine there is no reason why you can't run a sheep shearing machine. There is more in getting the knack of holding the sheep in a proper position than there is in operating the machine itself. Of course, one man must turn the crank in operating this machine and the other man must hold the sheep. It works very nicely if you know how to hold the sheep.

There is a great knack in shearing the sheep. It isn't everybody that can do it successfully. The principal thing to do is to use the left hand back of the shears in pulling the skin of the sheep smooth and tight, then operate the machine with the right hand and you will push it always on a smooth surface. If you don't pull the skin smooth and tight, however, you will always have wrinkles in front of the knife which will prevent you from doing a good job. There is no danger of getting the sheep sheared too close with a sheep shearing machine. What you want to do is to get all the wool off that you can.

Sheep are sheared only once a year. The staple on sheep is none too long at that. The longer the staple the better.

SUBJECT TO CHANGE.

Conservation of food must be adjusted to meet necessities from time to time, for neither production, nor allied demands are constant factors, nor can any of these factors be anticipated for long periods in advance in the disturbed conditions in which we at present live.—U. S. Food Administration.

Farmers throughout the middle west are optimistic regarding the future market for beef cattle and are buying as many desirable stockers and feeders as can be purchased for reasonable prices on the Chicago market. Unfortunately, they are hampered a great deal by the practice of the packers in outbidding them for the better class of feeders carrying a moderate amount of flesh. The demand for thin cattle for finishing off comes from such states as Illinois, Iowa, Indiana, Michigan, Wisconsin, Ohio and Kentucky, and there is an especially good inquiry for well-bred Angus, Hereford and Shorthorn cattle. Not many heavy feeders are offered on the market, nor is there any large call for them, most country buyers manifesting a marked preference for well-bred cattle weighing around 800 to 900 pounds for the spring and summer feeding, while for grazing the demand centers on a good class of light steers weighing around 450 to 700 pounds.

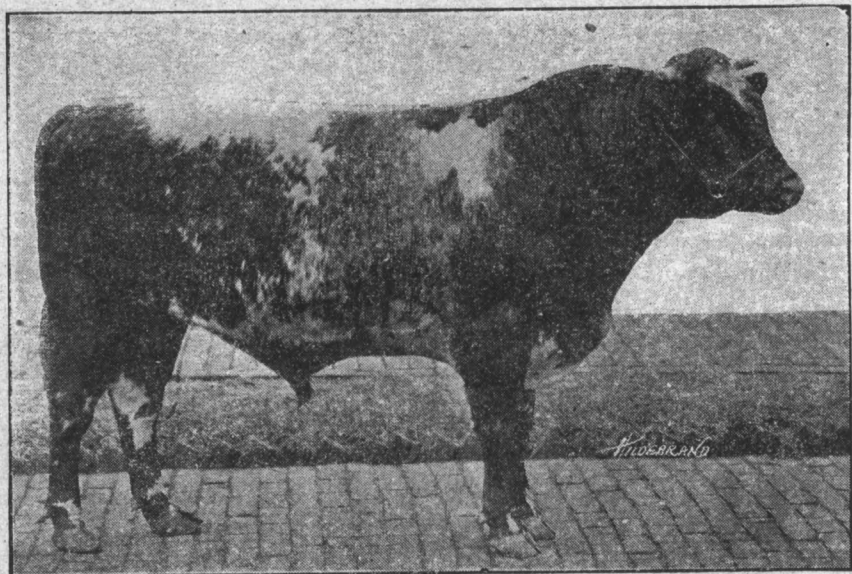
Watch the Sows at Farrowing Time

Farrowing time is the most critical season for the swine herd. At no other time will care and attention pay greater returns. Results of several months of labor and care may be lost by neglect at this period. Emphasis is justly placed on prolificacy of brood sows, but the number of pigs which they farrow is not the most important consideration. The number they raise determines whether the sow has been kept at a profit or loss. The sow which farrows five pigs and raises all of them is more profitable than the one which farrows fifteen and saves two or three. The disposition of the mother has much to do with the number of pigs she will raise. The way she is handled influences her disposition and, consequently, the results that may be expected. L. A. Weaver, of the University of Missouri College of Agriculture, offers the following suggestions on the care of sows at farrowing time:

Strict account should be kept of the breeding dates and a week or so before a sow is due to farrow, she should be removed from the other sows to

weather is very cold, a lantern hung in the top of the cot will be of service. At such times, if the sow is gentle, it is well to place each pig as soon as it is farrowed in a barrel or box containing some warm bricks covered with old sacks. The pigs may be left here until they are dry and lively enough to be returned to the sow. If pigs do become chilled, there is no better way to revive them than to dip them in warm water.

The sow should not be fed much for twenty-four hours after farrowing. The pigs are not able to take much milk, and the milk flow should not be stimulated for the first few days. The sow will be more or less feverish and should have all the water she will drink but will not need feed for a day or so. If the weather is cold, it is well to take the chill off the water before giving it to her. The first feed should be the same kind that she received before she farrowed and should be fed in small amounts as a thin slop. The feed may be gradually increased as the pigs become able to take the



The New Impetus in Beef Production by High Prices and Labor Shortage is Affording Michigan Farmers an Op

the quarters where she is to farrow. The feed just before farrowing should be the same kind that will be fed while the sow is suckling her pigs. This feed should contain plenty of protein and should also be laxative in nature. A ration of corn fifty per cent, shorts twenty-five per cent, bran fifteen per cent, linseed oil meal ten per cent, should give good results; and while it is not recommended as the best ration it can be taken as an example, and similar rations may be used successfully. A few days before the sow farrows the amount of the ration should be reduced somewhat. If this is done, and a laxative feed is fed, the sow will come up to farrowing time without fever and will, for this reason, not be apt to injure the pigs by her own restlessness.

The quarters should be warm enough that excessive bedding will not be required. If too much bedding is provided the pigs may become hidden in it and smothered and crushed. A bushel or more of wheat chaff or cut straw will be sufficient. After the sow farrows it may be necessary to change the bedding, but the amount need not be increased. Dry bedding is more important than the amount of bedding. It should be changed often enough to maintain a dry bed.

Individual cots will be found valuable for keeping the sows away from other hogs at farrowing time. Usually the less the sow is disturbed when she is farrowing, the better. It is important that one be on hand, but unless she needs assistance, keep away from her. If the sow needs assistance, be as quiet in giving it as possible. The pigs should not become chilled before they have dried and suckled. If the

milk until the sow receives all she will eat of a good, laxative, milk-producing feed. Ordinarily about two weeks should be taken to get her on full feed. After the pigs are old enough to take all the milk the sow can produce, she should be fed liberally since there is no better way of feeding pigs than through the mother.

PURE-BRED CALF CLUBS.

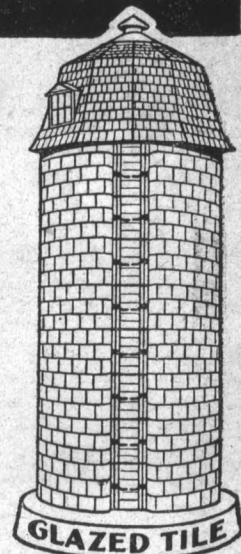
The boys of Caledonia have set a good record for the boys of the remainder of the state, in the starting of their calf club. These boys, eleven in number, have already started work with eleven pure-bred Guernsey calves purchased from Waukesha county, Wisconsin. Their club is called the "Caledonia Junior Guernsey Breeders' Association," and they have plans under way for making their community a second Waukesha county. At their last meeting they voted to take in one new member, making their total an even dozen. Keep your eye on Caledonia. They also voted to raise Early Wonder beans this next year to help pay off the notes given for the calves.

The results thus far seem to indicate that good results are to be expected from sheep this coming year. The boys already at work with sheep clubs are all doing nicely. Now is the time to get started. Good ewes can still be purchased and in almost every case the banks are willing to finance the purchase of sheep for these clubs. If a boy starts now with bred ewes, he can start paying back his note with the income from the wool next spring and he will have his increase in lambs to offset his feed bill and help carry the project along.

Play Safe—Get a Kalamazoo

If you were going to buy dairy cows you'd buy blooded stock, wouldn't you? You'd look for thoro-breds with a record would you not? You'd scarcely take chances with grade stock of questionable value.

Use the same judgement and sound business sense in the selection of your silo. Play safe! Decide upon the



Kalamazoo TILE AND WOOD SILOS

"The World's Standard"

--thorobreds, with a record of 27 years of satisfactory and efficient service. Hundreds of Kalamazoo Silos put up more than 27 years ago are still in use—and good for many more years of crop conservation. We are pioneers in the silo business and have incorporated the knowledge and experience of our long career in the Kalamazoo Silos of today. They're built **right**—from the ground up. Kalamazoo means **most for your money**.

We can furnish any size silo in the only materials that are **safe** and economical for silo construction. All Kalamazoo Silos whether wood or tile have the famous Kalamazoo Galvanized Steel Door Frames and continuous doors which are universally recognized as the best ever designed.

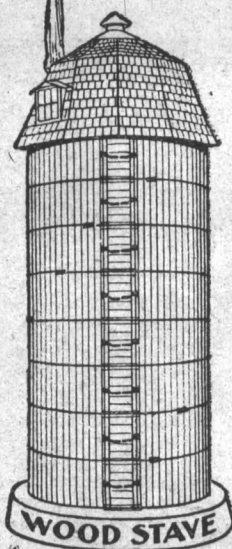
Glazed Tile Silos—"Permanent as the Pyramids"—fire-proof, frost-proof, storm-proof, moisture-proof, acid-proof, decay-proof, vermin-proof. Galvanized reinforcing. Require no paint, no up keep expense or repairs. First cost is the last cost. Easy to build—and once built, your silo problem is solved forever.

Wood Stave Silos—Your choice of four of the best time-defying woods. Kalamazoo Silos are manufactured complete ready to set up. Quickly and easily erected by inexperienced home labor. Simple, safe anchor system—continuous doors and galvanized steel door frame and many other valuable features.

Get the KALAMAZOO Catalog Now

You owe it to yourself to find out all about the superior features of the Kalamazoo before you buy a silo. You ought to know about our easy payment plan and our **special offer to early buyers**, so mail the coupon now for complete new catalog and full details. If interested in an alfalfa or ensilage cutter, ask for circular.

Kalamazoo Tank & Silo Co.,
Dept. 223
Kalamazoo, Mich.



Kalamazoo Tank & Silo Co., Dept. 223, Kalamazoo, Mich.

Please send me complete new catalog, easy payment plan and special offer to early buyers.

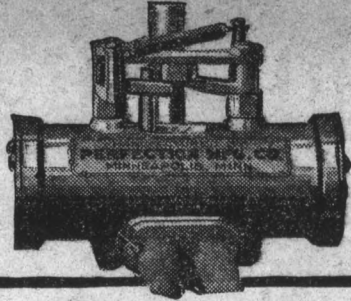
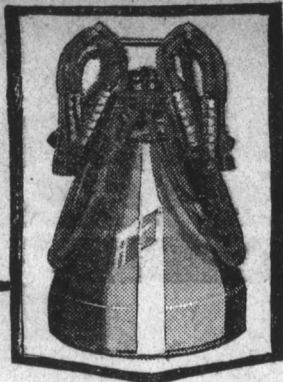
Also send me full information about your

☐ Ensilage Cutters ☐ Water Tanks ☐ Alfalfa Cutters
☐ Wind Mills

Name.....

Address.....

Town.....State.....



The Heart of The Milking Machine

THE pulsator is the heart of any milking machine. It controls and regulates the action of the teat cups on the cow's teats.

A man with a weak heart would not be accepted for military service. You should not accept any milking machine with a weak heart. The Perfection has the heart of an athlete. His heart beats are strong and steady. He can stand lots of work and thrives on it. The Perfection pulsator is simply a piston working back and forth in a brass cylinder, no cog wheels, weights, levers or "clock work." It does not easily get out of order, and with ordinary care it should outlive any other piece of machinery on the farm. The Perfection milks as the calf does, with a gentle suction, a downward squeeze, followed by a period of complete release. The pulsator can be instantly adjusted to suit either a hard or easy milking cow. This point is a very

important one. Not all cows milk alike and the Perfection recognizes this fact. The action of the Perfection on the cow's teats, which is nature's way, and the possibility of adjusting the machine to suit different cows are two of the many points in which the Perfection excels all other milking machines.

Newman Bros., Elk Grove, Cal., write:

"As you know we produce certified milk and would not be allowed to use any machine that would injure a cow's teats or udder or adversely effect the bacteria count. We have milked entirely by machine for about two years with perfect satisfaction to all concerned, including the cows. One man with ordinary intelligence is doing with the machine what it required three men to do in the old way. We would convict ourselves of being either philanthropists or fools were we to go back to the old way. We are familiar with most makes of milking machines and have tried out several of them. The Perfection is superior in several respects. First: Both suction and squeeze can be changed instantly and adjusted to the individual cow. This is a mighty good thing, as any milker ought to know. Second: The Perfection will milk more cows in a given length of time. Third: The Perfection pulsator is more simple; has fewer wearing parts and is easier to adjust. Fourth: The teat cup rubbers last much longer than on one other machine which we tried. I cannot understand the dairyman, who modern in every respect, will go on milking by hand when he could cut expenses and make dairymaking more attractive, by using a Perfection Milking Machine. When we need more milking machines, the order is yours."

Write for free illustrated catalog. It contains valuable information.

Perfection Manufacturing Company

2126 East Hennepin Ave.

Minneapolis, Minn.

PERFECTION MILKER

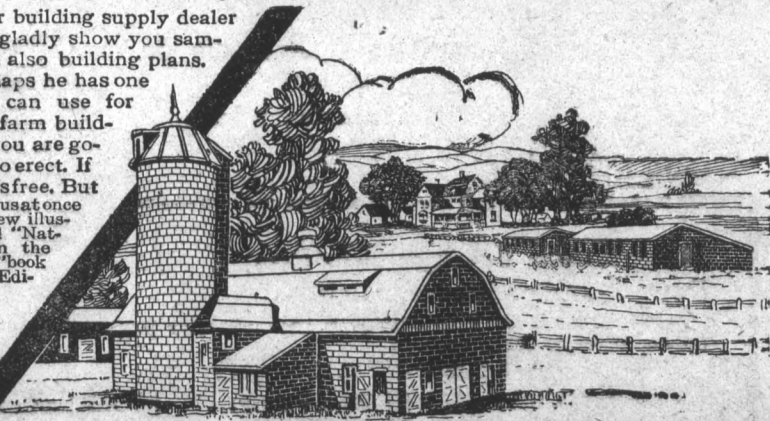
Rats or Profits?

Every rat on your place, according to experts in the U. S. Department of Agriculture, will cause a loss of more than \$2 during the coming year. It is no uncommon thing for farm buildings to harbor forty to fifty rats and great numbers of mice. The resulting loss amounts to a pretty big sum. Build your granaries and barns with

Natco Hollow Tile

Natco buildings are vermin-proof and fire-proof as well. Will stand for generations—save painting. The smooth glazed walls will not absorb odors and are easy to clean. Air chambers in the walls keep out the bitter cold of winter and the scorching heat of summer. Also keep the buildings dry and free from mildew. Save coal in the house and grain in the bin. Natco buildings will reduce your insurance rates yet add to your real protection.

Your building supply dealer will gladly show you samples, also building plans. Perhaps he has one you can use for that farm building you are going to erect. If so, it's free. But write us at once for new illustrated "Natco on the Farm" book—1918 Edition.



National Fire Proofing Company

1115 Fulton Building

Pittsburgh, Pa.

23 Factories assure a wide and economical distribution

When Writing to advertisers please state that you saw their ad. in The Michigan Farmer.

The Art of Buying Cows

By CHAS. E. RICHARDSON

EVERY dairyman that is up-to-date, knows all of the fine points about judging cattle. That is, the large twisted milk veins, large udder with well placed teats, wedge shade body and other markings which go to show that a cow is a good animal for the purpose which one wants her for. But, there are other things which are necessary to know when one has to buy a cow.

There is the risk one must take when getting a strange animal—tuberculosis. There are not, to the ordinary purchaser at least, any external signs which would give him a clue to her being tubercular. Of course, if she was so bad that she was going to die within a very short while, then there might be some indications that all was not all right. But a cow in that condition would not be up for sale. It is the cow that is apparently well, and still has tuberculosis which will develop, that the buyer makes the mistake when purchasing. There seems to be only one way that one can protect himself when he is buying strange cows; that is to know that the cow has been tested recently. Unless one is getting a cow very cheap it does not pay to take a chance getting an untested cow from strangers. And then, if a cow is sold too cheaply, then is the time to suspect that there must be something wrong somewhere, or she would not be sold cheap!

One thing that I always do when I am looking a cow over that is for sale, is to feel her udder all over. I bought a cow once that I neglected to do that to, and after getting her home I found there were lumps in her udder. While I never have had any bother from them, I do not think that it is well to buy a cow with such; they may develop into something serious.

I do not remember of ever reading in any book about trying a cow's teats, to see if she milks easy. I have learned that to have a hard milker, is trying on one's patience. So I always try each teat to see if they are easy to get the milk out of.

Of course, there are supposed to be ways to tell how old a cow is by looking for the rings on her horns. The first ring is supposed to mean three years and each other one represents another year. But there has to be more or less judgment used with this method, I have found. Especially if the horns have been broken or worn a lot. Then again, there are many cows that are without horns. I always look at the front teeth, which, if nice and even, I would be more apt to feel that she was not very old, as old cows sometimes have teeth that are well worn off or broken. But with all these ways to tell, one must do a lot of "sizing up" also, as one old farmer told me he did when he bought cows. I do not remember of ever finding a cow over

ten or twelve years old that was for sale. After that age it seems to be easy for the owner to forget. Unless one has a particular reason, it is well not to buy an old cow; if a young cow is bought and does not suit it is much easier to get rid of her than an older one.

If one can buy a cow just before she "comes in" there is a better chance then to get some money back that has been invested; the calf is worth something. And then again, she can be taken care of and one can get the full benefits from her, where, if she was bought later on she may have dropped off in her milk flow, enough so that to get her to do her best, one would have to wait until she freshens again.

If one buys a cow that is fresh or about to freshen there is less chance that she is an aborter. Purchasing a cow that has had her calf for some months, or one that has had her calf just sold (?) makes the risk of getting a cow that has abortion greater. Once abortion gets into a herd, it is hard to get it out. There is no test for abortion. It sometimes takes years to get it out of a herd. Of course, if one can buy from a reliable owner the chances are lessened, but one cannot be too careful.

When one buys a cow that is perfect in every way, that is the time to "look out." She may be a "sucker," or perhaps she is "breechy," that is, jump fences like a deer. Or maybe she will kick you off the stool when she has to be milked.

Really, the only right way to build up a herd is to raise your own stock from a pure-bred bull. Then you know somewhere near what you are doing. But to go out and buy a good cow, now-a-days is a "game of chance," even to the experienced.

A scheme that I have when I want to buy a cow is as follows: I go into the barn of the owner of a cow that is for sale. I look her over carefully and let him tell his story. I feel, though, that he is selling the cow that he thinks is the poorest in his herd. I look over the other cows and ask about them. Generally I can find one or two that look pretty good to me. The chances are that they are the ones that he does not want to sell. Then I feel that if he wants to keep them they must be all right and I try to get him to set a price. I try to buy one of them. Even at a better price, they are generally worth more. I reason that the seller wants money. He picks out the poorest cow to sell, as cheap as he can. If I offer a good price for a good cow and he needs the money, I may get a good cow rather than take chances on the cheap one. I have succeeded many times in getting nice animals by trading this way. I would rather pay more and be sure than take chances and perhaps lose.

Spring Dairy Problems

By I. J. MATHEWS

IF there is such an animal as a "grain substitute" for dairy cows that can be grown on the farm, the dictates of economy force us to get acquainted with it: The purpose of any so-called grain substitute is to furnish more protein than is ordinarily found in the silage and hay. For this purpose, it is obvious that the legumes in some form must be relied upon.

Viewed from almost any angle, soy beans planted in corn come the nearest to providing the grain substitute than any other combination I know of. The very fact that the only added expense of this procedure is the cost of the seed and the extra time of planting makes them still more desirable,

not to mention the better quality of the resulting silage. Corn-soy bean silage is much higher in protein than ordinary corn silage and it is the experience of dairymen feeding it, that much less grain is required for the same milk production than when feeding corn silage alone. There are a few general points that should be known before one starts in to plant the soy beans with the corn. In the first place, while the beans can be put in through the fertilizer attachment, they are best sown through a special soy bean attachment. We have found that the correct amount is about ten pounds of seed to the acre and it

(Continued on page 375).



NOW, more than at any other season of the year, the kind of ration you feed your dairy cows is of the greatest importance. They have been on dry feed for several months and apt to be showing a dropping off in their milk production. They should have a ration of exceptional **PALATABILITY** and particularly one containing the **WIDEST VARIETY** of grain products which are high in quality of both carbohydrate and protein content — a ration that will “whet” the appetites and induce maximum production over long milking periods.

In **SCHUMACHER FEED** and **BIG “Q” DAIRY RATION** you have a combination of milk producing materials which are most ideal. They furnish the five essentials of a successful dairy ration—**PALATABILITY—DIGESTIBILITY—VARIETY—NUTRITION** and **BULK**, so scientifically balanced that your cows will relish them day after day, year in and year out, and maintain their maximum flow and keep in vigorous, healthy condition.

SCHUMACHER FEED AND BIG “Q” DAIRY RATION

SCHUMACHER FEED has been the “stand-by” and standard of dairy feeds for years. It has to its credit more World's Champion Long Distance Milk and Butter records (as the carbohydrate portion of the ration) than all other feeds combined. Of 27 World's Champion Records to its credit—20 were on **YEARLY** production — and you know that **LONG DISTANCE PRODUCTION** means increased **LONGER** profits for you.

Fed in conjunction with **BIG “Q” DAIRY RATION**—our new high protein feed—you have a mixture which can be made suitable for any cow, in any lactation condition. The secret of the exceptional merit of **SCHUMACHER** is in the fact that it supplies the **ENERGY, STAMINA, “BACK-BONE” VIGOR “STAND-UP-ABILITY”** so vitally necessary for long milking periods.

BIG “Q” DAIRY RATION is a protein feed that has more than made good the dairymen's highest expectations—it is a **DIFFERENT** protein mixture—different because its protein content is not simply so much protein, but a selection of the **RIGHT KIND, QUALITY** and **VARIETY** of protein materials now recognized of **VASTLY** more importance than quantity.

Try Feeding the Following Suggested Rations and Let Your Own Cows Render the Verdict:

General Ration with Ensilage or Roots	{ One part Schumacher Feed One part Big “Q” Dairy Ration
To Fresh Cows with Green Feed.....	{ Two parts Schumacher Feed One part Big “Q” Dairy Ration
To Dry Cows.....	{ Four parts Schumacher Feed One part Big “Q” Dairy Ration
Test Ration.....	{ One part Schumacher Feed Two parts Big “Q” Dairy Ration

(Increase Big “Q” Ration if cow can handle more protein without bad effects)

Now is the time to force your milk production. Every extra pound of milk you produce by liberal feeding up to the capacity of the cow is two-thirds profit. That's why it pays big to feed these two ideal feeds. (67)

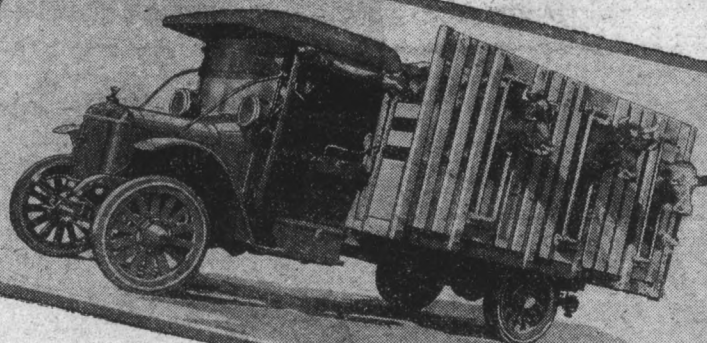
The Quaker Oats Company, Address Chicago, U.S.A.

FUL-O-PEP
POULTRY FEEDS

We have just issued a valuable new Poultry Book and Poultry Calendar which tells in detail why hens do not lay more eggs—why they stop laying in winter and how to overcome these conditions. It is full of interesting hints and tips. It is a book you will value, use and keep. We will gladly send you a copy free on request.
THE QUAKER OATS CO., Poultry Dept., Chicago, U.S.A.

FUL-O-PEP
POULTRY
CALENDAR

REPUBLIC



To the Farmers

Who are paying for Republic Trucks
whether they buy them or not

AT the present prices of feed you cannot afford horses for the little hauling work they can do in comparison with Republic Farm Trucks. If you are using horses for farm hauling you are now paying the difference between horses and what you could save. That difference would soon pay for a Republic Truck.

The Republic "eats" only while it works—does as much as several teams—is always ready to work day or night. Works as surely on bad roads as good roads—makes trips with loads in an hour or two that take a day with horses. It is a "life-saver" in the present labor shortage.

REPUBLIC SPECIAL CHASSIS \$995

A rugged, sturdy truck for all kinds of farm work. $\frac{3}{4}$ -ton with Republic capacity for excess strain. 128-inch wheelbase. Powerful Republic motor. Armored radiator. Republic-Torben-sen internal gear drive. Original truck construction with abundant strength for truck duty. Far outlasts any makeshift. Truck with bodies illustrated below. Write for folder on Republic Special.

Other models are: Republic Dispatch for delivery purposes, \$895. 1-ton with bow top and stake or express body, \$1295. $1\frac{1}{2}$ -ton chassis, \$1650. 2-ton chassis, \$1975. $3\frac{1}{2}$ -ton Dreadnaught chassis, \$2950. 5-ton Thoroughbred chassis, \$4500. All prices f. o. b. factory. We build special farm bodies. Write for book on any model. Address Department B.E.

REPUBLIC MOTOR TRUCK CO., Inc., Alma, Mich.

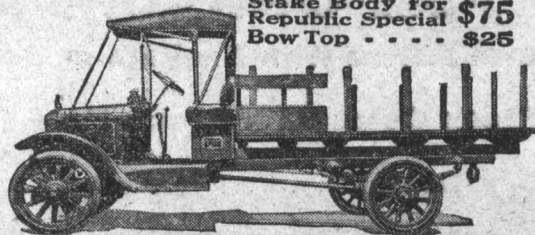
See your nearest Republic Dealer

Dealers and Service Stations in over 1200 Distributing Centers

Express Body for
Republic Special \$75
Bow Top \$25



Stake Body for
Republic Special \$75
Bow Top \$25



INTERNAL GEAR DRIVE

TRUCKS

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND *LIVE STOCK* JOURNAL
PUBLISHED WEEKLY. ESTABLISHED 1843.

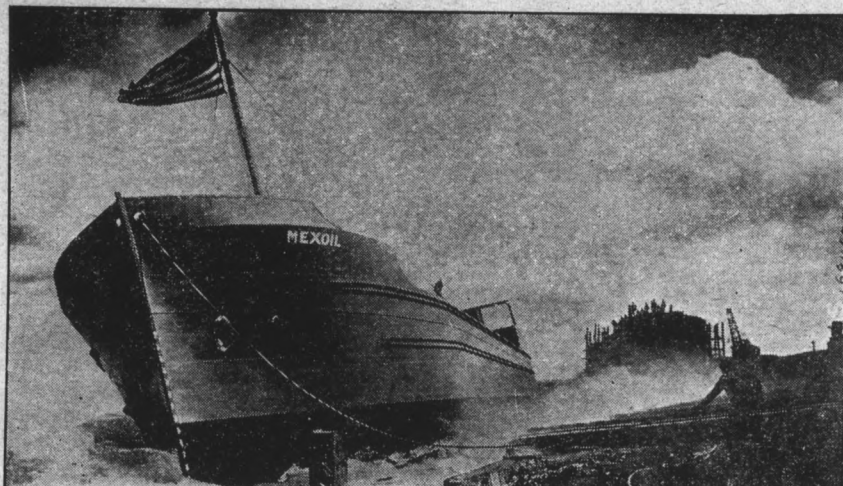
The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

This Magazine Section forms a part of our paper every week. Every article is written especially for it, and does not appear elsewhere

WORLD EVENTS IN PICTURES



This Huge Concrete Tank Furnishes Refuge for Tommies.



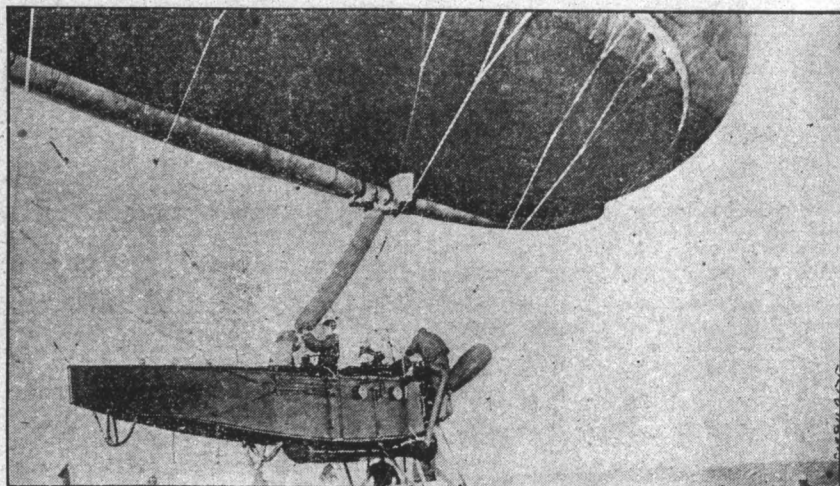
The "Mexoil," First Steel Ship Launched in South. Other Similar Ships Are Being Built at New Orleans.



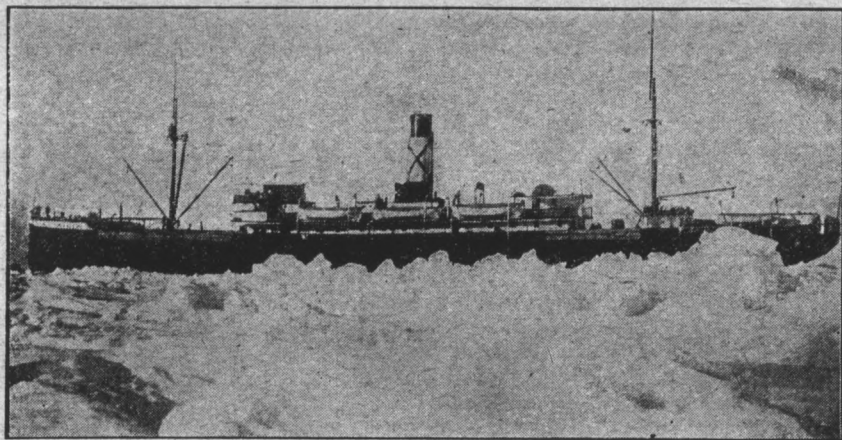
Senator Wadsworth Trying Out New "Browning" Machine Rifle.



American Soldiers Carefully Trained to Don Gas Masks with Much Speed.



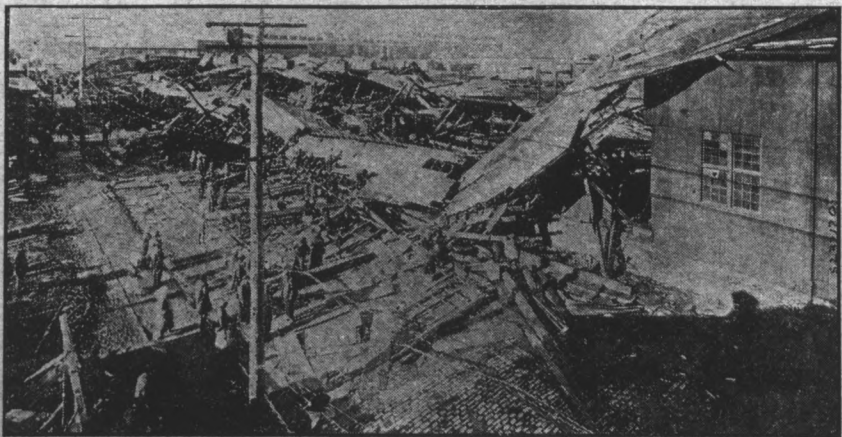
Students of Naval Aviation Being Trained in Management of Dirigibles.



Steamship Florizel Recently Wrecked off Cape Race Once Icebreaker in New York Harbor.



Liberty Lads Find that Football Training Prepares them for the Strenuous Duties of the Trenches.



Buildings Destroyed by Cyclone which Recently Swept Wilmington, Del.



Thorough Instruction of American Troops in Gas Defense of Vital Importance.



"Ball-Band" is the Vacuum Cured Rubber Footwear

This means extra long wear because the Vacuum Process forces rubber and fabric into one solid piece that is tougher than either rubber or fabric separately.

Look for the Red Ball and get the "Ball-Band." For men and women as well as boys and girls.

Write for booklet picturing the different kinds of footwear we make.

MISHAWAKA WOOLEN MFG. CO.
319 Water St., MISHAWAKA, INDIANA
"The House That Pays Millions for Quality"

SAVE ALL The Butter Fat

The "IOWA" Cream Separator saves all the Butterfat because it skims clean under all practical farm conditions. The

"IOWA" CREAM SEPARATOR

outskinned all competing separators in the Official Skimming tests made by the Jury of Dairy Experts at the last World's Fair, 1915. The "IOWA" is the only separator with the famous Patented

CURVED DISC BOWL

Proven BY ACTUAL TESTS to be the World's closest skimming device.

FACTS The booklet "FACTS" tells of the superiority of the "IOWA" with the Curved Disc Bowl. "FACTS" gives results of actual skimming tests on farms and in all leading Agricultural Colleges. Sent FREE on request.

ASSOCIATED MFRS. COMPANY
552 Mulian Avenue
WATERLOO, IOWA, U. S. A.

PATENTED

NOTHING BETTER NOTHING MORE EFFECTIVE

Than the Tower Cultivator for cultivating corn, kaffir corn, sorghum, cotton, beans and other crops. Because they cultivate all the space between the rows and disturb none of the feeding roots.

NATURE'S WAY

Assisting nature assures better growth, earlier maturity and an increased yield. Special bean attachment makes them ideal for bean culture also. If your dealer cannot supply you, let us quote you f. o. b. your town. Ask for catalog.

THE J. D. TOWER & SONS CO.
37TH STREET, MENDOTA, ILL.

When writing to advertisers please mention The Michigan Farmer.

Inside the Lines

By EARL DERR BIGGERS & ROBERT WELLES RITCHIE

Copyright by The Bobbs-Merrill Co.

"I have a little commission for, Jaimihr," General Crandall began, weighing his words with care. "The utmost discretion—you understand?"

"The utmost. I understand," Jaimihr Khan's lips moved ever so slightly, and his eyes looked steadily ahead.

"In the course of a few minutes, Captain Woodhouse, of the signal service, will be here to tea," the general began. The Indian repeated mechanically. "Cap-tain Wood-house."

"As soon as you have ushered him into this room, you will go as quickly as you can to the West Barracks. His room will be No. 36, on the second gallery. You will enter his room with a key I shall give you and search it from end to end—everything in it. Anything that is of a suspicious nature—you understand, Jaimihr, what that might be—you will bring to me at once."

"It shall be done, General Sahib."

"No one, officer or man, must suspect your errand. No one must see you enter or leave that room."

"No one," the Indian repeated.

General Crandall went to a wall safe set by the side of the double doors, turned the combination, and opened it. He took from a drawer therein a bunch of keys, selected one, and passed it to Jaimihr Khan.

"The utmost care, remember," he warned again.

"Is it likely I should fail you this time, General Sahib, when so many times I have succeeded?"

"Make the search complete," General Crandall ignored his servant's question. "But return as quickly as you can. I shall keep Captain Woodhouse here until you do so. You must report to me before he leaves this house."

"When the moment arrives, your servant shall fly, General Sahib," the Indian replied, and withdrew.

"I say, General, you have a great deal of faith in your Indian," Bishop ventured, accepting a cigarette from his superior's case. "Rather a delicate commission you've given him."

"Absolute faith, yes. Been with me five years—picked him up in Rangoon—have tried him many times and found him loyal as any officer in the service." General Crandall put in his words enough emphasis to carry slight rebuke for the other's implied criticism. But the pursy little major was too sure of the fine terms of personal friendship between himself and his superior to feel embarrassment.

"About that girl, General—that cigar girl, Josepha, concerning whom your beach-comber friend sent that warning this morning from the safe ground of Spain—"

"Obvious thing would have been to clap her in a cell," the governor answered. "But I have not, for the very good reason that if there's anything in this fellow's accusations against her, as well as against Woodhouse, the game will be to keep her watched and give our captain an opportunity to communicate with her. Minute he does that—why, we've got our proof against both."

"Then I take it you've put a trailer on the girl?"

"At eight o'clock tonight I'll know where she's been every hour of the day," the general returned confidently. "She can't leave the town without being arrested. Now, as to our plan for Woodhouse's reception—this affair of Craigen's wife; we might as well agree on points, so that—" He heard his wife's voice in the room off the library and broke off abruptly. "Confound it; the women are coming! Just step into my room with me, and we'll go over this little matter, Major."

General Crandall held open a small door at the left of his desk and followed Bishop through. Lady Crandall and Jane entered the library almost at the same time.

"This tea of George's is preposterous," the lady of Government House was grumbling. "Said we must have this man from Egypt here at once."

"If you were English, no tea could be preposterous," Jane countered, with a brave attempt at lightness. She felt each passing moment a weight adding to the suspense of the inevitable event.

"Well, I am going to get it through with just as soon as I can," Lady Crandall snapped. Then Jaimihr Khan threw open the double doors and announced: "Cap-tain Wood-house, my lady."

"Show him up!" she commanded; then in complaint to Jane: "Now where do you suppose that husband of mine went? Just like him to suggest a tea and forget to make an appearance."

Captain Woodhouse appeared between the opened doors in khaki and trim puttees. He stood very straight for an instant, his eyes shooting rapidly about the room. Lady Crandall hurried forward to greet him, and his momentary stiffness disappeared. The girl behind her followed slowly, almost reluctantly. Woodhouse grasped her extended hand.

"It was good of you to send the flowers," she murmured. The man smiled appreciation.

"Do you know," he said, "after I sent them I thought you'd consider me a bit—prompt."

"I am learning something every day—about Englishmen," Jane managed to answer, with a ghost of a smile.

"Always something good, I hope," Woodhouse was quick to retort, his eyes eagerly trying to fathom the cause of the girl's restraint.

Lady Crandall, who had been vainly ringing for Jaimihr Khan, excused herself on the necessity of looking after the tea things. Jane experienced a quick stab of dread at finding herself alone with this man. Unexpected opportunity was urging a decision which an hour of solitude in her room had failed to bring. Yet she trembled, appalled and afraid to speak, before the very magnitude of the moment's exigency. "A spy—a spy!" whispered austere duty. "He will die!" her heart cried in protest.

"Miss Gerson, it's good to see you again and know by your handclasp you have forgiven me for—for what was very necessary at the moment—last night—our meeting in the Splendide." Captain Woodhouse was standing before her now, his grave eyes looking down into hers. The girl caught a deep note of sincerity and something else—something vibrantly personal. Yet her

tongue would not be loosed of its burden.

"A very pretty speech," she answered, with attempted raillery. "I shall think of it on the boat going home."

"I say, I wish you weren't always in that horrid state of mind—on your way home mentally," Captain Woodhouse challenged.

"I shall be so in reality day after tomorrow, I hope," she replied. "Away from all this bewildering war and back in comfortable little old New York." The man seemed genuinely grieved at her announcement.

"New York must be worth while; but I imagine you have nothing picturesque—nothing old there. I'll wager you haven't a single converted monastery like Government House in all your city."

"Not many things in New York have been converted," she answered, with a smile. "Our greatest need is for a municipal evangelist."

False—all false, this banter. She knew it to be, and so she believed he must read it. And the man—his ease of manner was either that of innocence or of supreme nerve, the second not less to be admired than the first. Could it be that behind his serious eyes, now frankly telling her what she dared not let herself read in them, lay duplicity and a spy's cunning.

"I fancy you New Yorkers suffer most from newness—newness right out of the shop," she heard him saying. "But the old things are the best. Just imagine the monks of long-ago yesterday toasting themselves before this ancient fireplace." He waved toward the massive Gothic mantel bridging a cavernous fireplace. An old chime bell green with weathering, hung on a low frame beside the firedogs.

"You're mistaken; that's manufactured antiquity," Jane caught him up. "Lady Crandall told me last night that fireplace is just five years old. One of the preceding governor's hobbies, it was."

Woodhouse caught at her answer with a quick-lifting of the brows. He turned again to feast his eyes on the girl's piquant face, even more alluring now because of the fleeting color that left her cheeks with a tea rose's coldness.

"Miss Gerson, something I have done or said—the man was laboring after words—"you are not yourself, and maybe I am respon—"

She turned from him with a slight shudder. Her hand was extended in mute appeal for silence. He waited while his eyes followed the heaving of her shoulders under the emotion that was racking her. Suddenly she faced him again, and words rushed from her lips in an abandon of terror:

"Captain Woodhouse, I know too much—about you and why you are here. Oh, more than I want to! Accident—bad luck, believe me, it is not my seeking that I know you are a—"

He had started forward at her outburst, and now he stood very close to her his gray eyes cold and unchanging.

(Continued on page 364.)

The PRICE of PEACE
William H. Taft

We are in the war first of all to make the world a safer and better place to live in. We are fighting to bring about a lasting peace. There was a time when many cherished the hope that such a peace could be established by the moral force of public opinion. Now we know that peace has a more terrible price, and we are ready to pay the price.

Genesis of the Tank

By MARK MEREDITH

THE link between the British advance at Cambrai and the siege of Troy is closer than many people think.

In Roman times, when a siege seemed destined to be prolonged to the point of boredom, the general in command of the operations would send for his C. R. E. and bid him see immediately to the construction of a contrivance which, for want of a better name was known as "Turris Mobilis." It consisted of a wooden tower, several stories high, the lowest of which contained a battering ram, and the remainder a miscellaneous collection of catapults and slings, which formed the heavy artillery of the period.

This imposing edifice was mounted on wheels, and relied for its propulsion on a fatigue party of sweating infantrymen. It is easy to imagine the terror which the advance of this monster, slow but inevitable as fate, inspired in the breasts of the defenders.

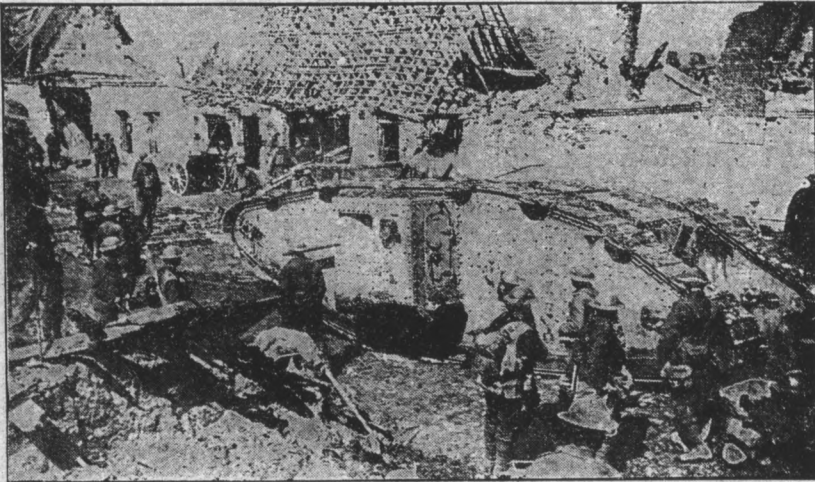
Its use then continued for several centuries, and the Crusaders employed it with considerable success at the siege of Jerusalem. It was only the invention of gunpowder and the growing efficiency of the defense that caused its popularity to wane.

But the present war has seen the

Perhaps the earliest practical solution of the problem was made by Colonel E. D. Swinton who, in October, 1914, proposed to the Committee of Imperial Defense, that heavy armored cars could be built on the principle of the "caterpillar" tractor. The same idea had occurred to officers in the R. N. S. A. and the necessary experimental work was entrusted to an admiralty committee, reinforced by representatives of the war office and ministry of munitions.

The conditions which this new weapon must fulfil were of necessity extremely exacting. It should be able to climb a five-foot parapet and cross a ten-foot ditch. In weight and width it had to conform to road and transport requirements. Its height had to be restricted. It must be invulnerable to machine-gun fire and capable of destroying the enemy's emplacements. The path of the experimenters was strewn with difficulties and disappointments. Type after type of machine was tried, only to break down when the burden of war was imposed on it.

Finally, however, in February, 1916, a machine was completed, and taken down to a park near London, where preparations had been made for the most exacting tests. So satisfactory



British Tank Going Into Action.

revival of many old and long-forgotten methods of destruction. In the period of stagnation which followed the battles of the Aisne and the Marne, the instincts of both sides led them to draw closer together. The riband of No-Man's Land which separated the opposing forces narrowed in places to a width of less than fifty yards.

New conditions composed new weapons, though most of the new weapons were only improvements on older inventions. The trench catapult is a descendant of the ballista of Caesar, the hand grenade goes back to the middle ages, Marlborough's men mined and counter-mined in those same flat fields of Flanders.

The Germans made characteristic contributions in the shape of poison gas and liquid fire, which, under the name of Greek fire, has long been forbidden in warfare between civilized nations. Experiments were made, by both French and British, with a sort of shield on wheels which the infantryman was to propel in front of him, and which gave some protection from rifle and machine-gun fire; but the device was too cumbersome to be of much practical value.

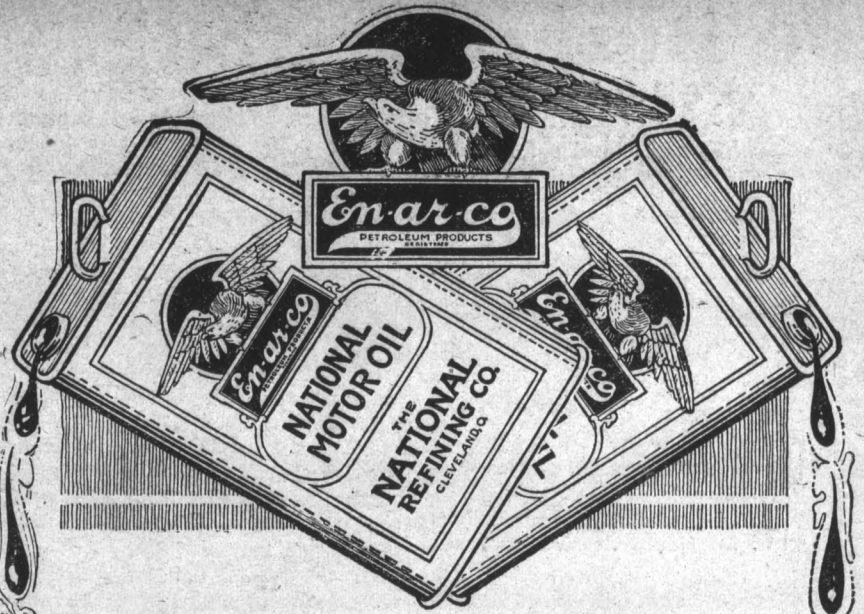
"What was really wanted was a machine which would tackle the German machine-guns and clear a path through the barbed wire entanglements for the infantry; in fact, a re-incarnation, on a far bigger scale of the old "Turris Mobilis." One bold prophet suggested a huge land cruiser one hundred feet long, fifty feet high, and eighty feet wide, weighing some three hundred tons, propelled by an 800-horsepower engine, and with driving wheels having a diameter of forty feet.

was the result that an order was given for the construction of one hundred machines of the same design. Owing to difficulties of manufacture and the obvious necessity for distributing the work among as many different firms as possible, it was not until July, 1916, that the first batch of "Tanks" were introduced to the men who were going to use them.

These men and their officers had been carefully selected early in the year. One essential was that they must combine a knowledge of the internal combustion engine with a love of adventure. There were chauffeurs, mechanics and motor-cyclists among their number there were men who had felt the tug of a "big single" beneath them on a six-day trial or had heard the song of the wind on Brooklands Track. Their joy and astonishment can be imagined when, after several weary months of routine-work at Bisle, they were at last brought face to face with their new engine of destruction.

But the "Tanks" never came to Bisle. A place had been prepared for them in a remote part of the country far from prying eyes. And here, behind tall fences and inside a watchful cordon of sentries, the Heavy Section of the Machine-Gun Corps, as the new arm was called, learned their new business. And there was much to be learned. There was no room for specialists. To allow for casualties, each man must know how to drive, steer and execute minor repairs.

If there was much to be learned, there was also much to endure. Imagine a narrow cabin, some nine feet wide, thirteen feet long, and four feet



En-ar-co National Motor Oil For Farm Service

SCIENCE produced this dependable oil for extraordinary service. Time has proved it more economical, more satisfactory for every type of motor.

Where duty demands utmost power—in field, in air or on the road—there En-ar-co conquers the resisting force of friction and lightens the load.

Used in any tractor or automobile, a new and increased power is quickly developed. Try it now and note the higher compression. Note how it stands up day in and day out, month after month. And note, too, its freedom from excessive carbon.

All other En-ar-co Petroleum Products for farm use are of equal high quality. The name En-ar-co identifies the dependable and guarantees quality. For better service, try

En-ar-co Black Beauty Axle Grease En-ar-co Motor Grease
En-ar-co Black Star Harness Oil

En-ar-co White Rose Gasoline

En-ar-co National Light Oil for Lamps,
Stoves, Incubators

The National Refining
Company

Branch Offices in 77 Cities

General Offices:

Cleveland,
Ohio

This Handy Oil Can FREE
SEND THIS COUPON

The
National
Refining Co.
1382 Rose Bldg.
Cleveland, Ohio

I own.....automobile or tractor
(Give Name Above)

and enclose one 3-cent stamp. Send me
Handy Oil Can FREE. Please give nearest shipping
point in this state and quote prices on the items
I have marked. I will be in the market about

I use...gals. gasoline per year. I use...auto grease per year
I use...gals. motor oil per year. I use...gals. kerosene per year
I use...lbs. axle grease per year. I use...gals. tractor oil per year

My Name is.....

Address

Postoffice..... County..... State.....

"The Best Pumps I Ever Saw"

"I have three pumps of your make and they are the best pumps I ever saw," writes F. M. Polk, Tobinsport, Ind. No wonder! For they are backed by 69 years' pump-making experience. Remember, we guarantee every one of

GOULDS PUMPS

FOR EVERY SERVICE

to fully perform the work for which it is recommended. Write today for new free

book, "Pumps for Every Service."

Ask our Service Dept. to help you

Address Dept. 19.

Goulds
Fig. 853
Lift and Force
Pump for hand
pumping

Goulds
Fig. 1604
for pumping
water and air
into air-pressure
water systems

The Goulds Mfg. Co.
Main Office and Works
Seneca Falls, N. Y.

BRANCHES:
New York Chicago
Boston Atlanta Houston
Philadelphia Pittsburgh

PLANT A WAR GARDEN

THIS FREE BOOK TELLS HOW—

It's a complete, beautifully illustrated, informative, concise dictionary of gardening and fruit culture! Combines the boiled down good things of all good seed books! Representative of our pure, tested seed, every one of which you plant is a shot at the "Enemy" Every garden furrow a trench in which to do your part. Feed yourself—"Food will win the war"—produce your share, and cut down living cost. Send your own name and name of one neighbor who also plants a garden and we will send this 1918 Planting Guide and Pure Seed book postpaid.

Better still, to get acquainted and be ready for early spring planting, enclose \$1.00 for our prepaid and specially selected WIN-THE-WAR GARDEN (sufficient for family of 6 all summer and fall) of peas, beans, corn, onions, lettuce (2 kinds), beets, tomatoes, radishes (2 kinds), muskmelons, turnips, carrots, cabbage, parsley, squash and cucumbers; and to please the women we have added packets of Giant Flowering Sweet Peas and Victoria Asparagus. Order early. Satisfaction guaranteed or money back.

GALLOWAY BROS. & CO., Waterloo, Iowa
Dept. 18 "The Big Seed House with the Little Ads"

MAKE YOUR BIKE A MOTORCYCLE

at a small cost by using our Attachable outfit. FITS ANY BICYCLE. Easily attached. No special tools required. Write today for bar-
FREE BOOK
gain list and free book describing the SHAW Bicycle Motor Attachment. Motorcycles, all makes new and second-hand, \$35 and up.

SHAW MANUFACTURING CO.
Dept. 225, Galesburg, Kansas.

LANDOLOGY

A magazine giving the FACTS in regard to the land situation. 3 months' trial subscription FREE. If for a home or investment, you are thinking of buying good farm land, simply write me a letter and say, "Mail me LandoLOGY and all particulars free." Address:
EDITOR, LANDOLOGY, Skidmore Land Co.,
308 HALL AVE., MARINETTE, WIS.

90 Bushels Per Acre

Mr. A. J. Woolen writes: "I arrived in Canada with practically nothing. Nevertheless I made good, and my first crop of oats went on an average 90 bushels to the acre."

Mr. Woolen is only one of thousands of farmers who have made good in Western Canada. Government statistics show the average yield of oats per acre is 53½ bushels; of wheat 30 bushels.

Wheat --- 30 bu.
Oats --- 53½ bu.
Potatoes --- 148 bu.
Barley --- 37 bu.
Rye --- 27½ bu.
Flax --- 13½ bu.

This is the 1915 average per acre from Government statistics.

128,000 FREE FARMS!

Whether you have capital to buy land or not, there is a farm for you in Canada. You can get one of the recently surveyed 160-acre fertile homesteads along the Canadian Northern Railway. Here you have the same opportunity to succeed as did Mr. Woolen. First comers get choicest locations.

Best Farm Lands \$15 to \$25 Per Acre

Thousands of acres of specially selected centrally located land, close to the railway, can be purchased on easy cash payments, or part cash and part crop payments. Here are modern free schools, good transportation, telephones and automobile roads. Crops produced can only be equalled on farms costing \$150 to \$200 per acre in more densely settled communities.

Special Low Fares—The Canadian Northern Railway, which takes you to all parts of this territory, provides special low fares to home-seekers and settlers.

Send for FREE Book

Write today for your free copies of the "Home-Seekers' and Settlers' Guide" and government literature. The Guide is full of interesting and valuable information based on government returns and it tells you exactly how to make a home in Western Canada. Here is a home and wealth for you.



Canadian Northern Railway
F. X. SHAW, G. A.;
527 Majestic Bldg.,
Detroit, Mich.



Healthy Grain

Seeds grow faster and mature into good healthy grain when first freed from smuts by using

FORMALDEHYDE
The Farmer's Friend

This powerful disinfectant destroys grain smuts and fungus growth. Every up-to-date farmer should use Formaldehyde. It has the supreme endorsement of the U. S. Dept. of Agriculture. Our Formaldehyde in one pint bottles costs 35 cents and treats 40 bushels of grain. Big illustrated hand book sent free on request.

PERTH AMBOY CHEMICAL WORKS
100 William Street New York

BETTER CULTIVATION AT LOWER COST

The KRAUS

cultivates each row closer, cleaner at half the labor cost. Makes sharp turns, gets into corners, follows crooked rows.

Cultivates Hillsides as Easily as Level Ground.

Made in high and low wheel, also KRAUS PIVOT GANG. Any boy can operate it. A touch of the foot steers the shovels and wheels to right or left. Lasts three times as long as any other Cultivator.

Good farmers everywhere say KRAUS PIVOT AXLE CULTIVATORS put dollars in their pockets every year. These days good farming methods pay quick rewards.

YOU CAN'T AFFORD THE OLD WAY

The Akron Fertilizer Attachment applies commercial fertilizer while cultivating.

Write to-day for your copy of valuable free book. THE AKRON CULTIVATOR CO., Dept. 63 Akron, Ohio.

FOR SALE

Drain Tile factory in operation. Absolute guaranteed sale of entire output 40 acres land, good buildings and equipment. Other interests make present owner desirous of disposing of this business. Experience unnecessary. Will pay for itself in four years. Will consider income property in exchange or terms. Full particulars address C. D. PEET, care of Republic Motor Truck Co., Alma, Mich.

high, into which there had to be crammed an engine of over one hundred horsepower, two guns, and three or four machine guns, provisions for three days, ammunition and equipment. The crew had to learn a new language of signs, for the noise of the engine made speech impossible. They could only see through tiny chinks, in the armor plating. The heat was oppressive, and the motion of a tank over rough ground was akin to that of a destroyer in a heavy sea.

The secret of their existence was well and loyally kept, especially considering the number of people who had for various reasons to be admitted into the conspiracy. The story of the artifices that were resorted to, to cloak their real identity and destination is one of the romances of the war. It is an old tale now, how they went on their travels as tanks labeled in the most innocent fashion. "Drinking water only. For Mesopotamia via Petrograd."

At the end of July they were given an opportunity of displaying their merits before the King and the general staff, over a specially prepared system of trenches, which was an exact model of a portion of the British and German front in France. The distinguished audience watched these leisurely brutes go through every trick in their repertoire; saw them stalk deliberately over walls and ditches, through bog and marsh, breaking down barbed wire fences and parapets that stood in their way, as though they were made of wool. So impressive was the performance that orders were given for them to be made ready for France.

On August 29, 1916, fifty tanks were landed in France. Their arrival in the front line was destined to justify the confidence that had been reposed in them, and to mark a new period in the progress of the offensive of the Somme.

INSIDE THE LINES

(Continued from page 362).

"Say it—say the word! I'm not afraid to hear it," he commanded tensely. She drew back from him a little wildly, her hands fluttering up as if to fend him off.

"You—you are in great danger this minute. You were brought here this afternoon to be trapped—exposed and made—"

"I was fully aware of that when I came, Miss Gerson," he interrupted. "The invitation, coming so suddenly—so pressing—I think I read it aright."

"But the promise you gave me last night!" Sudden resentment brushed aside for the instant the girl's first flood of sympathy. "That has involved me with you. Oh, that was unfair—to make me promise I would not allude to—to our first meeting!"

"Involved you?" He closed one of her hands in his as if to calm her and force more rational speech. "Then you have been—"

"Questioned by General Crandall—about you," she broke in, struggling slightly to free her hand. "Questioned—and even bullied and threatened."

"And you kept your promise?" The question was put so low Jane could hardly catch it. She slowly nodded.

"Miss Gerson, you will never have cause to regret that you did." Woodhouse pressed her hand with almost fierce intenseness, then let it go. Her face was flaming now under the stress of excitement. She knew tears stood in her eyes, and was angered at their being there; he might mistake them. Woodhouse continued, in the same suppressed tone:

"You were on the point of using a word a minute ago, Miss Gerson, which was hard for you to voice because you thought it an ugly word. You seemed sure it was the right word to fit me. You only hesitated out of—ah—decency. Yet you kept faith with me before General Crandall. May I hope that means—"

Quick rebellion at what she divined to

be coming flamed in Jane's eyes. "You have no right to hope for more from me than what you forced by promise. I would not be saying what I have to you if—I did not feel I—that your life—"

"You misunderstood," he broke in stiffly. "I was on the point of saying I hoped you would not always believe me a—"

"Not believe!" Her hand went to the broad ribbon belt she wore and brought out the silver cigarette case. This she passed to him with a swift gesture.

"Almer, the Hotel Splendide man, gave me this today at parade, urging that I deliver it to you." She was speaking hurriedly. "By a miracle—the strangest circumstance in the world—I learned the message this cigarette case was to carry to you. Oh, no, innocently enough on my part—it came by a chance I must not take the time to explain."

"A message from—Almer to me?" Woodhouse could not conceal the start her words gave him. He took a step toward her eagerly.

"Yes, a message. You must have it to protect yourself. The message was this:

"Informers has denounced you and Louisa to—"

Her voice died in her throat. Over Captain Woodhouse's shoulder she saw a door open. General Crandall and a short fat man in officer's uniform entered the library.

CHAPTER XV.

GOOD afternoon, Captain Woodhouse. General Crandall came forward and shook the captain's hand cordially. "Miss Gerson, Major Bishop, of my staff."

Jane acknowledged the introduction. Major Bishop advanced to the meeting with Woodhouse expectantly. With an air of ill-assumed ease, the governor made them known to each other.

"Major Bishop, your new man in the signal tower, Captain Woodhouse, from Wady Halfa. Captain, do you happen to remember the major? Was a captain when you were here on the Rock—Captain in the engineers."

"I'm afraid we never met," Woodhouse began easily. "I was here such a short time. Expected to meet Major Bishop when I reported at his office this morning, but he was over at the wireless station, his aid told me."

"Right, Captain!" Bishop chirped, shaking his subordinate's hand. "I—ah—imagine this is the first time we've met." He put the least shade of emphasis on the verb.

Woodhouse met his eyes boldly. Lady Crandall, bustling in at this minute, directed a maid where to wheel the tea wagon, while Jane went to as-

MOLYBDENUM.

Molybdenum plays an important and increasing part in the present war for both the Allies and the Germans. Used in hardening the steel which is employed in rifling the big guns, it has increased the life of the guns twenty times, and many projectiles are also hardened with molybdenum, as well as a great deal of armour plate which was formerly hardened with tungsten or vanadium. It is estimated, too, that the amount of molybdenum required to harden steel is only about one-half to one-third the amount of tungsten which is necessary to give the same result. Curiously enough, molybdenum is used also as a stabilizer in some high explosives, smokeless powders, and to make a dense smoke in the location bombs, which are fired previous to the firing of the projectiles. It is used in many chemicals and in dyes for leather, rubber, silk, as a disinfectant, for fire-proofing, and in some in place of platinum, while in electric lights it has replaced other metals which were previously used for the support of the filament.

sist her with the pouring. The men soon had their cups, and the general and major contrived to group themselves with Woodhouse sitting between them. Sir George, affecting a gruff geniality, launched a question:

"Rock look familiar to you, Captain?"

"After a fashion, yes," Woodhouse answered slowly. "Though three months is so short a time for one to get a lasting impression."

"Nonsense!" the general reproved gustily. "Some places you see once you never forget. This old Rock is one of them; eh, Bishop?"

"I don't know," the chunky little officer replied. "The powers back home never give me a chance to get away and forget." There was a pause as the men sipped their tea. Woodhouse broke the silence:

"Man may be stationed in worse places than Gibraltar."

"If you mean Egypt, I agree with you," Crandall assented. "There six years."

"Were you, General? What station?" Woodhouse was coolly stirring his tea, emphatically at his ease. Jane, her back to the men as she fussed over the tea wagon, filled her own cup with hot water inadvertently. She tried to laugh over the mistake, but her fingers trembled as she poured the water back into the kettle.

"Not on the lazy old Nile, as you were—lucky dog!" the general returned. "Out on the yellow sands at—Arkowan—a place in the sun, never fear!"

The women had their cups now, and joined the men, sitting a little behind. Jane caught a shrewd sidewise glance from the general—a glance that sought a quick and sure reading of her emotions. She poised her cup as if expecting a question and the glance turned aside. But it had warned the girl that she was not altogether a passive factor in the situation. She set a guard over her features.

"Let me see, Captain Woodhouse"—it was little Bishop who took up the probe—"you must have been here in the days when Craigen was governor—saw your papers have it that you were here three months in nineteen seven."

"Yes, Craigen was governor then," Woodhouse answered guardedly.

"You never saw him, General." Bishop turned to Sir George. "Big, bluff, blustering chap, with a voice like the bull of Bashan. Woodhouse, here, he'll recognize my portrait."

Woodhouse smiled—secret disdain for the clumsy trap was in that smile.

"I'm afraid I do not," he said. Craigen was considered small, almost a delicate, man." He had recognized the bungling emphasis laid by Bishop on the Craigen characteristics; and his answer was pretty safely drawn by choosing the opposites. Bishop looked flustered for an instant, then admitted Woodhouse was right. He had confused Sir David Craigen with his predecessor, he said in excuse.

"I fancy I ought to remember the man. I had tea in this very room with him several times," Woodhouse ventured. He let his eyes rove as if in reminiscence. "Much the same here—as—except, General Crandall, I don't recall that fireplace." He indicated the heavy Gothic ornament on the opposite side of the room.

Jane caught her breath under the surge of secret elation. The resource of the man so to turn to advantage a fact that she had carelessly given him in their conversation of a few moments back! The girl saw a flicker of surprise cross General Crandall's face. Lady Crandall broke in:

"You have a good memory, after all, Captain Woodhouse. That fireplace is just five years old."

"Um—yes, yes," her husband admitted. "Clever piece of work, though. Likely to deceive anybody by its show of antiquity."

General Crandall called for a second slice of lemon in his cup. He was obviously sparring for another opening, "Did you happen to be present, Captain, at the farewell dinner we gave little Billy Barnes? I think it must have been in the spring you were here."

"There were many dinners, Major Bishop." Woodhouse was carefully selecting his words, and he broke his sentences with a sip from his cup. "Seven years is a long time, you know. We had much else to think about in Egypt than old dinners elsewhere."

Bishop appeared struck by an inspiration. He clapped his cup into his saucer with a sudden bang.

"Hang it, man, you must have been here in the days of Lady Evelyn. Remember her, don't you?"

Would I be likely to forget?" the Captain parried. Out of the tail of his eye he had a flash of Jane Gerson's white face, of her eyes seeking his with a palpitant, hunted look. The message of her eyes brought to him an instant of grace in sore trial.

"Seven years of Egypt—or of a hotter place—couldn't make a man forget her!" The major was rattling on for the benefit of those who had not come under the spell of the charmer. "Sir David Craigen's wife, and as lovely a woman as ever came out from England. Every man on the Rock lost his heart that spring. Woodhouse, even in the three months' time you must have fallen like the rest of us."

"I'd rather not incriminate myself." Woodhouse smiled sagely as he passed his cup to Lady Crandall to be refilled.

"Don't blame you," Bishop caught him up. "A most outrageous flirt, and there was the devil to pay. Broken hearts were as thick on the Rock that year as strawberries in May, including poor Craigen's. And after one young subaltern tried to kill himself—you'll remember that, Woodhouse—Sir David packed the fair charmer off to England. Then he simply ate his heart out and—died."

"What an affecting picture!" Jane commented. "One lone woman capturing the garrison of Gibraltar!"

General Crandall rose to set his cup on the tea wagon. With the most casual air in the world, he addressed himself to Woodhouse:

"When Sir David died, many of his effects were left in this house to await their proper owner's disposition, and Lady Craigen has been—er—delicate about claiming them. Among them was the portrait of Lady Craigen herself which still hangs in this room. Have you recognized it, Captain?"

Woodhouse, whose mind had been leaping forward, vainly trying to divine the object of the Lady Evelyn lead, now knew, and the knowledge left him beyond his resources. He recognized the moment of his unmasking. But the man's nerve was steady, even in extremity. He rose and turned to face the rear wall of the library, against the tapestry of which hung four oil portraits in the deep old frames of heavy gold. Three of these were of women. A fourth, also the likeness of a woman, hung over the fireplace. The chances were four to one against blind choice.

(Continued next week.)

SPRING.

BY L. M. THORNTON.

Spring has a thousand voices,
A thousand notes of song,
And every heart rejoices
Her chorus to prolong.
She sings of brooklets dancing
Along a pebbled way,
Of forest glades entrancing
And blue birds' roundelay.

Spring hath a thousand glories,
A thousand fairy bands,
She tells us wondrous stories,
She reaches lavish hands.
Her gifts are golden fruited,
She pledges joy divine;
In goblets willow-fluted
Of maple-sweetened wine.



You Feed The World

And to deliver on this big contract you need the car more than ever.

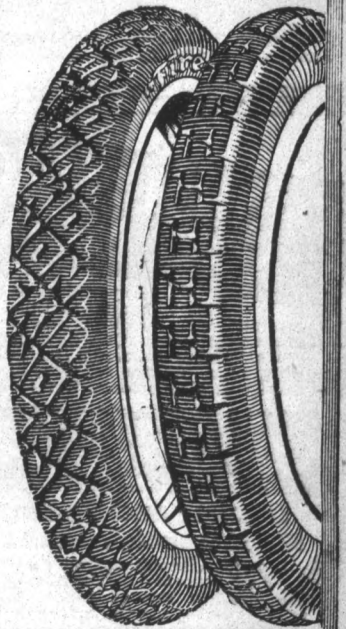
AND it is important that the car be equipped with the tires that keep it going steadily, the year through at lowest upkeep cost. With Firestone equipment it is practically certain that your car will carry you wherever the work calls. They will get you there in comfort and on time, regardless of road and weather.

FUEL-SAVING WITH FIRESTONE CORD TIRES. The added size, with extreme flexibility of Firestone Cord Tires, means remarkable economy of fuel. There is easier, quicker response, an activity that supplements the motor power and gives the long coast with engine idle. This flexibility means, also, shocks absorbed, stone bruise and other injury avoided, longer tire life and they give road grip that means safe and confident travel.

FURTHER IMPROVED FIRESTONE FABRIC TIRES. Your car should have the benefit of the Firestone mileage features, the tougher, thicker tread, the added cushion stock and rubber between fabric layers. All these advantages increase resiliency and strength, giving you greatest comfort and longest wear. While doing your best in every hour of a long working day see that you have the most helpful facilities possible. In tires that means Firestone. Ask your dealer.

FIRESTONE TIRE & RUBBER CO., Akron, O., Branches and Dealers Everywhere

Firestone Tires



Win the War By Preparing the Land Sowing the Seed and Producing Bigger Crops

Work in Joint Effort the Soil of the U. S. and Canada—Co-operative Farming in Man Power Necessary to Win the Battle for Liberty

The Food Controllers of United States and Canada are asking for greater food production. Scarcely 100,000,000 bushels of wheat can be sent to the allies overseas before the crop harvest. Upon the efforts of the United States and Canada rest the burden of supply.

Every Available Tillable Acre must Contribute; Every Available Farmer and Farm Hand must Assist.

Western Canada has an enormous acreage to be seeded but man power is short and an appeal to the United States allies is for more men for seeding operations.

Canada's Wheat Production last Year was 225,000,000 Bushels; the demand from Canada alone, for 1918, is 400,000,000 Bushels.

To secure this she must have assistance. She has the land but needs the men. The Government of the United States wants every man who can effectively help to do farm work this year. It wants the land in the United States developed first of course; but it also wants to help Canada. Whenever we find a man we can spare to Canada's fields after ours are supplied, we want to direct him there. Apply to our Employment Service, and we will tell where you can best serve the combined interests.

Western Canada's help will be required not later than April 5 th. Wages to competent help, \$50 a month and up, board and lodging.

Those who respond to this appeal will get a warm welcome, good wages, good board, and find comfortable homes. They will get a rate of one cent a mile from Canadian boundary points to destination and return.

For particulars as to routes and places where employment may be had, apply to

U. S. Employment Service,
Dept. of Labor.

FREE PLANT BOOK about our Strawberries and other small fruits. We guarantee our Hardy NORTHERN GROWN Plants to please. Our system of selling direct SAVES you MONEY. ST. JOSEPH NURSERY, 124 Main St., St. Joseph, Mich.

WHOLESALE PRICES. on Strawberry Plants. Many other varieties and garden roots at reasonable prices. Catalogue FREE. Write today to A. H. Weston & Co., Bridgman, Mich.

STRAWBERRIES
Famous Progressive Improved Everbearing. Large and juicy. Also wonderful for canning and preserves. Guaranteed to bear first year or money back.
100 EVERBEARING PLANTS FOR \$1.50
Our special advertising offer. Try them on our guarantee that they will bear from spring clear to frost. Thousands now enjoy them. Big Nursery catalog free. Prepaid.
Earl Ferris Nursery Co., 505 Bridge St., Hampton, Iowa

Strawberry Plants That Grow

"PROGRESSIVE" Best Fall-Bearer; Also Standard June sorts, including our new seedling, "Collins." Raspberry, Blackberry, and Grape Plants in Assortment. Catalog Free.

C. E. WHITTEN'S NURSERIES,
Box 14, Bridgman, Mich.

For That War Garden Progressive Everbearing Strawberries

Plants set April 1, have produced \$1,000 worth of fruit per acre before the first snow flies in November. Most bountiful and desirable of all garden products. Introduced by us 1913. The most valuable of all varieties today and growing better every year. Be sure you get the genuine. 100 plants postpaid \$1.25.

Other Best Varieties—List FREE

C. N. FLANSBURGH & SON, Jackson, Mich.

Grow Everbearing Strawberries

And get a crop four weeks after planting. Large, sweet, luscious berries for your table every day until ground freezes. Send for our Illustrated Plant Catalog. Its free. Describes all kinds of Berry Plants.

Bridgman Nursery Co., Box 3, Bridgman, Mich.

EVERBEARING STRAWBERRY

Our free Catalog describes and illustrates a full line of choice small fruit plants. Send for it. J. N. ROSELY, R. 8, Bridgman, Mich.

Strawberry Plants

1000 for \$2 Everbearing at \$1 per 100. All kinds at other prices. Raspberries, grapes, everything to plant. Free catalog of bargains. Write the ALLEGAN NURSERY, Box 209, Allegan, Mich.

For Sale "Francis" fall bearing strawberry plants \$1.50 per 100. \$10.00 per 1000. W. F. TINDALL, Boyne City, Mich.



Red Seal Dry Batteries

Honestly made and absolutely guaranteed for

Auto, Gas Engine and Tractor Ignition

For Bells, Phones, Hand Lanterns, etc.

Free Book

Every engine owner needs our handy engine book—used in colleges and technical schools but written in plain United States. Sent FREE. Please mention dealer's name.



MANHATTAN ELECTRICAL SUPPLY CO., INC.
104 S. Wells St., Chicago
New York St. Louis San Francisco
Factories: Jersey City, St. Louis, Ravenna, Ohio

DITCHING EASY NOW

Farmers, do you know about this wonderful tool that is revolutionizing farming? Solves the drainage problem. Cuts down labor cost and insures big crops. Does work of 100 men. Get the full story in the new free drainage book. Write for it.

THE Martin
O.D. & CO.

Ditcher and Grader

All Steel, Reversible, Lasts a Lifetime

Simple and practical. Cuts V-shaped ditch down to 4 ft. deep; cleans old ditches; grades roads, builds farm terraces, dikes and levees; works in any soil, wet or dry.

24 and 6-horse sizes, large size fine for tractor. Write for catalog and list of users. No charge.



Owensboro Ditcher & Grader Co.
Box 715
Owensboro, Ky.

ISBELL'S Vegetables Dependable

Be prepared to have the finest, most productive vegetable garden you ever had, by planting only Isbell seeds. Known the country over as the sure crop kind. Grown in Michigan, and sold direct. Isbell's New 1918 Catalog shows many famous pedigreed strains. It's a valuable book and guide to bigger and better yields.

Prove By Test

Prove the quality and germination of Isbell seeds before you plant. A new way to buy sure crop seeds that means many dollars to you. Send for your catalog today.

S. M. ISBELL & CO.
929 Mechanic St.
Jackson, Mich.



TIMOTHY SEED \$4.00 per bushel. High purity and germination. Timothy-Alsike Mixture \$4.50 per bushel, 45 lbs. Bags extra at 25c. each. YOUNG-RANDOLPH SEED CO., Owosso, Mich.

The Grizzly King

By JAMES OLIVER CURWOOD
Copyright by Paget Newspaper Service

He had not finished the violet when suddenly he stopped. For a half-minute he stood like a statue. Muskwa jumped and shook himself. Then he listened. A sound came to both of them. In one slow, graceful movement the grizzly reared himself to his full height. He faced the north, his ears thrust forward, the sensitive muscles of his nostrils twitching. He could smell nothing, but he heard!

Over the slopes which they had climbed there had come to him faintly a sound that was new to him, a sound that had never before been a part of his life. It was the barking of dogs.

For two minutes Thor sat on his haunches without moving a muscle of his great body except those twitching thews in his nose.

Deep down in this cup under the mountain it was difficult even for sound to reach him. Quickly he swung down on all fours and made for the green slope to the southward, at the top of which the band of sheep had slept during the preceding night. Muskwa hurried after.

A hundred yards up the slope Thor stopped and turned. Again he reared. Now Muskwa also faced to the north. A sudden downward drift of the wind brought the barking of the dogs to them clearly.

Less than half a mile away Langdon's pack of trained Airedales were hot on the scent. Their baying was filled with fierce excitement which told Bruce and Langdon, a quarter of a mile behind them, that they were close upon their prey.

And even more than it thrilled them did the tongueing of the dogs thrill Thor. Again it was instinct that told him a new enemy had come into his world. He was not afraid. But that instinct urged him to retreat, and he went higher until he came to a part of the mountain that was rough and broken, where once more he halted.

This time he waited. Whatever the menace it was drawing nearer with the swiftness of the wind. He could hear it coming up the slope that sheltered the basin from the valley.

The crest of that slope was just about on a level with Thor's eyes, and as he looked the leader of the pack came up over the edge of it and stood for a moment outlined against the sky. The others followed quickly, and for perhaps thirty seconds they stood rigid on the cap of the hill, looking down into the basin at their feet and sniffing the heavy scent with which it was filled.

During those thirty seconds Thor watched his enemies without moving, while in his deep chest there gathered slowly a low and terrible growl. Not until the pack swept down into the cup of the mountain, giving full tongue again, did he continue his retreat. But it was not flight. He was not afraid. He was going on—because to go on was his business. He was not seeking trouble; he had not desire even to defend his possession of the meadow and the little lake under the mountain. There were other meadows and other lakes, and he was not naturally a lover of fighting. But he was ready to fight.

He continued to rumble ominously, and in him there was burning a slow and sullen anger. He buried himself among the rocks; he followed a ledge with Muskwa slinking close at his heels; he climbed over a huge scrap of rock, and twisted among boulders half as big as houses. But not once did he go where Muskwa could not easily follow. Once, when he drew himself from a ledge to a projecting seam of standstone higher up, and found that

Muskwa could not climb it, he came down and went another way.

The baying of the dogs was now deep down in the basin. Then it began to rise swiftly, as if on wings, and Thor knew that the pack was coming up the green slide. He stopped again, and this time the wind brought their scent to him full and strong. It was a scent that tightened every muscle in his great body and set strange fires burning in him like raging furnaces. With the dogs came also the man-smell!

He traveled upward a little faster now, and the fierce and joyous yelping of the dogs seemed scarcely a hundred yards away when he entered a small open space in the wild upheaval of rock. On the mountain-side was a wall that rose perpendicularly. Twenty feet on the other side was a sheer fall of a hundred feet, and the way ahead was closed with the exception of a trail scarcely wider than Thor's body by a huge crag of rock that had fallen from the shoulder of the mountain. The big grizzly led Muskwa close up to this crag and the break that opened through it, and then turned suddenly back, so that Muskwa was behind him. In the face of the peril that was almost upon them a mother-bear would have driven Muskwa into the safety of a crevice in the rock wall. Thor did not do this. He fronted the danger that was coming, and reared himself up on his hind quarters.

Twenty feet away the trail he had followed swung sharply around a projecting bulge in the perpendicular wall, and with eyes that were now red and terrible, Thor watched the trap he had set.

The pack was coming full tongue. Fifty yards beyond the bulge the dogs were running shoulder to shoulder, and a moment later the first of them rushed into the arena which Thor had chosen for himself. The bulk of the horde followed so closely that the first dogs were flung under him as they strove frantically to stop themselves in time.

With a roar Thor launched himself among them. His great right arm swept out and inward, and it seemed to Muskwa that he had gathered a half of the pack under his huge body. With a single crunch of his jaws he broke the pack of the foremost hunter. From a second he tore the head so that the windpipe trailed out like a red rope.

He rolled himself forward, and before the remaining dogs could recover from their panic he had caught one a blow that sent him flying over the edge of the precipice to the rocks a hundred feet below. It had all happened in half a minute, and in that half-minute the remaining nine dogs had scattered.

But Langdon's Airedales were fighters. To the last dog they had come of fighting stock, and Bruce and Metoosin had trained them until they could be hung up by their ears without whimpering. The tragic fate of three of their number frightened them no more than their own pursuit had frightened Thor.

Swift as lightning they circled about the grizzly, spreading themselves on their forefeet, ready to spring aside or backward to avoid sudden rushes, and giving voice now to that quick, fierce yapping which tells hunters their quarry is at bay. This was their business—to harass and torment, to retard flight, to stop their prey again and again until their masters came to finish the kill. It was a quite fair and thrilling sport for the bear and the dogs.

The man who comes up with the rifle ends it in murder.

But if the dogs had their tricks, Thor also had his. After three or four vain rushes, in which the Airedales eluded him by their superior quickness, he backed slowly toward the huge rock beside which Muskwa was crouching, and as he retreated the dogs advanced.

Their increased barking and Thor's evident inability to drive them away or tear them to pieces terrified Muskwa more than ever. Suddenly he turned tail and darted into a crevice in the rock behind him.

Thor continued to back until his great hips touched the stone. Then he swung his head sidewise and looked for the cub. Not a hair of Muskwa was to be seen. Twice Thor turned his head. After that, seeing that Muskwa was gone, he continued to retreat until he blocked the narrow passage that was his back door to safety.

The dogs were now barking like mad. They were drooling at their mouths, their wiry crests stood up like brushes, and their snarling fangs were bared to their red gums.

Nearer and nearer they came to him, challenging him to stay, to rush them, to catch them if he could—and in their excitement they put ten yards of open space behind them. Thor measured this space, as he had measured the distance between him and the young bull caribou a few days before. And then, without so much as a snarl of warning, he darted out upon his enemies with a suddenness that sent them flying for their lives.

Thor did not stop. He kept on. Where the rock wall bulged out the trail narrowed to five feet, and he had measured this fact as well as the distance. He caught the last dog, and drove it down under his paw. As it was torn to pieces the Airedale emitted piercing cries of agony that reached Bruce and Langdon as they hurried panting and wind-broken up the slide that led from the basin.

Thor dropped on his belly in the narrowed trail, and as the pack broke loose with fresh voices he continued to tear at his victim until the rock was smeared with blood, hair and entrails. Then he rose to his feet and looked again for Muskwa. The cub was curled up in a shivering ball two feet in the crevice. It may be that Thor thought he had gone on up the mountain, for he lost no time now in retreating from the scene of battle. He had caught the wind again. Bruce and Langdon were sweating, and their smell came to him strongly.

For ten minutes Thor paid no attention to the eight dogs yapping at his heels, except to pause now and then and swing his head about. As he continued in his retreat the Airedales became bolder, until finally one of them sprang ahead of the rest and buried his fangs in the grizzly's leg.

This accomplished what barking had failed to do. With another roar Thor turned and pursued the pack headlong for fifty yards over the back-trail, and five precious minutes were lost before he continued upward toward the shoulder of the mountain.

Had the wind been in another direction the pack would have triumphed, but each time that Langdon and Bruce gained ground the wind warned Thor by bringing to him the warm odor of their bodies. And the grizzly was careful to keep that wind from the right quarter. He could have gained the top of the mountain more easily and quickly by quartering the face of it on a back-trail, but this would have thrown the wind too far under him. As long as he held the wind he was safe, unless the hunters made an effort to checkmate his method of escape by detouring and cutting him off.

It took him half an hour to reach the topmost ridge of rock, from which point he would have to break cover

and reveal himself as he made the last two or three hundred yards up the shale side of the mountain to the backbone of the range.

When Thor made this break he put on a sudden spurt of speed that left the dogs thirty or forty yards behind him. For two or three minutes he was clearly outlined on the face of the mountain, and during the last minute of those three he was splendidly profiled against a carpet of pure-white snow, without a shrub or a rock to conceal him from the eyes below.

Bruce and Langdon saw him at five hundred yards, and began firing. Close over his head Thor heard the curious ripping wail of the first bullet, and an instant later came the crack of the rifle.

A second shot sent up a spurt of snow five yards ahead of him. He swung sharply to the right. This put him broadside to the marksmen. Thor heard a third shot—and that was all.

While the reports were still echoing among the crags and peaks something struck Thor a terrific blow on the flat of his skull, five inches back of his right ear. It was as if a club had descended upon him from out of the sky. He went down like a log.

Before he could rise from where he had fallen the dogs were upon him, tearing at his throat and neck and body. With a roar Thor sprang to his feet and shook them off. He struck out savagely, and Langdon and Bruce could hear his bellowing as they stood with fingers on the triggers of their rifles waiting for the dogs to draw away far enough to give them the final shots.

Yard by yard Thor worked his way upward, snarling at the frantic pack, defying the man-smell, the strange thunder, the burning lightning—even death itself, and five hundred yards below Langdon cursed despairingly as the dogs hung so close he could not fire.

Up to the very sky-line the blood-thirsting pack shielded Thor. He disappeared over the summit. The dogs followed. After that their baying came fainter and fainter as the big grizzly led them swiftly away from the menace of man in a long and thrilling race from which more than one was doomed not to return.

CHAPTER XIV.

IN his hiding-place Muskwa heard the last sounds of the battle on the ledge. The crevice was a V-shaped crack in the rock, and he had wedged himself as far back in this as he could. He saw Thor pass the opening of his refuge after he had killed the fourth dog; he heard the click, click, click of his claws as he retreated up the trail; and at last he knew that the grizzly was gone, and that the enemy had followed him.

Still he was afraid to come out. These strange pursuers that had come up out of the valley had filled him with a deadly terror. Pipoonaskoos had not made him afraid. Even the big black bear that Thor killed had not terrified him as these red-lipped, white-fanged strangers had frightened him. So he remained in his crevice, crowded as far back as he could get, like a wad shoved in a gun-barrel.

He could still hear the tonguing of the dogs when other and nearer sounds alarmed him. Langdon and Bruce came rushing around the bulge in the mountain wall, and at sight of the dead dogs they stopped. Langdon cried out in horror.

He was not more than twenty feet from Muskwa. For the first time the cub heard human voices; for the first time the sweaty odor of men filled his nostrils, and he scarcely breathed in his new fear. Then one of the hunters stood directly in front of the crack in which he was hidden, and he saw his first man. A moment later the men, too, were gone.

Later Muskwa heard the shots. After

that the barking of the dogs grew more and more distant until finally he could not hear them at all. It was about three o'clock—the siesta hour in the mountains, and it was very quiet.

For a long time Muskwa did not move. He listened. And he heard nothing. Another fear was growing in him—the fear of losing Thor. With every breath he drew he was hoping that Thor would return. For an hour he remained wedged in the rock. Then he heard a cheep, cheep, cheep, and a tiny striped rock-rabbit came out on the ledge where Muskwa could see him and began cautiously investigating one of the slain Airedales.

This gave Muskwa courage. He pricked up his ears a bit. He whimpered softly, as if beseeching recognition and friendship of the one tiny creature that was near to him in this dreadful hour of loneliness and fear.

Inch by inch he crawled out of his hiding-place. At last his little round, furry head was out, and he looked about him. The trail was clear, and he advanced toward the rock-rabbit. With a shrill chatter the striped mite darted for its own stronghold, and Muskwa was alone again.

For a few moments he stood undecided, sniffing the air that was heavy with the scent of blood, of man, and of Thor; then he turned up the mountain.

He knew Thor had gone in that direction, and if little Muskwa possessed a mind and a soul they were filled with but one desire now—to overtake his big friend and protector. Even fear of dogs and men, unknown quantities in his life until today, was now overshadowed by the fear that he had lost Thor.

He did not need eyes to follow the trail. It was warm under his nose, and he started in the zigzag ascent of the mountain as fast as he could go. There were places where progress was difficult for his short legs, but he kept on valiantly and hopefully, encouraged by Thor's fresh scent.

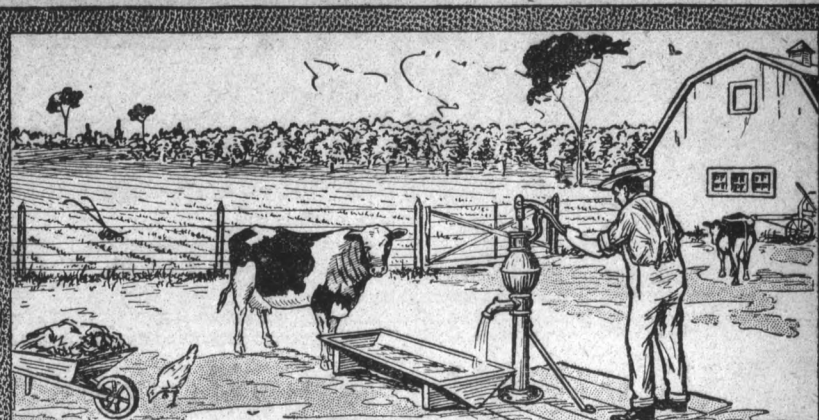
It took him a good hour to reach the beginning of the naked shale that reached up to the belt of snow and the sky-line, and it was four o'clock when he started up those last three hundred yards between him and the mountain-top. Up there he believed he would find Thor. But he was afraid, and he continued to whimper softly to himself as he dug his little claws bravely into the shale.

Muskwa did not look up to the crest of the peak again after he had started. To have done that it would have been necessary for him to stop and turn sideways, for the ascent was steep. And so, when Muskwa was halfway to the top, it happened that he did not see Langdon and Bruce as they came over the sky-line; and he could not smell them, for the wind was blowing up instead of down. Oblivious of their presence he came to the snow-belt. Joyously he smelled of Thor's huge footprints, and followed them. And above him Bruce and Langdon quietly waited, crouched low, their guns on the ground, and each with his thick flannel shirt stripped off and held ready in his hands. When Muskwa was less than twenty yards away they came tearing down upon him like an avalanche.

Not until Bruce was upon him did Muskwa recover himself sufficiently to move. He saw and realized danger in the last fifth of a second, and as Bruce flung himself forward, his shirt outspread like a net, Muskwa darted to one side. Sprawling on his face, Bruce gathered up a shirtful of snow and clutched it to his breast, believing for a moment that he had the cub, and at this same instant Langdon made a drive that entangled him with his friend's long legs and sent him turning somersaults down the snow-slide.

(Continued next week).

Reading is to the mind what exercise is to the body.—Addison.



Farm Labor is scarce; don't waste it pumping water

The greatest production possible is necessary from every farm to feed America and its Allies. Every farmer must make his time count—he cannot afford to waste it doing things that can be done cheaper and better by machinery.

Leader Water Systems

A constant uninterrupted supply of water for stock, for housework, for drinking, for bathing—always ready, no trouble nor back-breaking pumping—that's what the Leader Water System brings to you.

Leader Systems are made in a variety of sizes and kinds to meet every requirement. Electric driven, gasoline engine driven, belt driven—just the kind you want at the price you want to pay. Get particulars and prices now before your Spring Work starts.

Ask us about our Farm Lighting Outfits.

Kerr Machinery & Supply Co.
Fort & Beaubien Sts., Detroit

ROOFING ECONOMY



OUR Asphalt Roofings cost you less per roll—and per year. Made of extra tough Felt and genuine Asphalt—in various weights and finishes. Quickly, easily laid. Furnished with nails, cement and full directions for laying.

Time Guarantee

Each roll is sold with a definite time guarantee. During that time you are absolutely protected, because if the roof leaks, we will replace it FREE. Save money by ordering from this Roofing Bulletin and FREE Samples.



Write for Our Free Roofing Bulletin No. 9110 and Samples

We ship promptly. Address house nearest you.

Montgomery Ward & Co.

Dept. K110

Chicago Kansas City

Ft. Worth Portland, Ore.

SALESMEN WANTED

The draft and enlistment took some of our best Salesmen. This territory is now open and we would be pleased to hear from interested persons. Must be exempt from draft. Permanent. Fine opportunity for the right men.

SAGINAW MEDICINE CO., Desk E, Saginaw, Mich.

Is Your Truss a Torture?

Are you suffering from rupture without any hope of relief? Get the Brooks Rupture Appliance on free trial and know the comforts of a sound man.

The automatic air cushion clings closely without slipping or chafing. Guaranteed to comfortably retain the hernia. Draws and binds together the parted tissue and gives Nature a chance to knit them firmly.

As specialists of 30 years' experience we have perfected a comfortable, sure relief from hernia in the Brooks Rupture Appliance. Endorsed by thousands of physicians. Sent on trial to prove its worth. Made to your measure. Durable—cheap.

Write today for measure blanks. BROOKS APPLIANCE CO. 494 State St. Marshall, Mich.

FACTORY-TO-RIDER

SAVES YOU MONEY
Buy direct and save \$10 to \$20 on a bicycle. **RANGER BICYCLES** now come in 44 styles, colors and sizes. Greatly improved; prices reduced. Other reliable models \$16.75 up. **WE DELIVER FREE** to you on approval for 30 days free trial—actual riding test at our expense. Our big FREE catalog shows everything new in bicycles and sundries. Write for it. **TIRES, lamps, wheels, parts and supplies at half usual prices.** Do not buy a bicycle, tires, or sundries until you get our wonderful new offers, low prices and liberal terms. A postal brings everything. **MEAD Cycle Company** Dept. W-77 Chicago



Why not try?

"SALADA"

TEA

It is so economical compared with ordinary tea or with coffee. And then you have that inimitable flavour.



Woman and Her Needs

At Home and Elsewhere



Why Endure Failures?

DON'T you ever feel, when you see someone making a complete failure of things, like stepping in and telling them what to do? Most of us have spells when we feel like righting the world, or a few individuals; and these spells come to me when I see a person sticking to a job for which they are not fitted, or continuing in a situation which is intolerable when they might get out of it if they would make the effort.

I wonder why some folks keep right on doing things a certain way, when all the evidence goes to show them they are wrong? Can't they tell for themselves they "are in wrong?" Or are they physically or mentally unable to change? Are they moral cowards,

potatoes at four months, frosting from cake, and in fact "tastes of everything." When you try to tell her the baby should have nothing but milk, she silences you with,

"That's the way I've fed all my children."

You wonder why she can't see by looking at her anaemic little ones that she has made a mistake in feeding and should change her ways. But she doesn't seem to see it.

In every walk of life you see misfits and wonder why the dead failure doesn't try a new tack—mighty good cooks are trying to teach school, ruining tempers and spoiling lives other than their own, when they might be useful and happy baking bread. Good dressmakers are fuming away in the kitchen. First-class milliners are trying to teach music, and good musicians are measuring ribbon in department stores. Many a man who would make a fine college professor is trying to run a business and all these misfits keep on when it is perfectly patent to everyone that they are making a mistake. Why won't they change? Are they too proud to acknowledge failure? A better pride would teach them to acknowledge their mistake in choosing a vocation, and getting into the right sphere.

Situations arise in the home which could be cleared up if someone would make the effort. How often home becomes a hateful place, just because no one takes the first step towards clearing up misunderstandings. I can understand difficulties arising between husband and wife, but I never could understand letting them continue. Drifting is a word I can't tolerate—it's the cause of too many failures.

DEBORAH.

STARTING PLANTS IN THE WINDOW.

BY C. H. CHESLEY.

A considerable number of plants may be started in the kitchen and living-room windows if one does not care to bother with a hot-bed. Here is a plan that works well and fills the bill for the ordinary home garden. The shade is taken down from the window and three shelves, to hold boxes eighteen inches wide, are made. One of these is on the sill and two are at regular distances above. Early tomatoes, eggplants, peppers, cabbages, cauliflower and celery are planted in March. Of course, there are also several varieties of flowers planted at about the same time. Two windows, one for vegetables and one for flowers, will give an ample supply for the ordinary home garden.

For plants that do not transplant readily, such as melons, lima beans and cucumbers, the plan of using old tin cans has been adopted. By melting the solder over a hot fire, the top and bottom of the can comes off readily. The bottomless cans are then set closely together in the box and filled with soil. A few seeds are planted in each can and then thinned down to one when of sufficient size. When the time comes to set the plants in the ground, there is no disturbance of the roots. A thinbit of board is slipped under the can and the whole thing

transferred to the garden. The tin can also serves effectively as a guard against the ravages of cutworms. This method is a good one to use with tomato plants when the fruit is desired very early. The plants may be grown to a large size, then hardened off and simply transferred to the garden. There is no delay in adjusting itself to new conditions, as no roots have been disturbed.

DIET FOR THE SECOND YEAR.

In feeding young children no sudden changes should be made in the diet unless ordered by a physician. New foods should be introduced one at a time, and only a little fed for the first few feedings so that the effect may be watched. During the second year the number of meals should be reduced, if possible, from five to four per day, the last to be given at six o'clock and the baby then put to bed. A healthy child will usually make this change for himself. In the case of delicate infants it is sometimes better to give a small amount of food at more frequent intervals, but the average child does better with fewer and larger meals, giving the stomach time to rest.

During the second year the following foods may be safely introduced: Broths, beef, mutton and chicken; the milk from oyster stew or creamed vegetable soups with stale bread, toast or crackers; baked potatoes, bits of well shredded meat if there are plenty of teeth; creamed carrots, mashed fine; baked apples, prune pulp, tapioca pudding, the juice from roasts or steak on bread or potato; chopped spinach, and always eggs and plenty of milk.

Never give tea or coffee to any child at any age. They do not need stimulants, and the effect on the nervous system is very bad. The proper drink is milk, or water. A quart of milk a day in addition to solid foods is not too much.

Give plenty of well cooked cereals, rice, oat meal and wheat cereals. The wheat cereals should be cooked in the double boiler at least one hour; the oat meal two hours.

SHOULD MOTHERS STUDY?

BY JULIA R. DAVIS.

Even in this day of enlightenment we meet people who ask such questions as, "Should mothers take time to study?" or, "Do mothers need to study to accomplish their daily duties in the best way?"

Need to study? To be sure. Most urgently she needs to study, to think, to read, to meet with other mothers—to do everything possible to learn the best methods of keeping her children, well, happy and upright.

There is more and more good informative reading prepared, by experts, for the mother's help. And many mothers, but, unfortunately, not all, are taking advantage of such aids. It is a well known fact that it is the best educated and the most intelligent mothers who feel the need of assistance, and eagerly read everything that offers new and helpful suggestions.

Mothers' meetings are doing much to help by making possible the exchange of personal experiences. There are scores of little things, plans for caring for the children, ways of break-

ing them of bad habits, methods of teaching them valuable lessons in deportment, instilling love for God and purity of life, which mothers could exchange with incalculable help to each other.

The character and mental spiritual life of the child is to be stimulated and guided for many years almost solely by the mother. Surely in her effort to make the finest and best boys and girls of her sons and daughters the mother needs every good help.

Then it is the imperative duty of mothers to study the best methods of keeping the family healthy and strong, and of stimulating the mind of her child, directing its taste, and training its morals.

When we realize how easily the ignorant mother may cause a child to suffer all its life physically, we can



This attractive dress will please little daughter because of its jaunty lines, broad collar, belt, and roomy pockets, with hand embroidery the only trimming. Mother will find it simple to make, too; it is a one-piece dress with two box pleats in front, through which the embroidered belt is passed. This little girl's dress is made of pique, but any of the heavier cotton materials, ramie linen or linene are suitable.

sticking to a rut because they are afraid to change? Or are they just too downright lazy to study their own case and try to better conditions?

How many men are making a complete failure of farming because they won't try anything new! They keep on year in and year out at general farming, growing poorer every year, when a soil expert tells them their land is suited to grow nothing but melons. And their sole expressed reason for doing it is, "That's the way I've always done." Wouldn't you think that after four or five years of doing a thing and reaping nothing but failures, they'd see the wisdom of changing?

A mother with two or three sickly children, and one or two dead, insists on giving her baby condensed milk,



For the warm days of summer the little girl should feel dressed for the most important occasions in this frock of embroidered batiste. Edging and bands of filet crochet might be used effectively, and the tiny tucks give a high-waisted effect.

form some estimate of how easily the neglect of thoughtful training may cause it to suffer morally.

The best mothers are taking time to study, and by putting the home on a working basis they find that this time can be taken without neglecting the other duties. In truth, the mother needs far more than the best training. She needs that priceless sixth sense that will enable her to apply her learning to the actual conditions of life.

BURNING FINE COAL.

Household Editor.—The way I save fuel when my husband brings home fine coal or slack is to place it on a newspaper, gather up the corners, place it on the fire and by the time the paper is burned the coal is seared over so it does not sift down into the ashes and waste.—M. M. C.

EAT MORE POTATOES.

Housewives of Michigan, according to the Department of Home Economics of the Michigan Agricultural College, can render double service to the state and nation if they will use potatoes as a partial substitute for wheat flour.

"We are confronted with the necessity for conserving our wheat supply, of which we have too little, and of making use of our potatoes, of which we have a surplus. We can do both by making less use of one and more of the other. Bread we must have, and at least a small portion of wheat flour seems to be necessary if we are to have a light palatable loaf, but we can still achieve this if we will use potatoes for a part of the flour.

"These recipes, which have been thoroughly tested, are suggested as two ways in which potatoes can be satisfactorily used:

"Potato Muffins.—Four tablespoons of shortening, four tablespoons of sugar, one egg, two-thirds of a cup of mashed potato, two cups flour, four teaspoons of baking powder, half a teaspoon of salt and one cup of milk. Cream the shortening and sugar, add the well-beaten egg and then the potatoes. Mix thoroughly, add milk and then the flour and baking powder, which have been sifted together. Bake in well-greased muffin pans for about thirty minutes.

"Potato Biscuits.—One cup mashed potato, one cup of flour, four teaspoons of baking powder, half teaspoon salt, two tablespoons of shortening, and milk to make a stiff dough. Mix and sift flour, baking powder and salt, chop in the shortening or rub it in with the tips of the fingers, add the potato and milk, enough to make a very stiff dough. Turn onto a floured board, roll out to three-fourths of an inch thickness, cut, place in shallow pan and bake in quick oven."

CHOP SUEY.

Household Editor.—Below is given a recipe for chop suey in answer to request given by Mrs. O. R. E. in issue of February 23.

Chop Suey.—One package of spaghetti, one can of tomato soup, one pound of hamburger steak, one large onion. Boil spaghetti in salt water and drain. Fry hamburger steak and chopped onion (not too well done), season well with salt and pepper. Add spaghetti and tomato soup and bake about thirty minutes.—C. M.

One and a half pounds of fresh beef, one cup of rice, one large bunch of celery, one quart of tomatoes. Boil rice in salted water until done, grind beef in food chopper and spread over the bottom of pan. (I use a four-quart granite pan). Season with salt and pepper; put a few bits of suet with beef. Spread cooked rice over the raw beef. Cut celery in small pieces over the rice then pour tomatoes over celery. Bake one and a half hours in the oven.—Mrs. R. H. W.

HOME QUERIES.

Please publish in your paper a recipe for canning fresh beef, and oblige.—Reader.

Canning Beef.—Cut in pieces of about three-quarters of a pound weight and roast or boil slowly for a half an hour. Cut into small pieces, removing gristle and bone, pack into hot jars, boil down liquid in pan one-half and fill jars.

I feel like placing a red light over the last paragraph of the article on "Cleaning Beds in March," in your February 16 issue, because I came so near burning my house and myself, too, by just such a performance that I nearly fainted with fright. Please warn your readers to never burn sulphur on the same day that they use gasoline in a room. We all know the

danger but do not always think.—Mrs. H. L. O.

I think people would eat more parsnips and vegetables if they cooked them as my mother taught me. Parsnips.—Wash and scrape, cut in thin circles, boil in salted water until tender. Pour off water, cover with milk, season with salt, pepper and butter. Thicken with two or three crackers, rolled fine. Boil up and serve. Vegetable Oysters.—Cook the same, only do not pour off water they were cooked in. Add one tablespoonful of shredded codfish to them while boiling.—M. M. C.

If Mrs. O. R. C. will boil the tomatoes, butter, salt and pepper in a stew pan, when they are thoroughly boiled put in half a teaspoon of soda to one quart of tomatoes; in a greased kettle put as much milk as desired and let come to a boil then add milk to the tomatoes but do not let it boil again, and she will always have a nice soup.—Mrs. F. D.

If the party who has trouble with lime gathering inside of her teakettle will simply boil soft water in it for a few hours occasionally the trouble will vanish.—E. A. S.

NEW CLOTHES FROM OLD.

The College of Agriculture, University of Wisconsin, Madison, Wisconsin, has issued a helpful circular, "New Clothes at Small Cost." It gives suggestions, with illustrations, for cutting over old garments. Among them are directions for making children's union suits from larger ones, pattern for re-footing stockings, baby overalls from black stockings, three uses for partly worn shirts, and numerous hints as to making over your 1917 suits and frocks. Write for Circular 91.

MICH. FARMER PATTERNS

Any of the patterns illustrated may be secured by sending order to Pattern Department, Michigan Farmer, Detroit, enclosing the amount set opposite the patterns wanted.



No. 1597—Ladies' Apron. Cut in three sizes, small, medium and large. It requires for a medium size 5½ yards of 36-inch material. Price 10 cents.

No. 2321-2319—Ladies' Costume. The waist, 2321, cut in seven sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 2319 cut in seven sizes, 22, 24, 26, 28, 30, 32 and 34 inches, waist measure. It will require nine yards of 44-inch material for the entire dress for a 36-inch size. The skirt measures about 2½ yards at the foot. Two separate patterns, 10 cents for each pattern.



No. 2004—Junior Dress. Cut in three sizes, 12, 14 and 16 years. It requires 5½ yards of 36-inch material for a 14-year size. Price 10 cents.

No. 2373—Girls' Dress. Cut in five sizes, 4, 6, 8, 10 and 12 years. Size 12 requires 3¾ yards of 44-inch material for the dress with jacket. The jacket alone will require 1½ yards. Price 10 cents.

How to buy FLOUR half-and-half

It is developing that enormous waste of wheat-flour substitutes is possible and probable if the Substitute flours are not purchased in the proper proportion and assortment.

Buy Correctly

Adopt the following suggestion and you will not go far astray. You can even cut out the memoranda order and take it to your grocer.

An Ideal Flour Order



In the hands of an interested patriotic housewife no accumulation of any item of the above assortment should occur. Used in well-planned menus each of the items can be consumed in about the proportion given and no over-supply will be left to spoil or waste.

A Free Booklet

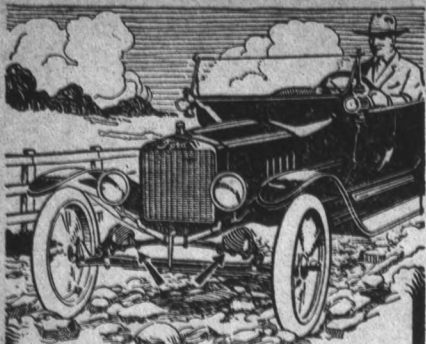
If any of these war-time wheat-flour substitutes are new to you and you are not fully informed as to how to use them, send for a copy of a free booklet entitled—

Pillsbury's

40-War-Time Recipes

This book will be mailed to you free upon application. If its recipes are carefully followed, you will find you can prepare delicious dishes in good variety. These recipes will help you avoid poor results and disappointments incident thereto. They will show you that these substitutes are useable and likeable and that you should not be prejudiced against their use.

Pillsbury Flour Mills Company
Dept. F 18 Minneapolis, Minn.



Don't Let Rough Roads Keep You from Riding

IT ISN'T NECESSARY. Hassler Shock Absorbers on your Ford will make "rough spots" feel almost as smooth as an even stretch of road. Their gentle, springy action absorbs every jolt and jar.



For
Ford

Shock Absorber Cars

Hassler Shock Absorbers make your Ford ride as easily as a \$2,000 car. They increase tire mileage 25 to 100 per cent, save gasoline, cut your up-keep bills one-third, and increase the resale value of your car. 800,000 Ford Owners recognize their economic necessity.

10-DAY FREE TRIAL OFFER

Write today for Free Trial Blank and we will have a set of Hasslers put on your Ford without a cent of expense to you. Try them 10 days. Then, if you are willing to do without them, they will be taken off without charge. Don't ride without Hasslers simply because someone discourages you from trying them. Accept this offer and see for yourself. Over 800,000 sets in use. Write today—NOW.

ROBERT H. HASSLER, Inc.
362 Naomi St., Indianapolis, Ind.



The Leader of
all Cushion Shoes

Mayer's HONORBILT CUSHION SHOES

For men and women

Ask your dealer for Mayer Shoes. Look for the trademark on the sole.

F. Mayer Boot & Shoe Co.,
Milwaukee, Wisconsin



MAULE'S SEEDS

Once Grown Always Grown

Insure success in your garden. Each lot of Maule's seeds is tested for vigor and growing power, and is backed by our 41 years' success as seed growers.

THE MAULE SEED BOOK

176 pages full of valuable planting and gardening information **FREE**
Send for it today.

Include 10c and we will send you a packet of specially selected pansy seeds—a generous assortment of beautiful Giant pansies—the largest known.

You save money and get fresh seeds when you buy from

WM. HENRY MAULE, Inc.
2156 Arch Street Phila., Pa.

SCOTT'S FIELD SEEDS
Our seeds are selected and cleaned to be WEEDLESS and free from dead grains. They will go much farther than ordinary field seeds, nearly always adding enough to the crop to pay for themselves. Samples and catalog including "How to Know Good Seeds" free. Write today. O. M. SCOTT & SONS CO., 56 Main St., Marysville, O.

Our Boys and Girls At Work and play

City High School Boys are Training for Farm Work

By GEORGE F. PAUL

High school boys in Chicago and other large cities are preparing in dead earnest for the great back-to-the-farm drive this spring. In the Lane Technical High School, for instance, the school program has been specially rearranged to speed up the work of the boys who have volunteered for active service in the United States Boys' Working Reserve. The teachers are seeing to it that the husky young fellows sixteen years old and over who have signed up for the special farm courses get some idea of what is expected of them when they reach the farms to which they are assigned.

At the Lane school the boys are taking practical lessons from skilled instructors who have a 10-20 Titan tractor to use for this demonstration work. The boys are all called upon to take their turns in starting and operating the tractor, and are given a grade according to the skill that they display. Besides working with the tractor they receive practical instruction in operating and caring for a seeder, a cultivator, a mower, a binder and other farm implements.

The school has obtained from the city of Chicago six horses that formerly did service in the police department.

Each day different boys are about their new work. More than three hundred boys went from this school in the spring of 1917 to do farm and garden work. The 1918 delegation will be far better trained in farm duties, while their numbers ought to reach the five hundred mark.



Taking Turns in Starting and Operating the Tractor.

The Council Pipe

By MARY S. STOVER

Hal had been bragging a little about how he meant to go west some day and fight Indians. He thought that he was very brave and noble until grandma said gently, "Isn't it a bigger thing than fighting Indians to teach them to trust you and be your friends? That is what my Grandfather Plastron did."

"Tell us about him, grandma," said Hal; and the others came crowding up to listen.

"Your great-great-grandfather Plastron was my grandfather, you know," said grandma. "He lived with us from the time when I was a baby, and we loved each other very much. Grandpa was tall and thin, with white hair and the kindest face I ever saw. His room was upstairs at the front of the house, and I liked nothing better than to be sent to call him to supper or dinner."

"I was pretty sure to find him reading in the arm chair by the window or else sitting on the high stool in front of his old desk, writing away with a quill pen. Mother saved whole box-fuls of goose feathers for grandfather to whittle into quill pens. It is from that old-fashioned way of making pens that we get our word penknife. You would think it a troublesome thing to whittle all your pens out of goose quills!" she laughed.

"Grandpa would read or write to a good stopping place, then he would say, 'Let's be going.' He would bend down so that I could clamber on his back and downstairs we would go, visiting away as if we hadn't seen each other for a week. I cried when mother told me that I had grown so big and grandpa was getting so old that I must take his hand and walk downstairs instead of riding."

"But what about the Indians, grandma?" asked Hal.

"Oh, yes. We lived two miles from the Tuscarora reservation, and the In-

di- dians went past our house every day on their way to the village. Even when I was a child they were more civilized than the Indians of the west, but the older ones still were suspicious of white people. Father once took me to church on the reservation, and I remember that all the old women wore fine black broadcloth shawls or blankets, though it was summer."

"The reservation was governed by chiefs, one at the head of each tribe, who met together something as the aldermen do in a city council. Their meetings were called councils, too. Sometimes these meetings were held in the council house, which was near the center of the reservation, sometimes they were out in our front yard."

"In your front yard?"

"Yes. Everybody that knew him trusted my grandfather, and the Indians often came to him for advice. Sometimes one or two would come, much they disliked what grandfather

again there would be all the leaders. Then it was that they held their council in our yard. They would sit in a circle on the ground, just as you have seen in Indian pictures, and grandfather was always one of the circle. Wait a moment and I will show you the council pipe." Grandma brought from her room an old long stemmed pipe at which the children stared in awe.

"You have read how the Indians passed the pipe from one to another while they sat in the council circle. I have often watched them through the lilac bushes at the corner of the house. Grandfather kept the pipe beside a tin box that contained tobacco and a mixture of powdered wild herbs, I believe. Their place was on a ledge in our cellarway, and I was afraid of the very sight of them, because it made me think of seeing him among those fierce looking men."

"Some of the Indians usually had guns or knives with them, and it was alarming to see them get angry. Sometimes they showed very plainly how much they disliked what grandfather

Boys and Girls under fifteen

Write a letter to "Cousin Bill" about

What you are doing to Help Win the War

Address "Cousin Bill"

Care, Michigan Farmer, Detroit, Mich.

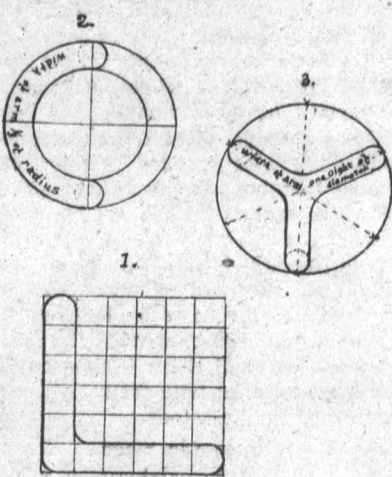
said to them; and once in awhile they would go away frowning and muttering among themselves. But they knew that grandfather was their true friend, and they always came back to shake his hand and solemnly thank him for his good advice."

"When grandfather died many men and women that none of us knew came to tell us of their sorrow and sympathy, and one chief asked my mother to keep this pipe in memory of their friendship. It is one of my greatest treasures."

"I should think it would be!" exclaimed Hal. "Great-great-grandfather did a thousand times better than to shoot Indians or to get their land to make into farms. I'm no end proud of him. And I mean to be such a brave friend to people that he wouldn't be ashamed of me!"

SOMETHING FOR RAINY DAYS.

Figures 1, 2 and 3 show some simple designs of small boomerangs which must be traced, in the exact proportion shown in the diagrams, on bristol board, and to insure success, cut out



with a sharp penknife on a smooth board so that the edges may be perfectly smooth and flat.

In order to insure that the boomerang returns to its starting point, you must see that the edges are perfectly smooth, the ends carefully rounded whirling around and around, until it circles back to the feet of the thrower.

To throw, hold before one on a book with one end of arm thrust out over the edge. A sharp tap with a pencil on the projecting end sends it flying, and that the material has body enough to remain flat, yet not too heavy else the boomerang will fly far but fail to circle back. Old post cards of good quality are excellent material if you cut them as large as the card allows.

FLOWERS OR LEAVES IN SOAP BUBBLES.

Do you know that you can take a leaf or a flower from off a plant and blow it inside a soap bubble? Perhaps you don't, and if you have never done it you have missed something very pretty. It is done this way; the bottom of a plate should be covered with a soapy solution, at least a half inch thick. In the center of this place a green leaf or a carnation or rose, or any such compact flowers—a spray will not work so well—and over this place a tin funnel, and while slowly lifting it continue to blow steadily until a large film has been made. The funnel is then taken off, turning it at right angle and doing it carefully and slowly, and you have a flower shining through a big bubble.

If you use castile soap mixed with glycerine and ammonia and, of course, water, for your soap bubbles, you will find that they are more successful and last much longer before bursting. It is well to let this mixture stand for three days before using, removing the scum before putting the pipe in.

A Boy's Experience Raising Stock

THE following letter by Merle H. Green will be of interest to our boys and girls who are interested in raising pets and animals:

I cannot tell when the desire for farming or animal raising first took its hold upon me, possibly it was born with me. My first live stock was rabbits, later Pekin ducks were added to these. I was always wanting a cow, which my father offered to buy as soon as I was old enough to milk. The opportunity came when I was eight years old, a neighbor offering one for sale. So one evening about milking time we went to look her over and to let me try my hand at milking. As she was a very easy milker, I found that I could milk her. Since that time we have not been without a cow, and I am now milking two.

My father sold me a heifer two years ago, making an agreement with me to furnish feed for her until she would give milk, and if she was not a profitable cow to keep I was to sell her, but if she was a good one, the family was to have the milk to repay for the feed. This is one of the cows I am now milking. I also have her last offspring's calf, a heifer, and two other heifers due to freshen early in the summer, which I bought when calves, for my father to feed on the same conditions.

Two years ago I went into the poultry business. I bought a 150-egg size incubator and hatched about 125 Pekin ducks and 100 Barred Rock chickens. My father is a lumber dealer, and our farm of forty acres is only one-half mile from the yard. We erected on the farm two years ago a modern house which is our home, and from which I can carry on my farming and stock raising to good advantage. For the last few years I have had an allowance of \$1.00 per week, and from this income have bought my clothes (what

father didn't buy) and have got the start I now have.

When I commenced the duck raising, my father furnished me with the lumber at cost for a building 12x16 feet, but later I decided to sell out, so he took the building and incubator at a price at which he could handle them. The poultry was sold except ten ducks, the pick of the flock, which we now have in partnership.

This year we tried out hogs. We bought a litter of seven for \$42 in the latter part of August, and at threshing time bought a ton of barley at \$2.25 per hundred, ground, that is, we had it ground as we needed it, with oats half and half, on which our pigs did fine. Later we bought 500 pounds of shelled corn. We butchered two that dressed 230 pounds, sold three which weighed 380 pounds and brought \$55.10. I am buying the two best sows for \$70. This bunch were Duroc Jerseys, and netted us approximately \$50 after paying for all the feed at market prices.

The arrangement I have made with my father is this: He is to furnish me suitable buildings, fence one acre of land and cross fence same for which each fall I am to give him two hogs. So you see I have enough to do to keep me busy for the next two years that I will be going through high school after which I plan on taking a course in the Michigan Agricultural College to better fit me for my life work.

Every boy should realize that, having received untold benefits from the freest and best government on earth, he holds his services in trust for the preservation of Democracy on which that government rests. Although he may have to endure aching limbs and sore muscles in field and factory, he will be happy in the consciousness that he has had a real part in winning the war.

10,000 Miles on original air.

10,000 miles and the original air still in the tubes. That is my experience with Lee Puncture Proof Tires. After 10,000 miles use I sold my car and for all I know, the Lee Puncture Proof Tires may still be giving service.

Since my experience I have learned from others that this is not an unusual service and I am confident that the one way to eliminate worry and save money at the same time is to have the car equipped with Lee Puncture Proof Tires.

C. B. HAMILTON,
Pres. Brearley-Hamilton Co.,
Grand Rapids, Michigan

LEE Puncture Proof Tires

YOU can't drive a nail into a Lee Puncture Proof Tire with an axe. They cannot be punctured by broken glass. "Stone Bruises" are unknown to them. Their guarantee has no "ifs" nor "buts" in it. It is backed by a **Cash Refund**.

Send the coupon below—we'll show you how you can get this protection from trouble, and remarkable mileage as well.

LEE TIRE & SUPPLY CO., Grand Rapids, Michigan

LEE TIRE & SUPPLY CO.,
Grand Rapids, Michigan.

Gentlemen:—Without obligation on my part, show me how I can have absolute freedom from tire trouble and get more miles per dollar with Lee Tires. Also tell me the name of the Lee dealer nearest to me.

Name _____

Address _____

What 15c Will You Bring You from the Nation's Capital

Washington, the home of the Pathfinder, is the nerve-center of civilization; history is being made at this world capital. The Pathfinder's illustrated weekly review gives you a clear, impartial and correct diagnosis of public affairs during these strenuous, epoch-making days. The little matter of 15c in stamps or coin will bring you the Pathfinder 13 weeks on trial. The Pathfinder is an illustrated weekly, published at the Nation's center, for the Nation; a paper that prints all the news of the world and tells the truth and only the truth; now in its 25th year. This paper fills the bill without emptying the purse; it costs but \$1 a year. If you want to keep posted on what is going on in the world, at the least expense of time or money, this is your means. If you want a paper in your home which is sincere, reliable, entertaining, wholesome, the Pathfinder is yours. If you would appreciate a paper which puts everything clearly, fairly, briefly—here it is. Send 15c to show that you might like such a paper, and we will send the Pathfinder on probation 13 weeks. The 15c does not repay us; we are glad to invest in new friends.

THE PATHFINDER, Box 78, Washington, D.C.

Farms and Farm Lands For Sale

FARM AT AUCTION

Will sell to highest bidder on Thursday, March 21. Choice 80 A. farm, 75 A. level plow land, balance pasture & timber. New house, barn and out buildings. New woven wire fences. Half way between Kalamazoo & Battle Creek. Two miles S. W. of Augusta, Mich. on main line Michigan Traction Co. and Michigan Central R. R's, also on Electric to Grand Rapids. Fine spring lake & Trout stream, on back of farm. Kalamazoo River frontage, 3 1/2 A. Rosen Rye, some Alfalfa & Clover seeding. Come day before sale and bring your wife, will meet all buyers at Augusta on 20 and 21 of March. All enquiries answered day received, also all stock & tools.

BEN B. HUNT,

Augusta, Mich.
Andy Adams of Litchfield, Auctioneer.

WANTED GOOD FARMERS

South Baldwin County, Alabama, offers the best opportunity for developing good farms from low priced raw lands, with good markets, plentiful rain fall, climate unexcelled—a visit here will convince you this is the place you are looking for. Some partially improved farms, large or small tracts for either farming or stock raising. One special bargain in 1,800 acres for stock farm. Fruit, early truck, poultry and stock are all revenue producers here.

W. A. STODDARD

Robertsdale, Baldwin County, Ala

McCLURE STEVENS LAND CO.

We have the following lands and stock for sale: 15000 acres of fine unimproved lands, well located, easy terms, 160 acre tract of land situated 5 miles from Gladwin, on daily mail route. All fenced with woven wire, 20 acres under fine state of cultivation with 6 acres in fruit. 70 acres more of same tract brushed, logged and burned. Sheep Ranch of 310 acres, all fenced, living water, 70 acres of this ranch cleared, 30 acres of which is under fine state of cultivation with fruit orchard. House 26 by 28. Sheep shed and barn 64 by 30 built this past season. 180 hd. of sheep, with clover hay, grain and straw sufficient for wintering same. Also three Stock Ranches, well fenced, watered and grassed over.

McClure Stevens Land Co., Gladwin, Mich.

Farm For Sale

160 acres of good farming land. Good location 6 miles from town on good road. Good soil mostly seeded down. Good house, barns old but lots of barn room. 30 acres timber, 20 acres pasture land, near school. Price \$30 per acre, must be sold to settle an estate. Address FRANK E. BIDWELL, Brighton, Mich.

MR. FARMER!

Do you intend to sell or trade your farm?
Do you want quick action?
Do you want to do business with a Reliable, responsible firm?
Then fill out this slip.

Name _____

Address _____

and mail it to

Riverview Homes Company

(Members of Detroit Real Estate Board)
212-214 Hammond Bldg., Detroit, Mich.

FOR SALE

An eighty acre farm W. 1/4 of the N. E. 1/4 of sec. 24, Sherman Township, Isabella County, Michigan. One-half mile south of Weidman, all cleared but 5 acres. Good farm house, small barn, 5 acres of Rye on ground. Price \$200.00, \$500.00 down, balance long time, interest 6%.

Also an eighty acre farm S. 1/4 of the N. E. 1/4 of Sec. 2, Broomfield Township, Isabella County, Michigan. About 40 acres cleared, good orchard, no buildings to speak of, some Rye on ground. Price \$200.00. Both farms one-half mile from first class schools. Come to Mt. Pleasant and we will take you over to see these lands and others.

JOHN S. WEIDMAN, Mt. Pleasant, Mich.

\$950 Down Secures 120 Acre Equipped Farm
Owner left alone. If taken soon includes 10 cows, 2 two-year olds, 4 yearlings, poultry, wagons, harnesses, truck, gas engine, mower, rake, plow, harrow, hay, etc., etc. Spring-fed 20-cow pasture, valuable woodland, fruit orchard, 500 sugar maple trees with buck-ets and pans. 6-room house, 16-cow barn, 200 head poultry house. \$950 takes all. Very easy terms. Directions: see page 16 "Strout's Catalogue", copy mailed free.

E. A. STROUT FARM AGENCY,
Dept. 101, 150 Nassau St., New York, N. Y.

FARM BARGAIN

80 acres clay and clay loam soil in Alcona County, 40 to 50 acres well cleared, fenced, good barn and hay shed, well, fine roads, 1/4 mile to good school and church, near good market town, 3 miles to popular summer resort. Owner in other business. Will sell for \$30.00 per acre to reliable buyer on practically his own terms. This is a real opportunity. Address Box M. 316 care of Michigan Farmer, Detroit, Mich.

FOR Sale at Luther, Mich. A good stock or general crop farm of 50 acres all level 35 acres under plow balance good pasture. Address C. A. Box 78, Rapid City, Mich.

For Sale 287 1/2 acres good soil highly improved well seeded. Price \$13000 1/2 cash. I. N. COBB, Middleville, Mich.

Wanted To hear from owner of farm or business improved land for sale. O. K. HAWLEY, Baldwin, Wisconsin

Gombault's Caustic Balsam

The World's Greatest and Surest

Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS I

SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER, WIND PUFFS, THRUSH, DIPHTHERIA, SKIN DISEASES, RINGBONE, PINK EYE, SWEENEY, BONY TUMORS, LAMENESS FROM SPAVIN, QUARTER CRACKS, SCRATCHES, POLL EVIL, PARASITES.

REMOVES

BUNCHES or BLEMISHES, SPLINTS, CAPPED HOCK, STRAINED TENDONS.

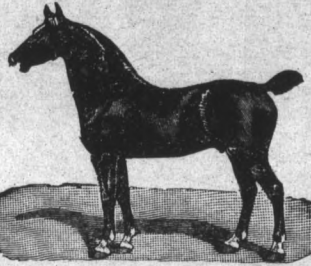
SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard VETERINARY REMEDY

Always Reliable.

Sure in Results.



Not genuine without the signature of The Lawrence-Williams Co. Sole Importers & Proprietors for the U.S. & CANADA. CLEVELAND, O.

CAUSTIC BALSAM IS THE BEST

Your Gombault's Caustic Balsam is the best liniment I know of. I have bought four bottles for my neighbors, and two for myself. I have cured a sweened horse with the Balsam. —Louis Miller, Sharon, Wis.

GOMBAULT'S CAUSTIC BALSAM IS EXCELLENT.

Having read an advertisement in Wisconsin Agriculturist about your Gombault's Caustic Balsam, I have tried some of it and think it excellent. —J. M. Woradzowsky, Big Flats, Wis.

Sole Agents for the United States and Canada.

The Lawrence-Williams Co.

TORONTO, ONT.

CLEVELAND, OHIO.

Feeders' Problems

Raising Calves without Milk.

I am a much interested reader of the Michigan Farmer, and I believe it unexcelled in its class. Having read many articles of much interest to me from the dairy columns, I thought perhaps you could give me some advice with regard to feeding calves on a dairy farm where all the whole milk is sold. What other ration can I give along with two quarts of whole milk so as to balance a ration complete to fill the place of skim-milk and calf meal?

Sanilac Co.

C. C. I.

You can get along very nicely, even with young calves, if you will give them two quarts of whole milk a day—one quart night and morning, by making a gruel out of a combination of grains and feeding it in connection with this whole milk.

Experience has proved that no one grain seems to be sufficient. This was demonstrated by very careful experiments at the Minnesota Experiment Station. A combination of grains seems to produce good, thrifty, healthy calves. The idea seems to be that by a combination of various grains and feeding stuffs the calf gets more nearly the desired amount of food ingredients and in the right proportion. Not only this but it makes the food more appetizing, and all animals, especially calves, do much better on appetizing foods even though other foods furnish the necessary food ingredients.

Mix oil meal, gluten feed, wheat bran, wheat middlings, ground barley, corn meal, ground oats together and make a thin gruel by mixing about one quart of grain to six quarts of water and let it come to a boil, then mix a sufficient amount of this with the one quart of milk and feed it to the calves at about blood temperature, ninety-five to ninety-eight degrees.

As the calves grow older you can substitute skim-milk or you can further reduce the amount of milk. The calves should be encouraged to eat some dry grain and forage, like clover or alfalfa hay. In fact, anything that they relish. It might bother one to get all of these different food products to make the mixture, but you should get as many as you can, as it has been proven above doubt that a mixture is much better than it is to feed one food, for instance, corn meal.

Southern Grown Seed for Ensilage.

We have a concrete silo 14x51 feet, holding, the builder said, about 114 tons when full. We have been using southern-grown seed for ensilage corn. First season four acres half filled the silo; second season nine acres fill the silo and a surplus of several loads of fodder. In 1916 and 1917 corn was so injured by dry weather and other untoward conditions that nine acres filled silo only a little more than half. This corn is Mammoth, never much grain, but in good years give abundance of fodder. I very much desire to know if you are acquainted with this southern-grown seed, whether you raised it, and if you raise another kind, the principal reasons why you do so.

Allegan Co.

A. H. F.

I think a man should always get his seed for ensilage corn south a considerable distance from where the corn is to be grown, for this reason: You get seed corn from the south and bring it north and it will grow much larger than corn that has been acclimated in the north. In growing ensilage we are not after yield of ears but after the greatest amount of food nutriment per acre and the corn that will grow the largest and mature sufficiently to make good ensilage is the best kind of ensilage corn, in my judgment.

Corn grown way down in the Carolinas and planted in Michigan would probably not reach sufficient maturity to make good ensilage, while corn grown in Kentucky or Virginia probably would, and that grown in Ohio, or Indiana certainly would. If we will plant this corn as soon as the weather permits, in any normal season it will develop sufficiently to make splendid silage. My experience is that you don't want ripe corn for silage. I'd just about

as leave have ripe timothy hay as ripe corn for silage. It is better than nothing; it will go a good ways; the cattle have to eat it if they can't get anything else, but when you get right down to prime ensilage you want to cut the corn before the ears get ripe, after the earlier ears are nicely glazed and some are dented—that would make the kernel in the dough stage, it is in good shape for the silo. You will find many of the ears then that are just at the boiling stage. They are very palatable and they are very nutritious.

When the canning factory puts up sweet corn for humans they must not let it get dented, for it isn't palatable. It must just be glazed. Now, we like corn at that stage of maturity and we eat it because it is palatable. It is the same way with cattle. If the corn has matured sufficiently so that it is nicely glazed you have got nearly, if not quite as much food nutriment per ton as you have in corn further along and with this southern corn you could raise from one-half to one-third more tons to the acre. I will repeat that in my judgment the best ensilage corn for any section is that variety that will grow the largest and still mature to the glazing stage.

Of course, if a man wants to put his ensilage ground into wheat, why this late variety of corn wouldn't do because you have got to give it the whole season and if he plans a rotation of crops so that he can sow wheat after ensilage corn then he has got to raise a northern-grown variety and get it off the land the first of September so that he can seed the land to wheat, but if he wants feed for cows he had better plant corn that will grow until the first of October or until there is danger of a frost, because he will get more food to the acre and cheaper.

Corn Bran for Hogs.

Our local mill is advertising corn bran at \$1.85 per cwt. What is the feeding value of this product? Is it good hog feed? And how does corn bran compare with wheat bran or middlings in feeding value? I think that bran is worth about \$2 and middlings \$2.35 per cwt.

Calhoun Co.

C. J. B.

The digestible nutrients of corn bran contain 7.4 per cent of protein, 59.8 per cent of carbohydrates, 4.6 per cent of fat. Whole corn contains 7.9 per cent protein, 66.7 per cent carbohydrates, 4.3 per cent fat. This would indicate that this product is not nearly as good as corn for fattening purposes because it contains a much smaller amount of starch and sugar. Corn bran, in fact, contains nearly all of the crude fiber in the corn grain which is not very digestible and therefore it is safe to say that it is not a first-class hog food.

Wheat bran contains in digestible nutrients 12.2 per cent protein, 39.2 per cent carbohydrates, and 2.7 per cent fat. Wheat middlings contain 12.8 per cent protein, 53 per cent carbohydrates and 3.75 per cent fat.

Neither corn bran nor wheat bran are good hog feeds; they contain too much fiber, they are too chaffy, and the hogs don't like them. Wheat middlings, however, are a very good hog food and they furnish the food nutrients in about the right proportion for growing and fattening pigs. I would prefer to pay \$2.35 per cwt. for wheat middlings rather than \$1.85 for corn bran for feeding young, growing pigs.

More than half a million acres of land in eastern Chaves county, New Mexico, including a portion of the Roswell land district, have been designated for entry on the eleventh day of March under the stock-raising homestead plan, is announced by Secretary Lane. Approximately 250,000 acres are vacant public lands, while the remainder are already covered by applications which have preference by right of entry. These lands have been classed as chiefly valuable for grazing and forage crop raising.

21c PER ROD UP BROWN FENCE

Write for Greatest money saving fence bargain book ever printed. Brown fence is made of Heavy DOUBLE GALVANIZED WIRE. Resists rust longest. 150 styles. Also Gates and Barb Wire. Low Factory Prices, Freight Prepaid. Write for wonderful free fence book and sample to test. The Brown Fence & Wire Co., Dept. 149 Cleveland, Ohio

KITSELMAN FENCE

Get It From the Factory Direct

HORSE-HIGH, BULL-STRONG, PIG-TIGHT.

Made of Open Hearth wire heavily galvanized—a strong durable, long-lasting, rust-resisting fence. Sold direct to the Farmer at wire mill prices. Here's a few of our big values:

26-inch Hog Fence—21¢ a rod
47-inch Farm Fence—31¢ a rod
48-inch Poultry Fence—34¢ a rod

Special Prices on Galv. Barbed Wire

Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at reduced money-saving prices. It's free. Write today. KITSELMAN BROS. Box 278 Muncie, Ind.

MASON'S FENCE BARGAINS

Bigger than ever on full gauge, full weight, guaranteed fence. Don't buy until you have Mason's special direct from factory prices and 60 DAYS' FREE TRIAL OFFER.

Send for our new Free catalog showing fencing and gates for every purpose. It points the way to fence well and save big money.

THE MASON FENCE CO.
Box 68 Leesburg, Ohio

FENCE BARGAINS

Open Hearth, full weight, heavily galvanized Fence. Factory to you. Freight prepaid. Get our prices. STANDARD WOVEN WIRE FENCE CO., Dept. 16—Cleveland, O.

Lump Jaw

The farmer's old reliable treatment for Lump Jaw in cattle.

Fleming's Actinoform

Price \$2.50 a bottle. Sold under a positive guarantee. Since 1896 your money refunded if it fails. Write for FLEMING'S VEST-POCKET VETERINARY ADVISER A book of 192 pages and 67 illustrations. It is FREE.

Fleming's Chemical Hornstop

A small quantity, applied when calves are young, will prevent growth of horns—no need to dehorn later. A 50c tube—sent postpaid—is enough for 25 calves.

FLEMING BROS., Chemists
252 Union Stock Yards, Chicago, Illinois

VELVET BEAN FEED

for hogs, sheep and dairy cows. Contains twice as much protein as ground corn. cost \$20.00 per ton less. Special price for quick shipment. Write or phone. RANDOLPH, HALL & YOUNG, Owosso, Mich.

HELP YOURSELF

HELP YOUR COUNTRY

Every dollar you invest in good fencing is added profits and value to your farm and helping Uncle Sam.

Stock can't destroy growing crops—can be turned into fields after crops are harvested and more pasturage turned into meat and milk.

Square Deal Fence

is the fence you will find returns the greatest profit because it lasts longest, looks best, takes less fence posts, costs least in the end. It stands tight and trim the year 'round—can't sag and get loose. Our catalog tells all about it. Send for it today and if you have not already received one, we will send you free a full size 50c edition of Ropp's New 1918 Calculator, both postpaid.

KEYSTONE STEEL & WIRE CO.
2556 Industrial Street, Peoria, Illinois

BUY AJAX-FENCE and Save Money

Shipped Direct from our Factory to You. This means big saving. And you get best quality.

The Quality Extra-Strong Stiff Wire. Naturally rust-resisting—and made more so by thorough galvanizing. The wires are all one piece—no twists to break. Securely held together by Ajax Knots. Millions of Rods in Use.

Send for Free FENCE BULLETIN No. 8110 and Samples

WIRE FENCING

Montgomery Ward & Co.
Dept. O-110 Chicago, Ill.

MINERAL HEAVE COMPOUND

In use over 50 years

CURES HEAVES

Booklet Free

NEGLECT Will Ruin Your Horse

Sold on Its Merits

SEND TODAY AGENTS WANTED

\$3 Package guaranteed to give satisfaction or money refunded

\$1 Package sufficient for ordinary cases.

Postpaid on receipt of price. Write for descriptive booklet.

MINERAL HEAVE REMEDY CO., 463 Fourth Ave., Pittsburg, Pa.

For Sale. 40 horse gasoline or kerosene engine in A-1 condition. The BUNDAY BEDDIN CO., Lansing, Mich.

Make Good With Calves

Of course, we all know that the best way to raise calves is to let them suck the mother, or at least feed them on whole milk. But, as whole milk is valuable to most farmers, other ways must be taken. The past year or so, I have had very good success with my calves and have used the mother's milk for other purposes. We raise a few calves each year for ourselves, but I am particularly interested in feeding calves for veal purposes. We make butter and there is quite a lot of skim-milk that can be used, and by putting it into the calves we get a good profit from this by-product which would possibly otherwise be wasted.

There is a difference now and then in calves, but with a good sturdy calf I take it away from its mother within a day or so. It gets the first milk from the udder, which it needs, by waiting that way. I begin by feeding the calf by hand, by giving it about two pounds of warm whole milk, three times a day for the first week. I am very careful not to over-feed; that is a mistake that many make and it is apt to bring on the "scours." After the first week I gradually displace the whole milk with skim-milk. Within another week or so it is getting only skim-milk. But, by then it gets about three pounds of milk at each feeding, three times a day. Of course, if one is raising the calf to get an extra large one, whole milk is better, but where we wish to get all the profit we can out of mostly skim-milk, we gradually get the calf to feed solely on that. Each week we put in a little more milk until the calf gets twelve to fifteen pounds a day, after a month or over of hand feeding. Close watch must be given, and at the first signs of bowel trouble I reduce the amount. Perhaps after a couple of weeks I let the calf have a little clover hay to nibble on. I have found that by letting the calf run loose in a pen or box stall, that it seemed to gain better than when tied. By raising my calves as outlined above, I have made good profit and used the skim-milk that would have been thrown away.

If one wants a larger calf and can feel that the cost of grain given will pay for it, at the age of four weeks or so, a little grain can be given. Do not put it in with the milk. Place it in a box dry, where the calf can eat all it wants. Mixed feed, shorts or ground corn are good. The calf will eat hay within a couple of weeks and it is also a good plan to have water where it can get it, not too cold, though.

Careless feeding is probably the cause of stunted calves more than any other one thing. They can be successfully reared by hand, but care must be taken to have the milk neither cold nor hot by spells. If it can be at all times near the temperature of new-drawn milk, that is the best. A good many times the calves are fed "any old thing" in the way of milk, on many farms. To have sour milk one day and sweet the next, and so on, will not bring success. Cleanliness is a very important item when raising calves. The feed pails should be washed and scalded and the milk put into clean feeding receptacles. Unclean milk or pails produce germs that make bowel trouble and digestive troubles. The bedding in the pen ought to be changed as often as it gets dirty, too. In hot summer, with its flies, extra care must be taken and the calf should be placed in a dark or shaded pen.

After three or four months, the skim-milk can be dropped on calves that are to be raised for cows. I have found that when they are given milk too long they have a tendency to become "sucker" cows and have to be watched carefully.

I have found that good care, cleanliness, proper temperatures of the milk and regularity, to be the essentials in raising calves by hand, to have success.

The success or failure when developing a herd, depends upon the sturdiness of the calves that are raised. When one is raising a calf to build up his herd, no pains or care should be spared to make the conditions so that the animal may grow as fast and as large as it can. It has been shown that large cows are more profitable producers of milk than smaller cows. The proportion of feed needed to get larger results from the large cow is less than would be necessary to get the same amount of milk from two others. To get the large cow, it takes generous feeding and care of the calf. Calves that are well fed not only seem to grow bigger and mature quicker, but seem to have more vigor and a greater capacity to change feeds into milk when they become cows. Good feeds given to the calves the first twelve months or so, does more good to grow them into better producing and bigger cows, than any amount of extra feed given to them later on. Grain given to a growing calf makes a perceptible difference noticed in a well grown yearling and a half-grown animal that will never amount to anything.

After the calf is over a couple of months and has the capacity to eat grain, a nice ration is as follows: Fifty pounds of bran, fifty pounds of corn meal, fifty pounds of ground oats, and twenty-five pounds of linseed oil meal, mixed. Start with one-half pound a day and gradually increase until two pounds are given, according to age and size. Calves should not be turned out to poor pasturage and even on fair feeding, grain should be given if growing is desired. To develop the digestive organs it is important that the calf gets an abundance of bulky and succulent food. If plenty of feed that supplies nutrients for bone, muscle and blood is given, there need be no fear that the calf may get over fat.

It takes as much study and care to bring up calves successfully as it does possibly, to breed and feed cows correctly. But what is the use to breed to get good calves if one does not take care of them after they are born?

THE GOVERNMENT FORMULA FOR WHITEWASH.

I have been told that by mixing glue with whitewash it would stick better and that by putting carbolic acid in it, it could be used as a disinfectant. I would like more information on mixing and applying whitewash.

Ionia Co. E. G.
A formula for whitewash put out by the United States government a few years ago included glue as a part of the combination. The object of the glue, of course, is to make a more substantial whitewash, even approaching the durability of paint. While the government did not recommend the use of disinfectants, yet there is no question but what a disinfectant used would be of benefit from a sanitary standpoint and would be well worth the expense of putting it in.

The following is the government formula for whitewash: "Slake a half bushel of good lime with boiling water and strain. Add seven pounds of salt dissolved in warm water. Boil three pounds of ground rice to a thin paste and stir in while boiling hot (if rice is not available, use ordinary starch). Add half a pound of Spanish whiting. Dissolve one pound of glue by soaking in water, then heating in a double cooker until dissolved. Add this to the above mixture. Thin to proper consistency and apply hot, if possible. It will require about five gallons of water for thinning. One pint of this will cover about one square yard. If a very white color is desired, a little ultramarine blue may be added to neutralize the yellow. Various tints may be made by the addition of suitable dry colors."

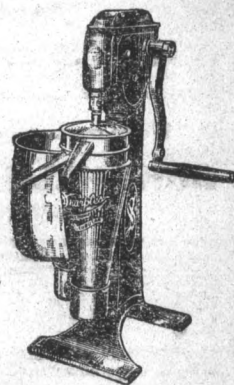
The "Guardian" of Your Cream Profits

It is not a bell; nor a speedometer; nor muscle—it's the suction-feed principle of the Sharples Separator. Other separators do not have this basic advantage—that is why all sorts of make-shifts are adopted. These merely remind you that cream is being wasted—they don't remedy it. To get maximum cream profits you must skim clean at any speed—and there's only one way to do it—use a

SHARPLES SUCTION-FEED CREAM SEPARATOR

Tests prove conclusively that 95 % of all separators are turned under speed. As applied to the Sharples it does not matter—at 35 revolutions or at 55 revolutions clean skimming is certain. With any other separator (no exceptions) there is a constant waste of cream when turning under speed. This cream waste averages about 10 lbs. per cow per year, or the staggering total nationally of over 80,000,000 lbs.

Another big Sharples feature is the one piece bowl, no discs to clean. You get done quicker and feel in a better humor. Write for catalog. Address nearest office, Dept. 18



THE SHARPLES SEPARATOR CO., West Chester, Pa.

Sharples Milkers—used on half a million cows daily

BRANCHES: Chicago San Francisco Toronto

Newspaper Values vs. Costs

Don't confuse these terms. They are not synonymous.

What is a good newspaper worth to you?

THE BREEDER'S GAZETTE may not be quite as "cheap" as some other farm papers, but what is it worth to stockmen? Listen to this:

"An article in a recent issue of THE GAZETTE would be worth a million dollars to the cattle breeders of the United States if they would apply its suggestions in actual practice."—Robert Miller of Canada.

"A recent issue of THE GAZETTE contained a single article that at a conservative estimate will yield to many of its readers the worth of the subscription price of the paper if it were \$200 a year."—W. W. Bryam, Knox Co., Ill.

For less than 3 cents a week you are kept in touch with stock-keeping and marketing in all its branches; you get all the news covering important sales and shows, beautiful pictures of all breeds of live stock and articles all the time, written by the successful men of the business. A specimen copy and book catalog mailed free. Address

THE BREEDER'S GAZETTE,
542 South Dearborn St. Chicago, Illinois.
Subscription price: One year, \$1.50, Canada, \$2.75, including beautiful Holiday Number and International Show Report Number

Wet Beans

We Buy Them. Send Exact Sample In Tin Can. Cull Beans For Sale.
W. L. IRELAND & CO. Grand Ledge, Mich.

Get Cash

For Your Empty Bags
Don't throw away a single bag—they're worth money to you. Prices are way up now. Cash in on all you have. But be sure you get our prices before you sell a single one. We guarantee most liberal grading. Over 20 years in business is your assurance of a square deal every time. We buy any quantity. Freight paid on all shipments to Werthan. Find out what real satisfaction is. Write quick, stating what you have. Address
WERTHAN BAG CO.
61 Dock St. St. Louis, Mo.

B-V-T-Silo

Built of everlasting Brazil Vitrified Fire Clay. Reinforced with steel ribs bedded in cement. You'll never have to rebuild it. Your neighbor has one. Ask him. Send for Booklet D
Brazil Hollow Brick & Tile Co.
Brazil, Indiana

Seed Peas and Beans. Seed Oats:

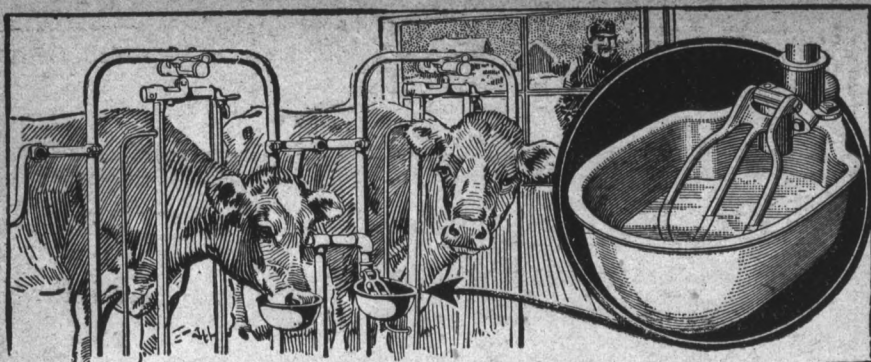
Alexander, Worthy and Swedish. Spring Rye. Spring Speltz.
Edw. E. Evans, West Branch, Mich.

Seed Beans

Northern grown medium pea beans, hand picked dry and hard, absolutely free from anthracnose 99% germination test by County Agt. McMurtry. \$23 per bag of 150 lbs. bags free; last years customers well pleased, reference for fair dealing any bank here. I make a specialty of growing seed beans.
F. R. MING, Cheboygan, Mich.

TIMOTHY SEED \$4.00 per bushel. High purity and germination, first class in every way. Timothy-Alsike Mixture \$4.50 per bushel, 46 lbs. Bags extra at 25c. each. YOUNG-RANDOLPH SEED CO., Owosso, Mich.

Onion Seed our specialty, all kinds of tested fresh seeds. We sell by weight and pay your postage. Catalog free.
ALLENS SEED HOUSE, Geneva, Ohio



Stop the Winter Slump in Milk Production

If you want summer milk quantity at winter prices, it will pay you to find out about STAR Water Bowls.

Milk is 90% water. The yield slumps in winter because the animals don't get enough to drink. Even when the water in outside tanks is warmed, you know some animals won't drink a drop while they're fighting a blizzard in an open yard. And you can't blame them.

STAR Sanitary Water Bowls

But Star Water Bowls bring it right to the stall—an abundant supply of palatable water—and the cow drinks as much as she does in summer. She will take a mouthful of hay or feed and then a drink of water. That's why Winter milk production goes up when STAR Water Bowls go in. This system prevents one tubercular cow from infecting the rest of the herd.

STAR Water Bowls are individual and sanitary. Water comes and goes separately from each bowl. The sick animal can't contaminate the water used by healthy ones.

Don't buy any kind of barn equipment until you investigate STAR Goods and the patented features found only in this line. Unit System Stalls assembled at the factory and with sanitary Arch Construction. The STAR Adjuster—the STAR Curb Clamp. The strong Giant STAR Stanchion easily adjustable and with the One Hand Lock. Wood-lined and Automatic Sure-Stop. STAR Litter Carrier Outfits meet every need.

Write us for catalogs. STAR goods sold by best dealers everywhere

HUNT-HELM-FERRIS & CO., 14 Hunt St., Harvard, Ill.
New York Branch: Industrial Bldg., Albany, N. Y.

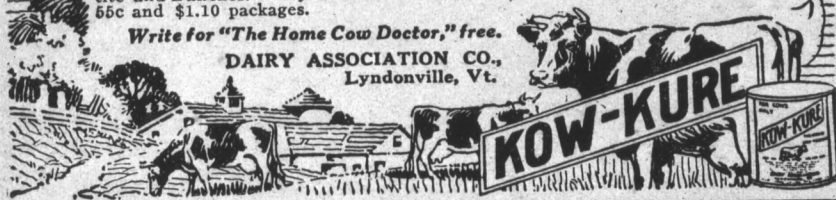
The Cow's Health—First of All

To think of the milk yield first and the cow's health afterward is putting the cart before the horse. Many "poor milkers" only need to have their systems working properly to become good producers.

KOW-KURE, the great cow medicine, makes cows healthy and keeps them healthy. Working on the digestive and genital organs, it is a prompt, sure remedy for Abortion, Barrenness, Retained Afterbirth, Scouring, Lost Appetite and Bunches. Try KOW-KURE; druggists and feed dealers sell it—65c and \$1.10 packages.

Write for "The Home Cow Doctor," free.

DAIRY ASSOCIATION CO.,
Lyndonville, Vt.



WATCH YOUR CALVES!

At the first indication of scours give them
Dr. DAVID ROBERTS' CALF CHOLERA REMEDY

Successfully used by thousands of dairymen

For farther information read the

"PRACTICAL HOME VETERINARIAN"

Send for free booklet on ABORTION IN COWS
If no dealer in your town, write

Dr. DAVID ROBERTS VETERINARY CO., Waukesha, Wis.

Only \$2 DOWN ONE YEAR TO PAY

\$29 Buys the New Butterfly Junior No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime against defects in material and workmanship. Made also in five larger sizes up to No. 8 shown here.

Earns its own cost and 30 DAYS' FREE TRIAL more by what it saves in cream. Postal brings Free catalog folder and "direct-from-factory" offer. Buy from the manufacturer and save money.

ALBAUGH-DOVER CO., 2165 Marshall Blvd., CHICAGO

Get Silver's NEW BOOK

ON SILO FILLERS

Now ready to mail. Learn how "Silverized Silage" increases yield of farm stock. This 52 page catalog covers all styles hand or power cutters. Send for it.

The Silver Mfg. Co.
390 Broadway, Salem, O.

\$17.95 ON TRIAL

American FULLY GUARANTEED CREAM SEPARATOR

A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for \$17.95. Closely skims warm or cold milk. Makes heavy or light cream. Different from picture, which illustrates larger capacity machines. See our easy plan of

Monthly Payments

Bowl a sanitary marvel, easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan.

Western orders filled from Western points.

AMERICAN SEPARATOR CO.
Box 3061 Bainbridge, N. Y.

USE NATCO DRAIN TILE

Farm drainage demands durable tile. Our drain tile are made of best Ohio clay, thoroughly hard burned—everlasting. Don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. Also manufacturers of the famous NATCO IMPERISHABLE SILO. Natco Building Tile and Natco Sewer Pipe.

National Fire Proofing Company - 1115 Fulton Building, Pittsburgh, Pa.

Dairy Problems

By COLON C. LILLIE

Grain Ration for Dairy Cows with Clover Hay and Corn Silage.

I have clover hay and ensilage. Can get oil meal at \$65 per ton; cottonseed meal at \$60 per ton; middlings at \$56 per ton; shelled corn at about \$1.90 per bushel. I have fed some oil meal on the ensilage, but would like to know which of the grains I should buy, and about how much to feed in order to make it pay me, when I am selling milk at \$3 per cwt. for 3.5 per cent butter-fat milk. Also, have been feeding oil meal and middlings to hogs that weigh about 175 pounds. Would like to know the proper feed to buy to fatten these hogs at the above prices. I have no skim-milk.

Gratiot Co.

SUBSCRIBER.

Taking into consideration the fact that protein foods are relatively cheaper than carbonaceous foods, I don't believe you can get a better and more economical ration than by feeding two pounds of cottonseed meal and two pounds of oil meal per cow in connection with your corn silage and clover hay.

I would feed the oil meal at one feed, say in the morning, and the cottonseed meal at night, feeding them in the same manner you have been feeding oil meal—by sprinkling the feed on the corn silage. This will give you a very concentrated grain ration and it will furnish you a little more protein than necessary but inasmuch as you can buy these highly protein foods for almost the same price that you can wheat middlings, they are the most economical to buy at the present time, especially when you have corn silage as a basis of the roughage part of the ration.

The Best Feed for Hogs.

At the present price of feed and the present price of hogs it is difficult to tell you what feed to purchase in order to make a profit. It is a question whether any profit can be made or not.

There is no better hog food to balance the corn ration than oil meal unless it is tankage. Sometimes it is impracticable to get tankage, then oil meal makes the best substitute. Never feed cottonseed meal to hogs. Wheat middlings are a splendid food for hogs but at the close of the fattening period nothing seems to be quite as effective in putting the finishing on as corn and I would recommend that you make a good thick slop out of wheat middlings and oil meal and feed the hogs all they will eat of this and then give them corn or corn meal. Unless the price of hogs advances it is doubtful if you can get any profit but you won't lose very much and you will be a good soldier of the soil and complying with the request of the government and furnishing the very kind of meat that the government is most in need of to help win this great war.

A Grain Ration for Young Calves.

Please give me a balanced ration for calves from two weeks old and up. I have ground wheat and oats, mixed corn meal, bran, and oil meal. I want to give about one and a half quarts of separated milk to a feed, the rest of the liquid, water. If these feeds do not balance tell me what to substitute.

Lenawee Co.

G. D. W.

Careful experiments at Wisconsin Experiment Station have proved conclusively that the greater combination of grains you can have mixed together the better for young calves. These experiments were performed to find if a substitute could be developed to take the place of skim-milk for calves. The demand for city market milk and for condensed milk is so great in some sections the people wish to sell all their whole milk and try to raise their calves with a milk substitute. You are probably aware that there are certain so-called calf meals on the market which are claimed to be very good substitutes for skim-milk and this experiment over in Wisconsin was to enable the farmer to make a combination of grains that would be a substitute for

these calf meals. When they mixed a great variety of feeding stuffs together, made it into a thin gruel and fed it as a substitute for milk, they got fairly good results and so this combination of ground wheat and oats and corn meal and cottonseed meal and oil meal is a move in the right direction.

It ought all to be ground as fine as possible and for the best results with calves two weeks old it ought to be cooked into a thin gruel and mixed with milk. Now, the more feeding stuffs you can get into this combination the better, only don't put in cottonseed meal. As the calves get older you can work them on to a dry grain ration, but until they are two or three months old I should prefer to make this into a thin gruel and feed it in this way. At the same time they are eating this gruel you can give them dry grain in their mangers and get them used to eating dry grain so that when the time comes the change will not be so sudden. All the while you want to encourage the young calves to eat good clover hay, in fact, any variety of forage.

The Best Ensilage Corn.

Which of these two varieties of ensilage corn are the best for this latitude, "Pride of the North," or Red Cob Ensilage, and will they mix with a good eighty days' white corn if sown in the next field? I have a good early corn and I don't want to take chances on mixing, if any.

Clinton Co.

L. W.

Pride of the North is a medium variety of dent corn so far as maturing is concerned. In good corn years this will properly mature. Red Cob ensilage is a southern variety of corn which will not mature here, but if it is planted in good season it will mature sufficiently to make good ensilage and it grows much larger than Pride of the North, consequently you can get more tons of ensilage per acre and more tons of cow fodder per acre.

Your early variety of corn is the kind to plant where you want to mature the corn crop and save the ears, but it will not yield as many tons of corn silage per acre as the Red Cob ensilage.

Some people have grown Red Cob ensilage and didn't plant it until June and it didn't get matured enough to make first-class silage. It ought to be planted as early as you plant any corn and in most seasons it will go beyond the roasting stage which will do all right for silage.

SUNFLOWERS FOR SILAGE.

I note in a recent issue of the Michigan Farmer where inquiry was made by an Otsego county farmer concerning the desirability of raising sunflowers for silage, that soy beans were recommended instead. I presume farmers in this part of the state are obliged generally to raise their silage material among stumps where the tractor, check-rower and corn binder are not always in place. They are obliged to contend with frost and weather conditions under which corn does not always thrive. Neither are they familiar with the growing of soy beans.

The writer has lived near the Straits for twenty-eight years, and never saw a crop of soy beans growing in this section. On the other hand, he has seen splendid stands of sunflowers grown every year. For the past four years he has grown them for silage and is entirely satisfied with his experience.

The silage has been first-class when the corn and sunflowers are mixed in proper proportions. When there is not to exceed half sunflowers the silage gives very little evidence either in appearance or smell of there being anything but corn in it.

The boys and I plant the corn with hand planters, one plants sunflowers and the other two plant corn. We aim to put from one to three sunflower seeds in a hill. The one row of sunflowers turns out about the same tonnage of fodder as do the two rows of corn. In the fall we cut and put them on the wagons together and feed them through the silo cutter, thus thoroughly mixing the stalks. We cut off the best developed sunflower heads at the silo filler and secure a lot of seed and some splendid feed for the chickens.

Frost that kills corn does not affect sunflowers, and when we have an early frost these sunflower rows perform the service of "saving grace" for the silage. I would advise my Otsego county neighbor to plant two rows of corn and one of sunflowers to fill his silo.

Cheboygan Co. H. F. BAKER.

CROSSING HOLSTEINS WITH JERSEYS.

Is it advisable to cross Holstein cows with Jersey bull, and if one were going to cross at all, which would be the best cross, Holsteins with Jerseys, or Jersey cows to Holstein bull?

Muskegon Co. A. K.

It is an absolutely wrong principle of cross breeding to cross two distinct breeds of cattle or any other animals. If a man has Jerseys and they don't prove satisfactory, he should get rid of them and purchase Holsteins, or if he has Holsteins and they are not satisfactory, he should do likewise, but when he crosses breeds, like Jerseys with Holsteins, he is simply going into the great unknown in the breeding world.

He is actually breaking up and disorganizing what breeders have spent their whole lives in trying to develop, fix and perpetuate in the two respective breeds. The Jersey cow has been bred pure for more than two hundred years. For more than one hundred years no animal has been allowed to be shipped to the Isle of Jersey except for immediate slaughter, consequently there has been no foreign blood introduced and the Jerseys and Guernseys are examples in this respect. They breed true to type and true to their breed characteristics, simply because there has been no crossing. They have been developed as special dairy animals with certain fixed characteristics.

The same thing can be said of the Holstein. Great care has been taken by the people of Holland in not allowing foreign blood to be mixed with this breed. They have been developed with different ideals than the Jersey or Guernsey and their environments have been different and we have here also a special breed of dairy cattle with fixed characteristics.

Now, when you undertake to cross these two breeds which are the extremes among dairy breeds, you are simply breaking up and disorganizing, tearing down what skilled men have taken pains to build up and establish through generations. Of course, in time, by crossing Holstein and Jersey and by careful selection, a man could build up a new breed of cattle with fixed characteristics but it would take years and years. This principle of fixing the type of animals is one that takes time. A man cannot do it, even in a lifetime. His ideas must be handed down to his sons and the same painstaking care must be given for more than one generation in order to carefully fix the types and characteristics that we find in Jerseys and Holsteins.

The only safe and sane manner of breeding is to select the breed one likes best and the one that fulfills the conditions and purposes for which they are being used and then stick to that breed. If one has Holstein grades he should invariably breed them to a pure-bred Holstein sire. If one has Jersey grades, he should breed to a Jersey sire and when he has a herd of pure-breds even, he should make selections

that will tend to carry on the breed characteristics and not select animals of the given breed which show breed characteristics less distinctly because in that kind of breeding he is getting away from the idea of the developers of the breed and he is launching out into the great unknown and the probability is that he will get so thoroughly lost that he will never find himself. So my advice would be not to attempt to cross breeds.

SPRING DAIRY PROBLEMS.

(Continued from page 358).

is somewhat preferable to put the beans in the hills of corn. In this manner, cross cultivation is not interfered with.

Likewise, the soy beans will make twice the growth if they are inoculated. This may be done with either a pure culture or with soil obtained from a field where soy beans have been grown. Dissolve a half pound of furniture glue in a gallon of water. Lay a peck of this soil on a smooth granary floor and pour the beans on top of the pile of dirt. Now, while one man shovels over the mass of dirt and beans, the other will sprinkle on the glue solution with an old broom. The beans may be planted as soon as they have dried sufficiently to run through the planter. We know from experience that this glue method will insure inoculation, especially if care is taken to get the soil from close around the roots of the soy bean plants.

A Word to the Beginner.

Spring is the heyday of hope and good thoughts and resolutions crop out spontaneously with the coming of this delightful season. Many young men who feel dairywise inclined hesitate to purchase their foundation stock in the fall since they have been told that pure-bred cows require more care through the winter than scrubs and dunghills. Moreover, with the coming of pastures it may be found that the stuff on the place will not be able to consume the feed at hand. The next thing is to buy something to make economical use of the surplus feed.

I wish I might emphasize the importance of the beginner starting with his foundation stock at once. Admittedly, the dairy stocks of the old world are rapidly being depleted. Moreover, due to the fact that the people over there are more occupied with the profession of self-defense than they are in the art of breeding animals, there is no foreign demand at present for dairy animals. The sum total of these conditions is that dairy stock in this country is now selling at a little above par, thought not much. As sure as day follows night, however, when we have vanquished the Kaiser and placed him on the famous Isle that a hundred years ago was trodden by Napoleon, the old world peoples will resume the peaceful art and science of dairying. Then, the countries that have heretofore sent choice animals to our shores will ask for the return of animals as good as they sent. In the face of this, it seems highly probable that a golden horizon lies ahead of the breeder of good dairy cattle.

It is true that cattle usually sell somewhat higher in the spring sales than at those in the fall. If it costs anything to winter a cow and those of us who have footed the bills know that it is expensive, it is no more than right that the cows should bring more money in the spring. To offset this, however, the summer risks are small and there is some return with a minimum of outlay. The time for any beginner to start is when he gets the fever and the money or backing at the same time. Usually, though, these two conditions are most likely to obtain in the spring.

It is a safe rule to buy foundation stock from a reliable breeder. Beware of the huckster for he often exploits cull cows suffering either from infectious abortion or tuberculosis.

Save Butter-Fat, Time and Labor for Yourself and for Uncle Sam with a NEW DE LAVAL CREAM SEPARATOR

Save for Yourself Butter-fat right now is selling at the highest price in many years, and you can't afford to waste an ounce of it. Whether you are trying to get along without any cream separator or using an inferior of half-worn-out machine, you are losing valuable butter-fat that would soon pay for a New De Laval.

The De Laval is not only a cream saver but a time and labor saver, and with the present shortage of farm help every farmer needs to utilize time and labor saving machinery wherever it is possible to do so.

Save for Uncle Sam It is the patriotic duty of every cow owner to save butter-fat. We are a nation at war, and not a particle of fat should be wasted. When all European countries are encouraging the use of the best cream separator, can we do less?

Buy Your De Laval Now Railway delays are so serious that deliveries can't be depended upon, and if you don't order your De Laval early there is no telling when you can get it. Then, too, labor and material conditions may compel higher prices. The sooner you get a De Laval saving butter-fat and labor for yourself and Uncle Sam, the sooner it will pay for itself.

If you haven't the spare cash right now, that need not stand in the way of your getting a New De Laval at once. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several installments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.



Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for new catalog or any desired information.

The DeLaval Separator Co.

165 Broadway, New York 29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

WHO AM I?



I am the fellow that milks with "MEHRING'S MILKER"

It makes me smile when I see poor guys pulling away by hand. Buy a Mehring Milker and you can smile too. It was the first practical milker, and still has the lead in speed, efficiency and cheapness of operation and repair. Send for a catalogue and be convinced. It will milk one or two cows at once. Price \$30 cash or \$55 on trial. Also engine power milkers. W. M. MEHRING, - Keymar, Maryland.

AUTOMOBILE TIRES TUBES ACCESSORIES SERVICE

EVERYTHING FOR THE AUTOMOBILE

PRICE

You are going to need something for that car before taking it out for next season. WE CAN SAVE YOU MONEY ON IT.

OUR BIG BARGAIN BULLETIN IS FREE

WE SHIP EVERYWHERE

UNION TIRE CO. 232 WOOD ST. PITTSBURGH, PA.

\$40 FUR SETS \$12

AT FIRST COST FACTORY PRICE



You furnish the Raw Hides, we do the dressing, tanning and make up the latest styles Coon, Beaver, Muskrat, Fox. Our catalog gives you some valuable information on furs.

W. W. WEAVER, Reading, Mich.

GRASS SEED

FREE SAMPLES Wonderful Value Wholesale Prices Profits Divided with customers. Don't fail to investigate these bargains. Re-cleaned Tested Timothy \$3.25 bu., Clover \$14 to \$16, Alfalfa \$8.50 Alsike Clover and Timothy, Sweet Clover and other Grasses and Field Seeds at unusually low prices. All sold subject to State or Government Test under \$6 absolute money-back guarantee. We are specialists in grass and field seeds. Located so as to save you money and give quick service. Send today for our big profit-sharing, money-saving Seed Guide which explains all, free. Buy now and save money. Write American Mutual Seed Co., Dept. 631 Chicago, Illinois

FOR SALE.

Until the present supply is sold. Michigan Wonder Seed Oats \$1.25 per bushel Canadian Field Peas Number 1 \$4.50 per bushel Mixed poultry scratch feed with no grit \$3.60 hundred Kila Dried mixed corn \$3.50 hundred Sacks are free with the scratch feed seed sacks for the other grain that you want. Will send samples of any of the grain. R.E. Smith, LeRoy, Mich., Dealer in everything

Oats. Scottish Chief White. Barley, bearded, also beardless. Stiff straw. Polled Durhams. O.W. sows, bred. White Wyandottes, \$2 and up. White Belgian Geese. Frank Bartlett, Dryden, Mich.

For Sale. Seed Beans White 98% test all in the barn before frost \$17 per 100 lbs. with sack. Godfrey Simon, R. 1, Central Lake, Mich.

Women Make Waste

places yield enormous profits with new fruit wonder. A remarkable horticultural achievement. Fully described in our BEARING PLANTS BULLETIN 92 free. Camerson Smith Sons 602, No. 39 So. LaSalle St., Chicago

SAVE TIME by using simple unique account book that keeps the farm business at one's finger tips with very little work. Write for particulars. OTIS ACCOUNT BOOK CO., 1821 Chadbourn Ave., Madison, Wis.

WANTED FARM MANAGER

A practical, experienced, trained man, of good executive ability, for the position of Farm Manager on our large farm. Apply by letter, stating qualifications and experience.

TRAVERSE CITY STATE HOSPITAL

GEO. B. PIKE, Steward, Traverse City, Mich.

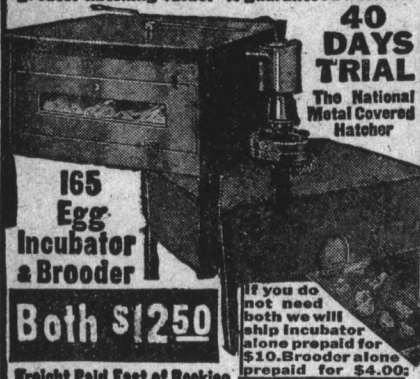
Wanted Married man to work on farm, Good wages & house. Address R. L. STANTON, Grosse Ile, Mich.

WANTED—position working foreman on good farm. Understand handling stock, dairying and machinery. References. Married. Box 3216, Mich. Farmer, Detroit.

When writing to advertisers please mention The Michigan Farmer.

NATIONAL Gets Big Hatches

J. L. Orr, Malden, Mo., writes: "Out of 592 eggs I got 588 thrifty chicks. My first experience with an incubator." The 1918 National with all latest features and improvements is the greatest incubator bargain ever offered. It has hot water heat—double wall— asbestos lining—self regulating and ventilating—double glass doors—safety lamp—copper tank, etc. No extras to buy. Strongest, most durable incubator made. Money cannot buy greater hatching value. A guaranteed hatch.



40 DAYS TRIAL
The National Metal Covered Hatchery
165 Egg Incubator & Brooder
Both \$12.50
If you do not need both we will ship incubator alone prepaid for \$10. Brooder alone prepaid for \$4.00.
Freight Paid East of Rockies
Take no chances. The National is built on Government specifications. Simple, compact, economical. Contains every modern operating convenience. A proven cold weather hatchery. The World's Greatest Incubator Bargain. Send postal for Free Catalog and Poultry Book worth dollars to every poultry raiser—or order direct from this ad and save time. Comes set up ready to run with book of instructions. You take no risk. We deal fair and above board—no red tape. Satisfaction guaranteed or money refunded. Order now—start hatching early or send for poultry book today sure. Get big profits from poultry in 1918.
National Incubator Co., Box 311, Racine, Wis.

You Take No RISK With An Ironclad **Both \$12.50**
30 Days Free Trial **Freight Paid**
10 Yr. Guarantee
Think of it! You can now get this famous Iron Covered Incubator and California Redwood Brooder on 30 days trial, with a ten-year guarantee, freight paid east of the Rockies.
150 EGG INCUBATOR CHICK BROODER
Incubator is covered with galvanized iron, triple walls, copper tanks, nursery, egg tester. Set up ready to run. Brooder is roomy and well made. Order direct from this advertisement—money back if not satisfied or send for free catalog.
IRONCLAD INCUBATOR CO.
Box 121, RACINE, WIS.
Made of Redwood cov'd with Galv. Iron

\$8.95 Buys 140-Egg Champion Belle City Incubator
Prize Winning Model—Hot Water, Copper Tank, Double Fibre Board Case, Self Regulated, Thermometer Holder, Nursery. With \$5.25 Hot Water 140-Chick Brooder—both only \$12.95.
Freight Prepaid East of Rockies and Allowed Towards Express
With this Guaranteed Hatching Outfit and my Guide Book for setting up and operating you are sure of success. — My Special Offers provide ways to make extra money. Save time—Order Now, or write for Free catalog, "Hatching Facts"—It tells all. — Jim Roman, Pres.
Belle City Incubator Co., Box 14, Racine, Wis.

Keep Your Hens a Laying
Trust your hatching to time tried and tested
"SUCCESSFUL"
Incubators and Brooders Used by the big money makers who stay in business year after year. Poultry Lessons Free. Booklet, "How to Raise 48 out of 50 chicks," 10 cents. Catalog Free. Write today. Des Moines Incubator Co., 363 Second Street, Des Moines, Iowa

\$8.75 Buys this 150 Egg INCUBATOR
All set ready for use. Express paid. Brooder extra \$2.75. Immediate shipment. Order direct from ad. or send for circular.
Wolverine Sales Co., 711 Delaware Street, Grand Rapids, Mich.

Tells why chicks die

E. J. Reefer, the poultry expert, 239 Reefer Bldg., Kansas City, Mo., is giving away free a valuable book entitled, "White Diarrhoea and How to Cure it." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent. of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

WILL SAVE YOUR CHICKS

Any reader of this paper who will write P. J. Kelly, the Poultryman, at 73 N. 2nd St., Minneapolis, Minn., will receive a Free Copy of this new booklet "White Diarrhoea in Baby Chicks." It tells how to prevent, remedy and save the whole hatch. It's free and you are urged to write for it at once. Advertisement.

POULTRY SUPPLIES and equipment. Everything you need from legbands to buildings. 40 page free catalog quotes lowest prices on hundreds of articles.
GEORGE B. FERRIS, 634 Shirley Street, Grand Rapids, Mich.

POULTRY
Baby Chicks from Standard Bred S. O. White and Brown Leghorns. Good laying stock. \$15 per 100. Safe arrival guaranteed. Catalogue free. Book your order now for spring delivery.
Wolverine Hatchery, Box 202, Zeeland, Mich.

Baby Chicks. Bred-to-lay S. O. White and Brown Leghorns at last year's price, \$12 per 100. No catalog or circular. Order direct from this ad. Cash in full with order. Hatch every Tuesday, beginning April 2. Sunnybrook Poultry Farms, C. G. Burroughs, Prop., Hillsdale, Mich.

The Food Board's Reply to a Poultryman

WILL you kindly give me some much needed advice?" writes a Vermont farmer to the United States Food Administration, "to govern my actions in complying with your recent order prohibiting the sale and slaughter of hens after February twenty-third.

"I am operating a farm of 206 acres," he continues, "lying in the Champlain Valley, Vermont, and have a flock of 1100 White Leghorn hens of which about 700 are last year's pullets. My pullets produce about 160 eggs apiece a year. It is my practice to hatch between 600 and 700 pullets each spring, the first hatch coming off about April 1. As the capacity of my plant is about 1000 birds and is now overstocked, I will have to cut out the hatching until such time as you may permit the sale of my stock to make room for the new."

This man understands the purpose of the regulation notifying licensees not to buy live or fresh-killed hens and pullets until after April 30, for he con-

venience is only thirty days during April. Temporary quarters for the surplus hens during that time should prove no serious problem on a farm of 206 acres. After April 30, the surplus hens may be sold for slaughter, in the absence of a better market.

3. Another choice is a few weeks' delay in the hatching season so that chicks will be hatched about May 1 after the surplus hens are sold.

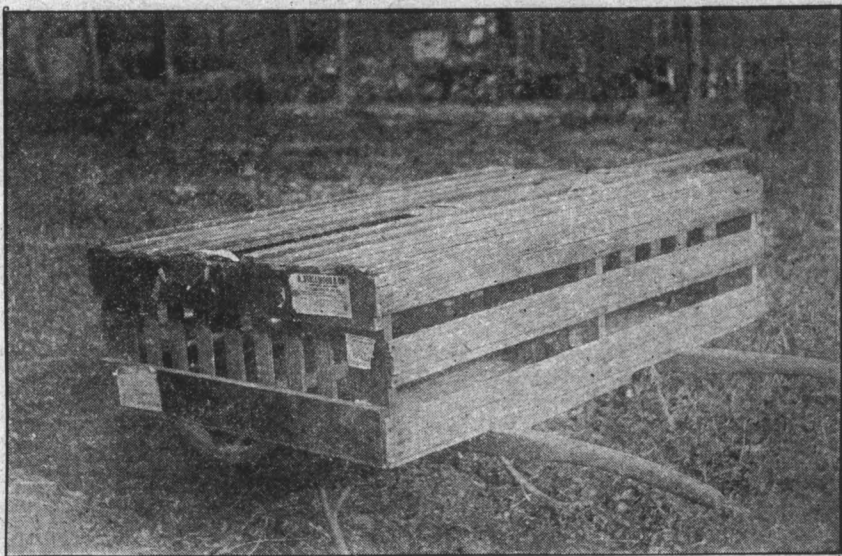
Any one of these options or a combination of them seems to impose no very serious hardship. The Food Administration points out that the average yield of spring eggs according to past experience is about eighty per cent of the meat value of the hens in the country. And in this particular flock, the production per bird is unusually high.

The problem seems in its final analysis to be one of profit on one hand and the amount of food produced on the other, considering the future as well as the present. Under the regulation notifying poultry buyers not to ac-

readiness so that there will be no delay in placing them under conditions conducive to rapid growth. Cover the brooder floor with a couple of inches of sand and then sprinkle clover chaff or straw over the sand. This will make a fine scratching floor and will reduce the danger of toe-picking. The chicks that remain in the shipping box after reaching the farm soon become restless and then they may form the toe-picking habit. If they are busy scratching in the litter they soon forget each other's feet in the desire to hunt for bits of food.

Sanitation in the brooder house is of first importance in starting the chicks. If the floor becomes wet and dirty the chicks are soon unclean and this rapidly leads to a diseased condition. As soon as possible allow the chicks to go out on the ground and scratch. It is a sure prevention for leg weakness. If the weather is too cold for outdoor ranging, a few clods of earth thrown on the brooder floor will furnish exercise for the chicks.

Sour milk is valuable in the ration to assist in preventing bowel trouble but it must be fed in clean dishes. We find that the small sanitary fountains are almost necessary to keep the chicks from wallowing in the milk. This not only contaminates the milk and makes it an unhealthful food, but the chicks become smeared with dirt and milk. It is better according to our experience, to leave milk out of the ration rather than feed it carelessly.
Ingham Co. — R. G. KIRBY.



For Food Conservation Keep Shipping Coops Idle, Urges the Government.

tinues, "Of course, such a line of action would throw onto the market about 200 dozen eggs that I would otherwise use in incubators, but there would be the loss of about 700 broilers and my flock will not lay as many eggs this year without the new stock.

"There is a difference in the effect of your order when applied to a man running a poultry plant of a fixed capacity as compared with a man who has a few hens running at large about his barns. At this time I have a flock of cocks at an expense of about forty cents per month per bird that should go to market at once if they are not to be used as breeders; the feed they are eating should be saved. Will you kindly tell me what should be done?"

Three Choices to Select from or Combine.

Here is a case where a general order, necessary as a war measure, and of benefit to the industry as a whole, causes a specialized poultryman anxiety and inconvenience. Under the spirit of the regulation, several alternatives are permissible. (Male birds are not affected by the regulation and may be sold at any time for any purpose.)

1. Surplus hens and pullets may be sold as breeding stock. With the impetus which meatless meals and days have given the poultry industry and the nation-wide effort toward larger flocks, there should be an outlet in every locality for well-bred fowls—especially birds which average 160 eggs apiece annually. The Food Administration's order aims only to prevent the slaughter of hens and pullets. There is no restriction on the distribution of high-class breeding stock; this, on the other hand, is encouraged.

2. The edict extends only through April 30; and as the poultryman's first hatch comes off April 1, the period of

cept live or fresh-killed hens or pullets until after April 30, 1918, it is confidently hoped that the food supply of the country will be increased. But the letter of the regulation applies neither to farmers nor to consumers. Nor does the Food Administration seek to dictate to poultrymen how they shall conduct their business.

More Money or More Food.

It seeks rather to safeguard the nation's food supply and to most effectively share our food savings and surplus with the Allies to win the war. Perhaps this farmer honestly believes that the marketing of his surplus hens for direct consumption would be in harmony with the spirit of the new regulation. Considering present housing facilities, hatching plans, future broilers and winter eggs, he may feel justified in believing he can best serve his sons or his neighbors' sons "over there" by marketing his hens—fowls that he admits are excellent layers—to a private trade.

But if he has looked at the matter chiefly from a financial rather than from a food point of view, seeking to profit by the meatless days and by the demand for fowls during Jewish holidays, and has calculated how he can make the most money rather than produce the most food, the sale of his surplus stock for use as meat is adverse to the spirit of the new poultry regulation.

Thus there are plenty of choices. He is immune from legal penalty and is subject only to his conscience. This man is no doubt one of many who this spring must decide between patriotism and profit.

STARTING DAY-OLD CHICKS.

On the day that chicks are received by express everything should be in

CAUSE OF HEAVY LOSS OF BEES THIS WINTER.

The very heavy loss of colonies of bees this winter has been due almost entirely to insufficient food and insufficient protection. It is the effect of too little or no packing that I want to discuss in this article. Every bee-keeper is feeling his loss keenly at this time and so I now want to make the statement that most of the losses which were sustained up to the first of March were a direct result of insufficient protection. There is no doubt about having had a very severe winter. But it is also true that some bee-keepers have wintered their bees outdoors with very little loss while others in similar situations have lost from twenty-five to one hundred per cent of their colonies. This fact is very significant. The bee-keeper who packed thoroughly is the one who has not sustained unusual losses. Bees generate heat through the consumption of food and by muscular activity. If bees are not given adequate protection, then they must consume immense quantities of honey in order to keep up the high temperature. For that reason many colonies have starved to death. Colonies that had enough honey to carry them through, if properly protected, have starved because they were not protected and therefore had to consume honey that they ought not to have been compelled to use until late in the spring. The heating of an unprotected beehive in winter works out about like trying to heat a house with all the doors and windows open. Bee-keepers must realize that bees to be normal in winter must never cool to less than fifty-seven degrees in temperature. If their temperature falls to forty-five degrees they become numb and unless they warm up very soon they die. If the bees are to maintain a temperature of not less than fifty-seven degrees in zero weather, it stands to reason that something more than an inch board must separate them from the cold outside. If the bee-keepers will learn the lesson that they ought to learn from their losses this winter, then the loss may be turned into profit in the future. It sounds well to our ears to console our-

selves with the statement that the cold weather was to blame this winter, but if we are to profit from the loss, let us look the facts squarely in the face and admit that we, as beekeepers, are to blame.

When the first nice warm day comes, the bees that are still living will be investigating the hives of the dead colonies. There are thousands of dead diseased colonies in Michigan now. If the bees are allowed to rob out the diseased colonies, then the disease will be scattered throughout the neighborhood. The state law requires that all dead diseased colonies shall be tightly and securely closed so that no robbing can take place. It is still better to close them up and then take them inside of a tight building. And it is cheaper than to pay a fine of \$25. Don't take a chance, supposing that yours are not diseased. If anyone knows of a neighbor who is not closing up the dead colonies, it might be doing that neighbor a very great service in telling him of the law. It should be remembered that ignorance of the law is no excuse in court. But anyway, dead colonies should be cared for as an insurance of the vicinity against an outbreak of bee diseases.

Mich. Ag. Col. B. F. KINDIG.

POULTRY QUERY DEPARTMENT.

Trouble with Chicks.

I would like to know why so many of my chickens were ruptured when ready to be taken out of the incubator. They would live from three to five days then die. I never ran an incubator before until last spring and about 50 out of 80 would be ruptured.

Eaton Co. Mrs. I. W.

During the nineteenth day of incubation the young chick absorbs of the yolk to itself the abdominal cavity. If eggs are taken from fowls that are low in vitality, the young chick is weak and does not absorb the yolk properly. Overheating of the incubator after the eighteenth day would cause wrong development. This would account for the lack of proper absorption of yolk.

Egg Eating Habit.

I have about ninety Rhode Island Reds that I have kept shut up all winter. They get good feed every day, buckwheat, corn, wheat screenings, beef scraps, oyster shells, plastering, and chopped alfalfa. But they eat their eggs as fast as they lay them. What can I do for it? If right there I will get from ten to twelve eggs, otherwise I don't get any. I have been told by filing their bill a little it would help. Would you advise it?

Van Buren Co. M. R. C.

It is very difficult to break hens of the egg eating habit. Various methods, such as filling an egg shell with red pepper, placing a china egg in the nest, etc., have been tried, but with very little success. This habit is started because of the lack of animal food, or accidentally a hen breaks an egg in getting out of the nest and thereby establishes the habit. However, if the hens get plenty of beef scraps or sour milk and are kept busy during the day, they are not as likely to begin such a habit.

Very often there is only a hen or two in the flock which do this destructive work and by carefully watching one can pick them out and get rid of them. I can suggest no other method than this, except that you try the stuffing of an egg shell with pepper.

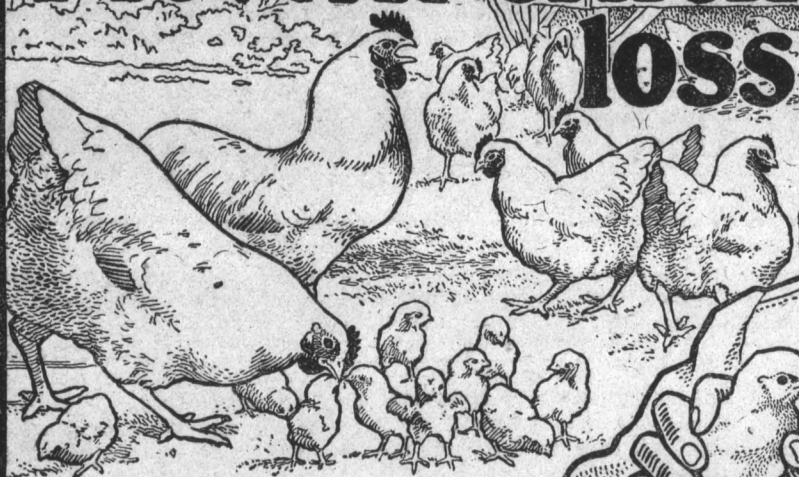
I do not believe that the filing of the hen's bill will help any.

WHY HATCH CHICKENS EARLY?

Early hatching means better chicks, better success in rearing, higher prices for surplus cockerels sold as broilers, mature pullets in the fall that will lay more eggs during cold weather, and larger, plumper roasters and capons for the holiday markets. It also means greater use from incubators and brooders and better labor distribution by putting the hatching and care of the small chicks ahead of the rush of spring planting.

Not "Bit" but "Utmost"—the end is worth our "All."

Prevent chick loss!



For years I have made a special study of the causes of chick loss. I have proved that these causes can be largely prevented or overcome. I know that my Poultry Powder is just the help that chicks need to get through the first vital weeks.

Dr. LeGear's Poultry Powder

has saved millions of chicks. Thousands of poultry raisers use it to save their chicks from gapes, leg weakness, bowel trouble, etc., and to make them grow faster and do better. It will **PAY YOU** to use it, too. This of all years you can't afford to lose chicks—they'll be worth so much more money this year than ever before and, besides,

the Nation is calling for more poultry to help win the war. My Poultry Powder increases egg production. It also strengthens breeders and helps fertility so that you'll get larger, stronger hatches. Try it at MY RISK—buy a package from your dealer. If it doesn't do all I claim, the dealer is authorized to refund your money.

Dr. LeGear's Lice Killer

is a life-saver at chick time. Treat all your setting hens with it; put it in nests, etc. Absolutely GUARANTEED to rid your flock of lice.

Over 40,000 dealers sell my remedies—never sold by peddlers. Ask YOUR dealer. Also ask him or write for my 112-page Stock & Poultry Book FREE.

Dr. L. D. LeGear Med. Co., 712 Howard St., St. Louis, Mo.

Dr. LeGear's Stock Powders keep stock fat and healthy

Dr. LeGear, the noted poultry expert, won the Grand Prize Cups at Kansas City Poultry Show, January, 1918.

Increases egg yield—here's proof:

Clarksburg, W. Va., Feb. 12, 1918

"Have used your poultry powder two years; and had no sickness in my flock in that time. That it will promote egg laying, I have proved beyond a doubt by feeding 12 pullets and not feeding a pen of 12 full sisters—all other rations the same. The pen fed LeGear's powder produced 30% MORE EGGS in their pullet year than the pen not receiving the powder. Also moulted out and was laying before other pen was through moult. J. A. PRESTON



Produce More Honey This Year

We supply bee hives, section boxes, comb foundation, bee smokers, etc. Send for catalog. We are general agents in Michigan for A. I. Root Co. goods. **Berry Baskets and 16 Qt. Crates** Prices quoted on application. State quantity wanted. Can make immediate delivery. Order early this year.

M. H. HUNT & SON,
Box 525, Lansing, Michigan

Egg-o-hatch

applied to eggs during incubation strengthens the chick and weakens the shell. It supplies free oxygen, absorbs carbon dioxide and makes brittle and porous the animal matter of the shell. The biggest thing ever offered to poultrymen. 50 test hatches show average of 96 per cent for Egg-o-hatch eggs and 81 per cent for eggs not treated, right in same machine. Full size package, for 600 eggs, 50 cents at dealers or postpaid. Ask your dealer for Lee Poultry Library (3 books) free or send us 5 cents for mailing direct to you.

GEO. H. LEE CO., 265 Lee Bldg., Omaha, Neb.

For Sale 600 Egg Buckeye Incubator (guaranteed) used one hatch, \$42.00
Mrs. J. M. PEARSON, Milford, Mich.

POULTRY

Ancona's—Eggs for hatching. Best winter layers. Single combs \$1.50 per 15. Rose comb \$2 per 15.
W. E. WEST & SON, R. 1, East Lansing, Mich.

Barred Rocks—EGGS FROM STRAIN with records to 290 eggs a year; \$2 per 15. Delivered by parcel post, prepaid. Circular free.
FRED ASTLING, Constantine, Mich.

Barron English 240 egg strain White Leghorns, heavy winter layers, large size birds. Hatching eggs \$6 per 100. Chicks \$13 per 100. Guarantee satisfaction. Devries Leghorn Farms and Hatchery, Box A, Zeeland, Mich.

Barred Plymouth Rock eggs for hatching from full blood stock prize-winning strain \$1.50 per 13.
J. A. BARNUM, Union City, Mich.

BARRON STRAIN S. C. White Leghorns Bred to Lay Biong bodied vigorous stock. Eggs and Chicks, prices right.
Bruce W. Brown, R. 3, Mayville, Mich.

HOMESTEAD FARMS

A Federation of Interests

DAY-OLD CHICKS

We are now booking orders for Day-Old Chicks and eggs for hatching from our Pure Breed Practical Poultry. Advance orders will be filled exactly at time wanted. It will be better for you to order as early as possible to be sure of delivery.

We can furnish Chicks from the following breeds: Barred and Buff Plymouth Rocks; R. C. Rhode Island Reds; White Wyandottes; Black Orpingtons; S. C. and R. C. Black Minorcas; S. C. and R. C. White Leghorns; S. C. Anconas.

EGGS FOR HATCHING

Eggs for hatching, settings or in quantities for incubators, from the foregoing breeds. Please write for circular and Homestead Farms' plan of a federation of interests.

LAYING HENS AND PULLETS

White Leghorns—S. C. White Leghorn hens and pullets in prime condition for laying, in lots from 6 to 50. Satisfaction guaranteed on these pure bred fowls. Rhode Island Reds—One pen of 15 S. C. Pullets, now laying, and one Cockerel. These are from a heavy laying colony; 100 Hens gave over 40 dozen eggs a week thru the winter. Full description by letter. R. O. Pullets, five only, no cockerel. One only R. O. Black Minorcas Cockerel.

HOMESTEAD FARMS, Bloomingdale, Mich.

Barred and Partridge Rock

Eggs for hatching, wonderful layers, best strains, \$2 per setting of 15. Mrs. M. E. Wright, Ypsilanti, Mich.

Baby Chicks Young's Strain S. C. White Leghorns free range stock, safe arrival guarantee, catalogue free. Knolls Hatchery, R. 3, Holland, Mich.

Buff Leghorn Cockerels, and a few hens, pens.
Dr. WILLIAM A. SMITH, Petersburg, Mich.

Buff Orpingtons—Seventeen years. Best exhibition egg producing strain. Eggs or Baby Chicks, Circular free. WILL SCHADT, Goshen, Indiana.

Chicks, We ship thousands, booking orders now for spring delivery, free booklet.
FREEPORT HATCHERY, Box 12, Freeport, Mich.

Cockerels—From Chicago Coliseum, winning stock. \$3 C & up "Ringlet" & Buff Rocks, both combs Reds, Spanish Orpingtons, Wyandottes. Tysons Poultry Farm, Fenton, Mich.

Choice Chicks April and May heavy breeds and Leghorns \$2 for \$9. Eggs per setting \$1.50; per 108 \$7.50.
Cre-cent Egg Company, Allegan, Mich.

Eggs for Hatching from pure bred White Plymouth Rocks and White Mammoth Peking ducks.
CHAS. KLETZLEN, Bath, Mich.

DAY-OLD CHICKS

of quality guaranteed to 1,500 miles. Eggs for Hatching at low prices. Bar. Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free. GOSHEN POULTRY FARMS, R-19 Goshen, Indiana

DAY OLD CHICKS

250,000 for 1918. \$10 per 100 and up. Purebred. Hatched right. Strong guarantee. 10 leading varieties. Hatching eggs. Big brooder offer. Western Branch, Augusta, Kansas. Free catalog. Stamps appreciated. Hubers Reliable Hatchery, 333 W. Fremont St., Fostoria, O.

Laybitt S. C. W. Leghorns Large, great layers. Pure breeding hens now. Everfresh Egg Farm, Ionia, Mich.

Ferris White Leghorns

A real heavy laying strain, trapezoid 17 years, records from 200 to 264 eggs. Get our special summer prices on yearling hens, breeding males, eggs for hatching, 8-week-old pullets and day old chicks. We ship C. O. D. and guarantee results. Catalog gives prices; describes stock; tells all about our farm and methods; results you can get by breeding this strain. Send for your copy now—it is free.
GEORGE B. FERRIS 994 Union, Grand Rapids, Mich.

Chicks that Live \$15 per 100 S. C. W. Leghorns. Send for catalog. SNOWFLAKE POULTRY FARM, R. 1, Grand Rapids, Mich.

Fowlers Buff Rocks Booking orders now at a \$2 for 15; \$4 for 30; \$5.50 for 50; \$8.00 for 100.
R. B. FOWLER, Hartford, Mich.

John's Big beautiful hen hatched Barred Rocks good layers males & females \$3 to \$5 each. Breeding pens \$12. Sold on approval circulars photos. John Northon, Clara, Mich.

Additional Poultry Ads on Page 379

Heats Your Whole House Comfortably From One Register -

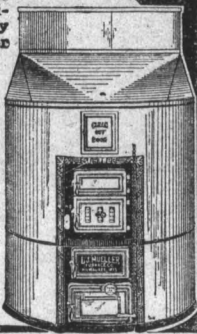
THE Mueller Pipeless Furnace frees you from the disadvantages of stoves—gives you all the comfort and satisfaction of real furnace heat—without having to tear up your walls for pipes or flues. Saves 35% in fuel—burns hard or soft coal, coke or wood.

A real furnace, solid cast iron, with triple jacket, substantial firepot and radiator, triangular duplex grate. Does not heat cellar.

MUELLER PIPELESS FURNACE

You can depend on the Mueller—its efficiency and economy have been proved for you. It is exactly the same construction as the old reliable Mueller line, but without pipes or flues. Easy to install in old or new homes. Guaranteed for five years. Write for interesting free booklet "Heating Your Home" and name of nearest dealer.

L. J. Mueller Furnace Co.
Makers of
Heating Systems of all
kinds since 1857
195 Reed Street
Milwaukee, Wis.



"BLIGHTY" a new shirt with the Military touch and the Double-SERVICE cuffs

REGULAR AND REVERSE FOLD

THE HYNCE CUFF

A soft cuff. Both sides Right sides.

"Blighty" is a stripe pattern on Khaki Ground shirt that shows respect to the "service" yet does not impersonate the enlisted man. A

HALLMARK SHIRT

with Patented Hynce Cuff you can reverse—wears twice as long. Ask for Blighty, the shirt with the Quality Kept Up.

HALL, HARTWELL & CO., Makers, Troy, N. Y.

IRON AGE

Farm, Garden and Orchard Tools. Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means \$5 to \$50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses
No Doubles

Bateman Mfg Co., Box 24B, Grenloch, N. J.



LESS WORK

do away with FOUR HORSES and ONE MAN

We mean just that. You can disc and harrow your field at the same time you plow it by attaching a Kramer Rotary Harrow to your plow. Fits any plow, horse or tractor drawn, sulky, gang or three-bottom. You can't afford to spend the time on the old method.

Write for full description.

Kramer Co., Dept. 62 Morton, Ill.



LEARN AUCTIONEERING at World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught in 5 weeks. Write today for free catalog. **JONES' NAT'L SCHOOL OF AUCTIONEERING.** 28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

Selling Butter by Parcel Post

By L. H. COBB

BUTTER is one of the farm products that can be sold by parcel post to good advantage whenever the weather is comparatively cool, and it is one of the products that I have found the store price and the city consumer's price more than an average distance apart. This is another case of the producers of poor butter getting pay for the merchant's loss from the profit he makes from the really good butter he gets. The merchant can hardly be blamed, for there is no subject on which the average farmer's wife is more touchy than her butter making. I visited one time where the woman was always bragging on her butter and saying that her family could never like butter she bought. They had become so used to the rank flavor of the butter she produced that good butter lacked flavor for them, I suppose, for I could hardly eat hers at all. That is the case with much country butter. The maker imagines it is especially good because her family brag on it and cannot find any other to suit them. Such butter when taken to the store has to be dumped into the shipping tub to go to the renovators, but the merchant cannot afford to tell the producer so, or he will lose her custom, so he must pay full price and balance it up.

The home customer living in the small town is the most convenient patron for the good butter produced, and usually the demand is sufficient, as so many sell cream to the shipping stations. Here is where the parcel post comes in extra handy, and where it is used the least. Just step to the phone and call up a few of your good prospects and arrange to ship them their butter by parcel post, have two or three agree to go to some handy place to get it, then put it up and send in by the rural delivery man when he makes the route. The receiving party will get it the same evening and the others can call for it, and the transaction is completed without your having to go to town. All can leave the money with the one, and you can get it when you go to town, or you can collect from each at stated intervals—any way to suit all parties.

The most convenient package for shipping butter is made up of small oblong cartons that hold one pound wrapped in waxed paper, and a box of two thicknesses of corrugated board large enough to hold as many of these cartons as you can arrange to ship at once. Four is a good size. It is not difficult to get some of the corrugated packing boxes at the stores and make the boxes for yourself. By marking it out you can run the edge of an iron along the line where you want to bend, pressing hard enough to depress the board, and bend the board wherever you please. You can buy a roll of the pasted paper tape for the purpose and bind the corners, or you can make a flour paste that will answer as well, though more trouble. By having this material on hand it takes only a few minutes to make a box to suit the shipment, and you can arrange to get the boxes back so long as they will bear shipping and save making more.

Customers can be secured in the large cities but it is not quite so convenient to handle this business. You will have to require cash with order to be safe, and then the cost of the package will be greater unless you make them yourself. I would make a rule to ship in not less than four-pound consignments, and give preference to six-pound lots, and larger if it could be arranged. If one is so lucky as to have a few friends in the city, quite often they will be willing to form a club of their neighbors and let them come to their house on certain days to get the

butter and pay for it on receipt, they sending the money and receiving all shipments. I have shipped eggs by this plan quite successfully.

EFFECTS OF LOW PRICES.

On prices paid producers for milk depend the extent to which calves are raised for maintaining the future milk supply, and also the movement of labor from dairy farms to cities. Of the many results following low milk prices, the committee gives prominence to these:

"If the price of milk is too low, too few heifer calves are raised and cows may be slaughtered. The immediate effect may not be noticed on the milk supply because the reduction in production may be offset by the smaller amount consumed by calves. A reduction in calves tends to increase the amount of milk available for two years. * * * The shortage or excess of milk does not come immediately following too low or too high prices, but usually comes two or four years later.

"If prices of dairy products are too low and if too few cows are raised in the entire country, or if too many cows are slaughtered, there is no way to correct the error in less than about three or four years.

Heifer Ratio Necessary to Maintain Industry.

"Consideration of all the facts submitted indicates that if one dairy heifer is saved for each four or five cows kept, the industry probably will be maintained, but one heifer for each six cows seems to be too few. * * * The slaughter of dairy cows was above normal during the later winter and early spring months of 1917.

"The best way to stimulate immediate production and the raising of heifers is to encourage the largest possible consumption of milk and other dairy products, and encourage the largest possible export of condensed milk, butter and cheese to the Allies.

"We are looking ahead a year at a time for our wheat supply; we need to look at least three years ahead for our dairy supplies."

From its study of distribution problems, the committee reports that the average life of milk bottles could be greatly increased by conscientious effort on the part of milk consumers. More than fifty per cent of the entire loss of bottles is due to the negligence on the part of the consumers in returning them. This is a considerable waste which adds to the cost of distributing milk. Repeal of superfluous laws regulating the sale of milk is recommended and the committee urges every locality to make new regulations simple, thus reducing all unnecessary costs of milk production and distribution. The report concludes with these recommendations:

1. That increased production of milk be encouraged; (a) as measure of national safety for the present; (b) as a measure of national vitality for the future, the future being bound up in the welfare of children.

2. That consumption of milk should be increased because:

(a) A greater consumption of it in cities will result in a better development of the physical condition of the city population, where consumption is 112 quarts per capita, as compared with 288 on the farm.

(b) Increased consumption will encourage production.

(c) "If the country is to be protected against nutritive disaster, every possible step must be taken to educate the people to a realization that though they may do without meat they should still have milk."—Rose and Brewer.

(d) Skim-milk and buttermilk should

be made available for city consumers.

(e. It is of fundamental importance that the milk supply should be not only maintained at its present status but that more milk should be made available for children.

MUST PREPARE TO RAISE OWN SEEDS.

Gardeners, who soon will be breaking ground for their 1918 crops, should prepare this season, in the opinion of the Department of Horticulture of M. A. C., to raise their own seed.

"The present supply of vegetable seed is the lowest in the history of the country," the department declares. "Never before has the carry-over reserve of the seed companies been so small, or the supply on hand so limited. Also, a report has come within the last few days from the Pacific Coast country, the main vegetable seed section of the United States, telling of a shortage in 1918 crops of radish, spinach, onions, beets, carrots, cabbage, turnips and other garden crops, which have already been cut in half by adverse weather conditions. The season promises to be the worst in the vegetable seed industry, one of California's leading seed firms informs us.

"The seed shortage as a whole, however, is the result of a number of influences among which are an increased demand and decreased importations. Many cargoes of seed now lie on the bottom of the ocean.

"This means that the present supply must be wisely planted and cultivated. The gardener should make sure of his next year's seed supply by the production in his own garden of such seed crops as radishes, lettuce, spinach, onions, melons and even the root crops. Present prices have increased as much as 350 per cent over last year in some cases. Everything possible must be done to forestall the impending vegetable seed shortage for 1919 or many standard varieties will not be obtainable a year hence at any price."

MICHIGAN CROP REPORT.

Wheat.—In answer to the question, "Has wheat during February suffered from any cause?" 219 correspondents in the state answer "Yes" and 197 "No;" in the southern counties 147 answer "Yes" and 64 "No;" in the central counties 64 answer "Yes" and 38 "No;" in the northern counties 8 answer "Yes" and 78 "No," and in the upper peninsula 17 answer "No."

Snow protected wheat in the state and central counties 18 days, in the southern counties 14, in the northern counties 26 and in the upper peninsula 28 days.

The average depth of snow on February 15 in the state was 9.50 inches, in the southern counties 4.23, in the central counties 10.31, in the northern counties 18.37 and in the upper peninsula 22.44 inches. On the 28th of February the average depth of snow in the state was 4.34 inches, in the southern counties 1.01, in the central counties 2.37, in the northern counties 11.16 and in the upper peninsula 19.29 inches.

The total number of bushels of wheat marketed by farmers in February at 80 flouring mills is 67,700 and at 70 elevators and to grain dealers 52,490 or a total of 120,190 bushels.

Of this amount 82,225 bushels were marketed in the southern four tiers of counties, 28,750 in the central counties and 9,215 in the northern counties and upper peninsula.

The estimated total number of bushels of wheat marketed in the seven months, August-February is 6,500,000.

Eighty-five mills, elevators and grain dealers report no wheat purchased from farmers in February.

The average condition of live stock in the state is reported as follows, comparison being made with stock in good, healthy and thrifty condition: Horses and sheep 93; cattle, swine 92.

Grain and seed threshed in Michigan up to and including February 23, 1918, as per returns of threshermen is as follows:

	Acres.	Bushels.	Yield Bu.
Wheat	772,490	13,923,926	18.02
Rye	323,394	4,533,317	14.02
Oats	1,240,159	44,808,061	36.13
Barley	129,031	3,319,702	25.73
B'kwheat	32,491	348,669	10.73
Peas	14,884	154,758	10.40
Beans	410,184	2,805,167	6.84



Rouge Rex No. 442

ROUGE-REX SHOES Wear Like Raw Hide

Rouge-Rex Shoes are made for the farmer. Every pair is guaranteed exactly as represented and will cost less per year than any other work shoes made.

All leather used in Rouge-Rex shoes is treated and tanned in our own tannery. Not a single pair is allowed to leave the factory unless they are absolutely as good as work shoes can be made.

A Variety of Styles to Select From

There are so many different styles that you will have no trouble in finding a Rouge-Rex shoe to exactly meet your requirement.

You, Mr. Farmer, should insist upon getting Rouge-Rex shoes, because they are made from leather that will withstand the hardest kind of wear, regardless of price, you cannot buy better work shoes than these.

Give Rouge-Rex Shoes a Trial

We want you to try Rouge-Rex shoes. Go to one of our dealers, ask him to show you a pair of Rouge-Rex work shoes. Put them on you feet. Notice how well they fit, how comfortable they are. Then examine the full chrome soles, the general style and the way shoes are put together.

If you once buy a pair of Rouge-Rex shoes we know in the future you will always demand shoes with the Rouge-Rex trade mark. It is your guarantee of quality, workmanship and absolute comfort.

You Can't Beat Rouge-Rex Shoe No. 442

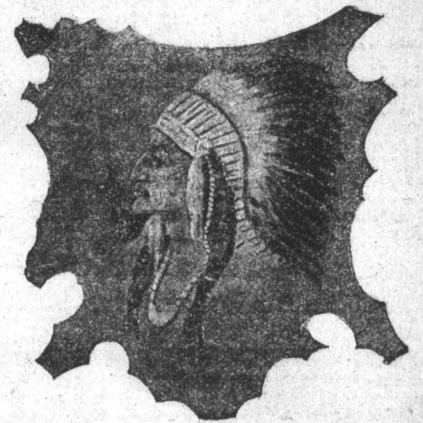
The illustration shows our Rouge-Rex shoe No. 442, Chocolate Wolverine Kip Outing, 1 1/2-inch cuff, full bellows tongue and two full chrome soles. These shoes are light, serviceable and high enough to keep out the dirt. It is a practical shoe for the farmer.

We strongly urge you to give them a trial. We want you to try them out because we know that the more you wear Rouge-Rex shoes, the greater will be your satisfaction. Regardless of price, you cannot get better work shoes than those which have the Rouge-Rex trade mark.

Rouge-Rex Shoes are for sale by first class dealers everywhere. If you do not know the Rouge-Rex dealer in your vicinity, write us for his name.

HIRTH-KRAUSE COMPANY,

Hide to Shoe
Tanners and Manufacturers
Grand Rapids, Michigan



POULTRY

IMPROVE YOUR POULTRY

My Young's strain bred-to-day S. O. White Leghorns are great money makers. 100,000 baby chicks for 1918 delivery at \$13 and up per 100. Satisfaction guaranteed. Write for free catalogue.

W. VAN APPELDORN, R. 7, Holland, Mich.

Pine Crest White Orpingtons, hens and pullets \$3.00 each, eggs special price \$5 per 15, utility \$12 per 100. MRS. WILLIS HOUGH, PINE CREST FARM, Royal Oak, Mich.

RHODE ISLAND REDS and plymouth Rocks Males R 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 10 lbs. eggs 15 for \$1; 100 \$5; 120 \$6. Mammoth Bronze Tom Turkeys 8 to 38 lbs. according to age \$9 to \$25, 10 eggs \$3. J. Morris & J. Barsan, Vassar, Mich.

R. I. REDS, both combs. Chicks & eggs. Most popular strain in Michigan. Write for catalogue. INTERLAKES FARM, Box 39, Lawrence, Mich.

R. I. Reds and R. I. Whites. Both combs. Eggs for sale, also a few good cockerels. Good stock, prices reasonable. O. E. Hawley, R. 3, Ludington, Mich.

Rhode Island Reds, R. O. Famous for quality eggs for hatching, prices reasonable. BURT Sisson, Imlay City, Mich.

S. C. Brown Leghorns, Heavy layers. Eggs 15-\$1.35, 30-\$2.50, 45-\$3.50, 100-\$7, prepaid by mail. FLOYD ROBERTSON, R. 1, Lexington, Indiana

SILVER Golden and White Wyandottes. A few good Golden and White cockerels, to spare at \$3. Eggs 15, \$2.50, 30, \$5.00. C. W. Browning, R. 2, Portland, Mich.

Single Comb Black Minorca cockerels, sired by a 10lb. cock bird. A few more P. C. fall pigs. R. W. MILLS, Saline, Mich.

S. C. eggs (Farris strain) good free range stock prices reasonable. Herbert Hammond, Williamston, Mich.

WHITE Wyandottes. I have a fine lot of April and May hatching cockerels for \$3.00 and \$5.00 each. DAVID RAY, 709 Norris St., Ypsilanti, Michigan.

White Wyandotte cockerels, good size, color. \$3.50; 3 for \$10. Reg. Swedish Select Oats free from snout \$1.50 per bu. in 10 bu. lots recleaned and bags free. VAN O. FARM, R. 1, Box 124, Hartford, Mich.

White China Goose eggs 25 cents each. R. C. Br. Leghorn eggs \$1.50 per 15, Pekin Duck \$1.50 for 11. Best of stock. Mrs. OLAUDIA BETTS, Hillsdale, Mich.

WHITE Holland Turkeys a limited number for sale. Silver Spangled Hamburg cockerels Hamburgs are the greatest layers on earth, get acquainted with this wonderful breed. Riverview Farm, Vassar, Mich.

M. B. Turkeys, Toulouse Geese and S. C. W. Leghorn cockerels. Also Berkshire, both sex. Stamps appreciated. Chase Stock Farm, R. 1, Mariette, Mich.

HOGS

GREY TOWER FARM

Now offers for sale a few choice Holstein bull calves, from high testing dams, with good A. R. O. records, at farmers' prices, write us about them and our

Durocs & Berkshires

M. D. KITCHEN Mgr., Grass Lake, Mich.

Duroc Jerseys--boars of the large heavy boned type, Prize winning stock, prices reasonable, type and breeding considered, also gilts bred to Junior Champion boar for spring farrow. F. J. Drott, R. 1, Monroe, Mich.

Large boned Duroc Jersey, September pigs either sex ready to ship. Breeding and prices on request. J. D. CRANE & SON, Plainwell, Mich.

DUROC JERSEYS

E. D. HEYDENBERG, Hastings, Mich.

Choice Duroc Jersey Gilts For Sale. CAREY U. EDMONDS, Hastings, Mich.

Duroc fall boars sired by Crimson Critic T. Satisfaction and Brookwater Principal, priced right. Bred sows all sold. M. C. TAYLOR, Milan, Mich.

Durocs Can spare two or three bred daughters of Joe Orion 2nd the \$5000 boar. A. FLEMING, Lake, Mich.

Duroc Jerseys Why don't you order a pig and raise an extra good boar or gilts for yourself. E. E. CALKINS, Ann Arbor, Mich.

BRED GILTS

O. I. C. To Wm. B. No. 47049, Longfellow No. 19575 sired of 1st prize young herd at Iowa State Fair. Fall pigs and breeding boars. J. CARL JEWETT, Mason, Mich.

Chester Gilts bred for March farrow early fall pigs both sexes from best blood lines. F. W. ALEXANDER, Vassar, Mich.

Raise Chester Whites Like This the original big producers

I HAVE started thousands of breeders on the road to success. I can help you. I want to place one hog from my great herd in every community where I am not already represented by these fine early developers--ready for market at six months old. Write for my plan--More Money from Hogs. G. S. BENJAMIN, R. F. D. 10, Portland, Michigan

Big Type O. I. C's. Stock of all ages for sale. We showed at four state fairs and won more champions and Grand Champions than all the other breeders together double. We were Premier Breeder and Exhibitor at every fair we showed. We Bred the best. We sell the best. We Guarantee them to be the best. Write your wants. Get our Catalogue. We ship on approval. CRANDELL and SON, Cass City, Mich.

O. I. C. & Chester White Swine. Strictly Big Type with quality. Bred sows & gilts are all sold, two boars fit for service good ones. Also have a few fall pigs left, either sex. I will ship O. I. C. D. NEWMAN'S STOCK FARM, R. 1, Mariette, Mich.

O. I. C's 2 choice May boars & Sept. & Oct. pigs sired by First Premium boar Mich. State Fair 1917. Clover Leaf Stock Farm, R. 1, Monroe, Mich.

O. I. C's big type, one yearling sow and gilts to farrow in Apr. and May. Aug. and Sept. boar G. P. ANDREWS, Dansville, Michigan.

O. I. C's all sold except some fall gilts. Order your spring pigs now. O. J. THOMPSON, Rockford, Mich.

O. I. C. Nothing for sale but our tried sow and fall pigs. F. C. BURGESS, Mason, Mich.

O. I. C's. Last spring gilts bred for next spring farrow also last fall pigs either sex and not akin. Good growthy stock 1/4 mile west of Depot, Citizens phone 124. Otto B. Schulze, Nashville, Mich.

O. I. C. Have a few gilts bred for June farrow. Also 1 registered Shorthorn bull 6 months old. H. W. MANN, Dansville, Mich.

Large Type P. C. no public sale this year: 50 sows and 1 gilts all queens of the breed go at private treaty. W. J. HAGELSHAW, Augusta, Mich.

Large Strain P. C. Gilts bred to Smooth Jumbo large-boned 2 yr. old in state, & a grandson of Gutshalls Smooth Big Bone for April & May farrow. H. O. Swartz, Schoolcraft, Mich.

Big Type P. C. Big boned fellows from Iowa's greatest herds. Special prices on spring boars. E. J. MATHEWSON, Burr Oak, Mich.

Big Type P. C. bred for March & April farrow sired by Peter's Jumbo & Grand superba and 2 or 3 yearling sows at bargain prices. C. E. Garnant, Eaton Rapids, Mich.

Large Type P. C. Bred gilts and boars all sold nothing to offer at present. W. E. LIVINGSTON, Parma, Mich.

Leonards' Big boned Poland Chinas, sows and gilts bred for Apr. farrow. Fall pigs. Shipped C. O. D. Call or write. E. R. Leonard, R. 3, St. Louis, Mich.

P. C. Sows For Sale. Bred for April farrow, prices reasonable. A. A. WOOD & SON, Saline, Mich.

Spotted Poland Chinas Heavy boned stock. Bred gilts and pigs not akin. Best of blood. L. O. CLAPP, R. 1, Adrian, Mich.

Large Type P. C. fall gilts, size 800 lb. yearling to be bred to 1000 lb. 2 year old for July & Aug. 2 extra good fall boars. WM. J. CLARKE, R. 7, Mason, Mich.

Big Type Poland Chinas: Sows bred for April and May farrow and fall pigs. L. W. BARNES & SON, Byron, Mich.

BIG TYPE POLAND CHINAS. Booking orders for spring pigs. G. W. HOLTON, R. 11, Kalamazoo, Mich.

Large Yorkshire Gilts Red Poll Cattle. E. S. CARR, Homer, Mich.

Yorkshire Gilts Bred for spring farrowing. Bacon is high in price. Yorkshires make Waterman & Packard Road, Ann Arbor, Mich.

A registered Hampshire boar one year old very fine \$60. Four pure bred not registered Hampshire 5 months old \$25 each. A registered Jersey bull 5 months old \$40. Very fine. Pure Black Langshang \$2.50 each; my flock 21 for \$40.00. L. R. CHPESEMAN, Waterford, Mich.

Hampshire boars at a bargain, bred gilts now ready to ship. JOHN W. SNYDER, R. 4, St. Johns, Mich.

HORSES

LOESER BROS.

Belgian and Percheron Stallions for sale that will pass the Michigan Stallion Inspection. Have a few mares of both breeds. Shorthorn Cattle, we offer a choice lot of bulls and females. Write us.

LIGONIER INDIANA.

REGISTERED PERCHERON Mares and Stallions priced to sell. Inspection invited. L. C. HUNT, EATON RAPIDS, MICH.

PERCHERON DISPERSAL

The entire herd of the late A. A. Palmer will be closed out; 25 pure bred percheron mares \$200 to \$400 except two; also young stallions

PALMER BROS., Belding Mich.

For sale or Exchange for cattle, Registered Holster Percheron mares, coming 4-6-7 years old, weighing from 1800 to 2500 lbs. In foal to Imported Percheron weighing 2160. These mares are good workers, kind and gentle, come look over. J. C. BUTLER, Portland, Michigan.

2 Gray Percheron Stallions for sale cheap; one 2240 lbs. one 2000; sound and sure breeders; colts to show; winners at Iowa State Fair and Ill. State fair; herd headers. BEARD BROS., Mendon, Mich.

Percherons, Holsteins, Angus, Shropshires, Durocs DORR D. BUELL, Elmira, Michigan.

For Sale Three Percheron Stallions and three Percheron mares at farmers' prices. E. J. ALDRICH, Tekonsha, Mich. Bell Phone.

Percheron Stallions and mares of reasonable prices; inspection invited. F. L. KING & SON, Charlotte, Mich.

FOR SALE Registered Percheron Stallion seven years old. ORLA JACOBS, Gregory, Mich.

Notice Being in draft will sell or exchange for cattle or sheep 3 reg. Perch. mares. J. M. HICKS & SONS, R. 2, Williamston, Mich.

For Sale registered Black Percheron Stallion. Price right address. F. CHRISCIANSKE, R. 3, Box 67, Imlay City, Mich.

Belgian Stallions. Priced to sell. State Licensed. Send for photos. CHAS. M. SEELEY, Three Rivers, Mich.

FOR Sale Stallion. I have a Standard Bred coach Stallion; sure foal getter, weigh 1400, all letters answered. John Blair, Columbus Grove, Ohio.

Two Large young Jennets cheap, and some Shetland Ponies and several good fox hounds. W. E. LECKY, Holmesville, Ohio

SHEEP

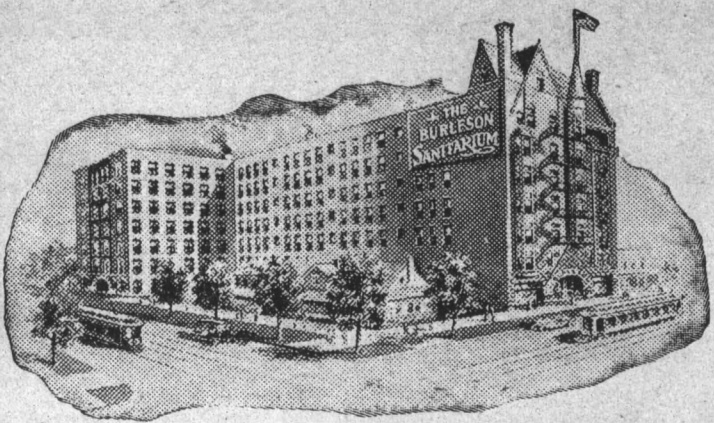
KOPE-KON FARMS. Coldwater, Mich.

Hampshires & Shropshires. It's a wise man who orders his ram for August delivery now.

About July 1 we will offer for sale choice Shropshire Rams. ARMSTRONG BROS., R. 3, Fowlerville, Mich.

Always mention the Michigan Farmer when writing to advertisers.

Piles Cured Without the Knife



The Largest Institution In the World for the Treatment of Piles, Fistula and all Other Diseases of the Rectum (Except Cancer)

WE CURE PILES, FISTULA and all other DISEASES of the RECTUM (except cancer) by an original PAINLESS DISSOLVENT METHOD of our own WITHOUT CHLOROFORM OR KNIFE and with NO DANGER WHATSOEVER TO THE PATIENT. Our treatment has been so successful that we have built up the LARGEST PRACTICE IN THE WORLD in this line. Our treatment is NO EXPERIMENT but is the MOST SUCCESSFUL METHOD EVER DISCOVERED FOR THE TREATMENT OF DISEASES OF THE RECTUM. We have cured many cases where the knife failed and many desperate cases that had been given up to die. WE GUARANTEE A CURE IN EVERY CASE WE ACCEPT OR MAKE NO CHARGE FOR OUR SERVICES. We have cured thousands and thousands from all parts of the United States and Canada. We are receiving letters every day from the grateful people whom we have cured telling us how thankful they are for the wonderful relief. We have printed a book explaining our treatment and containing several hundred of these letters to show what those who have been cured by us think of our treatment. We would like to have you write us for this book as we know it will interest you and may be the means of RELIEVING YOUR AFFLICTION also. You may find the names of many of your friends in this book.

We are not extensive advertisers as we depend almost wholly upon the gratitude of the thousands whom we have cured for our advertising. You may never see our ad again so you better write for our book today before you lose our address.

Drs. Burleson & Burleson

804 The Burleson Bldg.

Grand Rapids, Michigan

The Farmers of Michigan Lose Annually

More Than \$2,500,000.00 Worth of Live Stock

Horses, Cattle, Sheep and Hogs

FROM ACCIDENT AND DISEASE

The animals are destroyed and their cash value lost not only to the farmer but to the community, the State. This amazing sum of money can be saved to the farmers and the State if they (the farmers) will but avail themselves of

The Michigan Live Stock Insurance Company

organized expressly for the purpose of indemnifying owners of live stock against death from any cause. We want agents to carry this great message to every farmer.

Colon C. Lillie, Pres. and Sup. of Agts.,
319 Widdicombe Bldg., Grand Rapids, Mich.

Harmon J. Wells, Sec. and Gen. Mgr.
Graebner Bldg., Saginaw, W. S., Mich.

BREEDERS' DIRECTORY.

Change of Copy or Cancellations must reach us
Ten Days before date of publication.

We Offer a Few Special Bargains
In S. C. White Leghorn cockerels, Rambouillet rams, Hampshire pigs (either sex) and Holstein bulls. A good chance for a small investment to reap the benefit of a large expenditure of capital and years of expert breeding.

Flanders Farm, Orchard Lake, Mich.

CATTLE.

WOODCOTE ANGUS

Trojan-Erics and Blackbirds only Breeders of the dam and former owners of the sire (our herd bull) of the Grand Champion Bull at the International Chicago for 1917.
WOODCOTE STOCK FARM, Ionia, Mich.

Cloverly Angus Good quality bulls of serviceable age and younger. Inspection invited.
Geo. Hathaway and Son, Ovid, Mich.

GUERNSEYS must reduce herd, so offer a few choice females of Glenwood breeding also bulls, all stock of A. R. breeding, herd tuberculosis tested.
T. V. HICKS, Battle Creek, Mich.

Registered Guernseys

A few choice bull calves at prices you can afford to pay.
J. M. WILLIAMS, North Adams, Mich.

Guernseys For Sale, four young registered cows. Tuberculin tested.
Geo. N. Crawford, Holton, Mich.

Guernseys 45 Registered head, all th. tested. Nora's May King, son of Imp. May Rose King, heads our herd, 19 of his half sisters sold averaging \$1950 each. His bull calves are booked ahead at reasonable prices.
Avondale Stock Farm, Wayne, Mich.

GUERNSEYS—REGISTERED
Containing blood of world champions.
HICKS' GUERNSEY FARM, Saginaw, W. S., Mich.

For Sale Registered Guernsey bull calves May Rose breeding.
JOHN EBELE, R. 2, Holland, Mich.

For Sale Guernsey bull calves from advanced registered dams ranging in age from 3 to 8 months.
L. J. BYERS, Coldwater, Mich.

CLUNY STOCK FARM

100--REGISTERED HOLSTEINS--100
When you need a herd sire remember that we have one of the best herds in Michigan, kept under strict sanitary conditions. Every individual over 6 mos. old regularly tuberculin tested. We have size, quality, and production records backed by the best strains of breeding.

Write us your wants.
R. BRUCE McPHERSON, Howell, Mich.

A Good Note accepted in payment of finely bred registered Holstein bull calves. Quality of the best, and at prices within reach of all. Write.
GEO. D. CLARKE, Vassar, Mich.

Parham's Pedigree Stock Farm offers Reg. Holstein cattle, Chester White Swine, extra bargains in calves and fall pigs. Bulls half price.
R. B. PARHAM, Bronson, Mich.

A Few Fine Bulls For Sale

Bigelows Holstein Farms, Breedsville, Mich.

I Always Have Holsteins To Sell

If wanting Registered cattle write me your wants before placing your order elsewhere.

L. E. CONNELL, Fayette, Ohio

FOR Sale One registered Holstein bull calf. Sire's twenty nearest dams have 7 da. records av. 25.53 lb. butter. Dam to be tested. A finely marked, growthy individual. Long View Farm, R. 3, Box 10 A, Rochester, Mich.

Holstein-Friesian Cattle

A. R. O. herd, tuberculin tested annually. A few choice bull calves for sale.
O. L. BRODY, Owner, Port Huron, Mich.
Chas. Peters, Herdsman, Three Rivers, Mich.

3--HOLSTEIN BULLS--3

Ready for service at Long Beach Farm, Augusta, Mich.

For Sale Registered Holstein bulls ready for service and bull calves from 30 lb. sire and A. R. O. dams with records up to 25 lbs.
Wm. GRIFFIN, R. 5, Howell, Mich.

OAK Leaf Farm. Herd sire Lenawee Pontiac Calamity King offer Registered Holstein bull calves from A. R. O. cows and the above sire whose dam holds the milk and butter record in the state of Ind. 7 days milk 795.3, butter 32.51—315 days milk 23782.3, butter 926.775.
E. H. GEARHART & SON, R. 4, Marcellus, Mich.

Grange.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

THE LECTURER'S HOUR.

(Continued from last week.)

But while the lecturer is waiting for a conference so planned and so advertised, permit us to offer a few suggestions. First, study the State Lecturer's Bulletin. Read everything she says about your work. You may not be able to use all the matter suggested by her; indeed, she does not expect you to do so unless you are able, but you will get new ideas, and new and more definite plans for your own work will come because of your reading her thoughts so well expressed.

Now, after you have read and endeavored to grasp and use, the whole matter is going to turn out like this. It is you and your Grange for it, Worthy Lecturer. You will be worth much more to your Grange because of what you have read and thought and planned. Indeed, if you did not read and think and plan, you would not be worth much to any Grange as a lecturer. Yes, I know that many who hold this office do not read nor think much about their work, and because they do not, they have few plans, but they are not worth much. You would not enjoy their programs if you were present.

Worthy Lecturer, there are conditions in your community that are not quite like those in any other. No State Lecturer can make a program that will fully meet the conditions or needs in every neighborhood. Make no mistake. We should read all she has to say, for it is good, often very good.

But the all-important question is, "What part of this program will best serve our Grange?" We must answer this question and if some other subject will better suffice, then we should choose that. By all means, we should be sure that we have a program prepared for each meeting unless something unusual prevents its use, and we should be quite as sure that that program meets the needs of our community.

One reason for the indifference regarding Grange programs is that the Grange gets into a rut. We cannot keep up the interest by trying to use the same old stuff that we were talking about twenty years ago. Some of it will never wear out, but I am sure I can prove by more than one who reads this, that a part of it has worn threadbare. What we most need is the introduction of live questions full of current interest.

Perhaps I should have said that we need some questions of current import, for I realize as well as anyone, that there are great general subjects old and still ever new, that we ought to study. But the study of these will be far more enjoyable if the programs are varied by introduction of live matter absolutely up to date.

(To be continued.)

The cost of the present struggle, in treasure and in blood, represents the most frightful price humanity has ever paid to secure an ideal. Thus in the midst of the darkest hour in humanity's history, we catch a glimpse of the dawning of a new day, even the triumph of the very peace towards which Grange energies and Grange hopes have unceasingly been directed, and to whose complete attainment by the only possible means now available, we here and now highly resolve to rededicate all that we have and all that we are. Thus shall real and lasting world's peace be attained and the opportunities of freedom and liberty be guaranteed to every people.—Oliver Wilson, Master National Grange.

Farmers' Clubs

CLUB DISCUSSIONS.

Hold Interesting Meeting.—The Conway and Handy Union Farmers' Club held a very enjoyable meeting at the home of Mr. and Mrs. Edward House, February 22. The meeting was called to order by the president and was opened by singing "Beautiful Flag of Liberty." Prayer was offered by the Chaplain Adams. The topic, "What are the most important problems before the farmers at the present time?" was presented by Mr. James Wilkinson. He believes that the greatest problem is the scarcity and the demand for food. He read a very appropriate poem, showing our duty as citizens to the many soldiers in the trenches in the matter of food. The lack of help and good seed are great problems. As a result of a poor season, and consequently poor feed, we have a great lack in motive power also. The topic was discussed by Mr. A. B. Grant and he said in former years farmers thought of winter as their holiday, but on account of the fuel situation and the demand upon farmers for wood, this spring will find the farmer physically fit through exercise. If the farmer had awakened a few years ago to the problem of keeping the boys and girls on the farms, the problem of farm help would have solved itself. No amusement or recreation on the farm is the main cause of boys leaving the farm. Weekly amusement should be provided, affording the boy something to look forward to besides going to town on Saturday night and long hours of work. The town is lacking as well as country, in the matter of proper wholesome amusement. The topic was discussed by George Stowe, George Newman, O. E. Carr and others, some expressing their belief that the farm is the best place in the world. A vocal solo entitled, "Hats Off to the Flag," was rendered by Mrs. M. Wilkinson. The next topic, "Should we have a tobaccoless day, and what would be gained by it?" was opened by Mrs. J. Snyder, who read a paper prepared by Mrs. Clay Gordon. She believes that free distribution of tobacco in any form among our soldiers is shameful and unnecessary. Let those who have been in the habit of using tobacco have it, as it is a poor time to deprive them of it, but why attempt to force the habit upon those who have never felt the need of its use or had any desire for the stuff? We are asked for money for Red Cross work, for Y. M. C. A. work, for relief work among the homeless and helpless. We are asked through the columns of our daily paper for money to help swell a tobacco fund for our boys in the camps—more especially for the boys in France. Our government pays each man a certain sum each month for his own personal use. Let him buy his own tobacco out of his own fund. There will not be a tobaccoless day as long as the men use tobacco to a larger extent than the women—if the women used it they would be asked to conserve by substitution. Men, as a rule, do not care to deny themselves. The topic was discussed by Mr. O. E. Carr, and he said if he could have his way he would have nothing but tobaccoless days. He stated some statistics concerning its use. The money spent in one year for tobacco would build four Panama Canals. More money is spent in one year for tobacco than is spent for education, or for the government or the army in time of peace. We should have a tobaccoless day to show young men that a person can get along one day a week without tobacco. We should not encourage the use of anything which is contrary to the teaching of parents and teachers. Mr. Frank Curtis said he had no use for it. We should break off the use of tobacco among the boys. If the money spent on tobacco could be spent for the soldier boys we should have all tobaccoless days. Mrs. George Stowe then favored the Club with a recitation. The Club then enjoyed two vocal solos by Rev. F. C. Watters. The March meeting will be an open meeting held at the home of Mr. and Mrs. Frank Nichols for pot-luck dinner. A charge of twenty-five cents will be made for the benefit of the Red Cross society. A motion was made and seconded that the rules of the Club should be printed and handed to each new member of the Club. Mr. and Mrs. Fred Snell were voted in as members of the Club to fill vacancy. The following members act as a committee for the April program: Mrs. and Mrs. Ora Holmes, Mr. and Mrs. E. E. House, and Mr. and Mrs. J. B. Allen.

Veterinary.

CONDUCTED BY W. C. FAIR, V. S.

Chronic Cough.—Following an attack of scours one of my cows commenced to cough last fall and is gradually growing worse. Had my herd tested for tuberculosis but none of them reacted. Have been treated by local Vet., also given commercial remedies without result. E. D. Y., Linden, Mich.—Give her 1 oz. doses of Glyco-Heroin (Smith) three times a day.

Sore Eyes—Catarrh of Bowels.—My lambs are troubled with sore eyes, discharge water and mucus from them, they also purge until they die. I lost three last week. J. C. C., Reading, Mich.—Are you sure that the lambs have had sufficient shelter and enough nourishing food during the cold weather? Keep them dry and feed them plenty of ground oats and clover; this will do them more good than drugs. Give each lamb 10 drops of tincture of cinchona and 15 drops tincture gentian three times a day. Dissolve 40 grs. of boric acid in ¼ pt. of clean boiled water and put a few drops into the eye twice a day. If they are weak, give them hot black coffee three times a day.

Indigestion.—About two months ago I bought a six-year-old horse. He was and is now, in fairly good flesh, is fed three quarts of oats twice daily, also has plenty of clover hay. When I got him he had some pimples on upper part of body, but those have nearly all disappeared. He frequently sweats in stable; he is not working. M. A. G., Millington, Mich.—He should be exercised daily, his stable kept clean and be well supplied with fresh air. Give him ½ dr. fluid extract nux vomica, 1 oz. tincture gentian and 1 oz. tincture cinchona at a dose in either feed or drinking water three times a day.

Heart Disease—Thin Cow.—We recently lost a calf, which started into winter quarters rather thin, but was seemingly healthy. It steadily lost in flesh, bowels became costive; I gave it warm water, milk and calf meal. I also gave it two tablespoonfuls of Glauber's salt, which brought on the scours, and as calf got so weak I killed it. Found heart sack filled with a large quantity of fluid. Have Jersey cow due to freshen in a month, which is very thin and weak. I believe she needs a good tonic. G. W. G., Rapid City, Mich.—Your calf died of dropsy of the heart and could not have been saved. Give your other cow ½ dr. of sulphate iron, 1 oz. ground gentian, 1 oz. baking soda in feed twice a day. Increase her grain ration.

Cow Didn't Clean Properly.—One of my cows calved one week ago, but did not clean properly, now she has an offensive smelling discharge from vagina. She frequently strains as though in pain. A. F., Glennie, Mich.—Give her a teaspoonful of boric acid in feed or drinking water three times a day. Dissolve 1 dr. of permanganate potash in one gallon of clean water which has previously been boiled, and wash out vagina daily. You will find a fountain syringe the most suitable instrument to apply this solution, or else use half-inch rubber tubing and tin funnel. She should not be bred while this vaginal discharge is going on.

Forage Poisoning.—I have eleven yearling calves being wintered in box stall in basement of barn and as fast as one dies another is taken sick, and it dies. I have lost three, and three more are now sick and they will doubtless die. Our local Vet. has been treating them. They eat and drink fairly well, are weak, requiring someone to steady them when walking. They have had no outdoor air and exercise all winter. What causes this ailment and how can they be cured? P. R., Lowell, Mich.—You do not give sufficient symptoms to aid me in making a correct diagnosis; however, I believe either their food or water is the cause. True, it may be for want of fresh air and exercise. Your Vet. should look into this matter closely, if so he can surely ascertain what causes their death.

Rheumatism.—I have 12 pigs which were farrowed last September. They had the run of a large orchard. When cold weather set in I placed them on the ground floor in warm pen, but they soon began to cripple and six of them died. I forgot to say another litter one month younger is now fast going the same way. I feed beans, middlings and some soft corn. R. B., Marine City, Mich.—Make a complete change of feed and give them better care. Give each pig two grains of sodium salicylate soda at a dose two or three times a day. Keep them in a dry warm place.

WELLMAN'S QUALITEED FEEDS

RESULTS COUNT!
ASK THE MAN WHO
FEEDS THEM!

He will tell you if you
want the best for your cows,
horses, hogs, sheep and poultry

SAY

"QUALITEED"

To Your Dealer.
THAT'S ALL!

E. L. WELLMAN
Grand Rapids, Michigan

Jerseys and Duroc Jerseys

The most important thing in buying a Jersey bull is to get one backed up by generations of high producers. Brookwater offers to sell a few choice bull calves of this kind. Our herd of Durocs has won more prizes at the State Fairs this year than any other.

Boar Pigs and Yearlings For Sale.

H. W. MUMFORD,
OWNER

BROOKWATER FARM

G. F. FOSTER
MANAGER

Ann Arbor, Mich., R. 7.

CATTLE

You Can Make More Money

With cows if you have the large yielding, profitable **HOLSTEINS**

Others are doing it. Their enormous yields of milk and butterfat make them extremely profitable. Dairy men throughout the whole U. S. are getting rid of their scrubs and purchasing purebred Holsteins.

Purebred Holsteins have been definitely proven the most profitable breed.

WRITE FOR FREE INFORMATION
No obligation—we have nothing we want to sell you.

THE HOLSTEIN-FRIESIAN
ASSOCIATION OF AMERICA
Box 164, Brattleboro, Vt.

"Top-Notch" HOLSTEINS

The young bulls we have for sale are backed up by many generations of large producers. Buy one of these bulls, and give your herd a "push". Full descriptions, prices, etc. on request.
McPherson Farms Co., Howell, Mich.

The Pontiac Herd

"Where the Champions come from"

Offer Bull Calves sired by sons of Pontiac Koradyke, Hengerveld Dekol, Pontiac Dutchland, or Admiral Walker Pietertje.

Do you want a Pontiac in your herd?
Pontiac State Hospital, Pontiac, Mich.

Holstein bull, nearly ready for service, large straight deep-bodied, handsomely marked ¾ white. His six nearest dams have A. R. O. records that average butter 7 days 24.13 milk 634 lbs. W. B. Reader, Howell, Mich.

HOLSTEINS of quality. Bull calves from dams with records high as 31 lbs. in 7 days. Also collier puppies. E. A. HARDY, Rochester, Mich.

\$225 takes your choice of heifers of a 30 lb bull due in May to a 23 lb. son of Johanna Korn, D. K. Terms if wanted. M. L. McLAULIN, Redford, Michigan.

HOLSTEIN bull calves, eligible to registration, without papers, \$25 at 10 days of age, registered, \$50 to \$75. Dewey C. Pierson, Hadley, Mich.

Registered Holstein bull calf, born Sept. 1917, dam daughter of 24 lb. cow, write for pedigree and price. F. O. B. your station. E. E. STURGIS, B. 3, St. Johns, Mich.

Holstein calves, 25 heifers, & 2 bulls 15-16ths pure, 5 weeks old, beautifully marked, \$25 each, crated for shipment anywhere. Buy only the best. EDGEWOOD FARMS, Whitewater, Wis.

Parkside Holstein bulls, 8 and 16 mo. Both sired by noted bull, 37 relatives are 30 lb. cows. Priced to sell. J. E. TIRRELL & SON, Charlotte, Mich.

A FEW choice Holstein females for sale. ROSELEA STOCK FARM, S. M. YERKES, Howell, Mich.

Herefords Bob Fairfax 494027 at head of herd. Stock for sale. Both sexes either polled or horned. EARL O. McCARTY, Sec'y Mich. H. B. Ass'n, Bad Axe, Mich.

HEREFORDS Two yearling bulls, registered, well developed, ready for service, prize winning ancestry. E. J. Taylor, Fremont, Mich.

HEREFORDS

10 bull calves for sale, Perfection Fairfax and Prince Donald breeding.

ALLEN BROS.,
PAW PAW, MICH.

Lillie Farmstead Jersey Cattle, 3 bulls, ready for service, out of R. of M. dams, 10 heifers bred to freshen next fall. Colon C. Lillie, Coopersville, Mich.

Jersey Bulls for Sale from high-producing dams, with testing Asso. records, also on semi-official test. C. B. Wehner, R. 6, Allegan, Mich.

ONE 11 mo. old solid colored gr. son of Royal Majesty whose dam as a 3 yr. produced 406.24 lbs. of butter 1 yr. First check \$50.00 gets him, registered, transferred and delivered any point in Mich. FRED BRENNAN Sec., Capac, Mich.

Choice Bulls ready for service. Also heifers for sale. Strong in the Blood of Royal Majesty. Come and see them or write for particulars. THE WILDWOOD HERD, Alvin Balden, Capac, Mich., Phone 148-5.

MAPLE Lane R. of M. Jersey Herd has for sale R. of M. cows, daughters of R. of M. cows, bull calves, heifer calves and bulls. All from 500-600 lb. dams. RAVIN FOX, Allegan, Mich.

JERSEY bull and bull calves for sale from R. of M. cows, also heifers and cows of all ages. C. B. WEHNER, R. 6, Allegan, Mich.

FOR SALE Registered Jersey bull calves. SMITH and PARKER, R. 4, Howell, Mich.

Shorthorn Cattle of both Sex for Sale W. W. KNAPP, Howell, Michigan.

Shorthorns—Dairy or beef bred. Breeding stock all ages for sale at farmers prices. C. W. Oram, Secy. Cent. Mich. Shorthorn Breeders' Assn., McBride, Mich.

BIDWELL SHORTHORNS For Beef and Milk.

5 Bulls ready for service, 15 months to 2 years, for sale; also good Scotch-topped cows and heifers. Modern sanitary equipment. One hour from Toledo, Ohio. N. Y. C. R'y. Visitors Welcome. Write us.

BIDWELL STOCK FARM Box B, Tecumseh, Michigan.

Richland Farm

Shorthorns.

IMP. Lorne in Service. Grand Champion Bull of Mich. Special offer on 14 head of Shorthorns. Cows with calves at foot, heifers two years old and heifer one year old. Also a number of bull calves. We invite correspondence and inspection.

O. H. PRESCOTT & SONS, Farms at Prescott, Mich. Office at Tawas, City, Mich.

Francisco Farm Shorthorns

We maintain one of Michigan's good herds of Scotch and Scotch Topped cattle. They are well bred, properly handled and price reasonable. Come and see; we like to show them. P. P. POPE, Mt. Pleasant, Mich.

Fair Lawns Shorthorns

Yearling bulls by Canada's best sire: Missie Augusta 605778 and Imp. Newton Frier 523120. LAURENCE P. OTTO, Charlotte, Mich.

Shorthorns for sale, 5 bulls Scotch top 10 to 14 mos., 3 roan, 1 white, 1 red, price \$150. to \$250. 1 son of Maxwellton Sultan, 19 mos. \$350. C. Carlson, Leroy, Mich.

Bates Shorthorns the original milk strain young bulls 8 mos. old for sale. Price \$150 to \$200. J. B. HUMMEL, Mason, Mich.

Shorthorns—Two bulls, 15 and 16 mo. By a grandson of Cyranus. COLLAR BROS., R. 2, Conklin, Mich.

SHORTHORNS. Butterfly Sultan, half brother to International Sr. Champion, in service. For good bulls, cows, and heifers. W. B. McQuillan, Howell, Mich.

Shorthorns Maxwilton Monarch 2nd. 387322 half service. JOHN SCHMIDT, R. 5, Reed City, Mich.

Shorthorns—Four fine young bulls ready for service. Grandsons of Imp. Villager. Also bred heifer & cows heavy milking strain. Farmers prices. Free Catalogue. HOBBITON FARMS, Hart, Mich.

SON of Harthorth Welfare heads our herd of milking Shorthorns comprising Chiffley of Clay bred cows, young bulls ready for sale and service, write us Liddel Bros., R. 2, Clinton, Mich., Macon Phone.

Grand Traverse Shorthorn Asso. Reg. stock for sale. M. E. DUCKLES, Sec., Traverse City, Mich.

Milking Shorthorns and Polled Durhams, 20 head cows and heifers and young bulls, Sultans Duchess and Sittytou Duchess included. R. B. Halsted, R. 1, Orion, Mich.

1867-1918 Maple Ridge Herd of Shorthorns Yearling heifers and bull calves for sale. J. E. TANSWELL, Mason, Mich.

Three Bred registered Shorthorns three yr. old heifers for sale. Also two bull calves. W. E. MORRISSE, R. 5, Flint, Mich.

Shorthorns Four very desirable heifers 17 to 21 months old, and bull 8 mo. All roans. Price \$1000. S. E. BOOTH, Morrice, Mich.

Purebred Shorthorn bull calves one to six months, price \$50 to \$85. W. F. BARR, Aloha, Mich.

Scotch Shorthorns for sale, 5 bulls ready for service. John Lester's Sons, Orion, Mich., R. F. D.

Polled Durham Cattle 9 yearling bulls for sale. J. A. DeGARMO, Muir, Mich.

Cattle For Sale

Loads feeders and two loads yearling steers. Also can show you any number 1, 2 and 3 year old from 600 to 1200 lbs. Isaac Shansum, Fairfield, Iowa, R-8

HOGS.

DUROCS Orion Chief Perfection No. 68945, and Jennings Pilot Wonder No. 73373. Two outstanding boars of big type and excellent quality. All selected large type smooth sows, Thrifty, smooth, large boned spring gilts from these herd boars and choice sows at very reasonable prices. The Jennings Farms, Bailey, Mich.

Dobson's Durocs surplus stock all sold. Nothing doing till spring. ORLO L. DOBSON, Quincy, Mich.

DUROCS

You want more size, feeding qualities. Fall boars ready for service. A few sows bred for June farrowing. NEWTON BARNHART, St. Johns, Mich.

Additional Stock Ads. on Page 379

Markets.

GRAINS AND SEEDS

February 12, 1918.

WHEAT.—Stocks of wheat are being rapidly manufactured into flour the supply of which is already becoming threateningly small as compared with the quantities consumed by the American people under normal conditions. Careful use of wheat products and the generous substitution of other cereals will undoubtedly enable us to bridge over the remaining months till harvest and at the same time keep our Allies from extreme hunger. Thus far the growing crop has been carried along under favorable weather conditions since going under snow last fall. Practically the whole winter wheat section reports the situation as being good. Conditions in foreign countries are also encouraging and Argentine is said to be offering the grain more freely now. The visible supply shows a decrease of 790,000 bushels. A year ago the local price for No. 2 red wheat was \$1.95½ per bushel. Present prices are: No. 2 red wheat \$2.17; No. 3 white \$2.15; No. 3 mixed \$2.15.

CORN.—Much effort is being put forth to move the corn crop from producing districts. The volume of business in Chicago on Monday was large with brokers of the Allied governments taking generous quantities of those grades fitted for ocean transportation. The poorer grades did not meet so urgent a demand and the quotations on these inferior descriptions declined while the kiln dried offerings held firm. The American visible supply increased nearly two and a half million bushels. A year ago the local price for No. 3 corn was \$1.12 per bushel. Present quotations are: No. 3 cash corn \$1.80; No. 3 yellow \$1.87; No. 4 do \$1.75; No. 5 do \$1.60; No. 6 do \$1.50. In Chicago March corn closed Monday at \$1.28 and May at \$1.27¼ per bushel.

OATS.—Values in this department reached new high levels last week but on Monday there was a little easier feeling in the trade. A ban was placed on the shipment of oats to eastern points, and although the scarcity of cars restricted the movement from country places, the embargo was probably responsible largely for bringing about the easier tone. Farmers are marketing freely, being attracted by present prices. With better transportation the many holes in consuming districts would quickly absorb generous quantities of the grain now resting in country elevators. A year ago the price paid on the local market for standard oats was 65½¢ per bushel. Present prices here are: Standard oats \$1.00½; No. 3 white \$1; No. 4 do 99¢ per bushel.

RYE.—Trade is firm and movement small, with the advances of last week holding. Cash No. 2 is now quoted at \$2.87. In Chicago the same grade is quoted at \$2.90@2.91.

BARLEY.—At Chicago price ranges from \$1.80@2.43 and malting grades in Milwaukee are held at \$2.27@2.40.

BEANS.—Demand has slowed up and a little easier feeling prevails, with local prices at \$13 per cwt. for immediate and prompt shipment. About the same conditions prevail in Chicago, with Michigan pea beans, hand-picked, in sound dry condition quoted at \$13.75@14 and red kidneys, fancy \$14.50@15 per cwt. The basis of operations at Greenville is \$12 per cwt.

SEEDS.—Firm. Prime red clover \$20.15; March \$19.15; alsike \$15.65; timothy seed \$3.85.

FLOUR AND FEEDS

FLOUR.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 pounds as follows: Straight winter \$11.30; spring patent \$11.50; rye flour \$14@14.50 per bbl.

FEEDS.—For the benefit of our readers we are repeating this week the following important notice: The U. S. Food Administration has fixed selling price per ton of wheat bran (in carload lots) by millers at 38 per cent of the price paid by them for a ton of wheat—the average price paid for wheat during the preceding month. In freshly killed hens or pullets between February 11 and April 30 of this year. The object is to save all egg-laying chickens during the egg season for laying purposes. Old roosters 22@24c selling to dealers in less than carload lots they can add fifty cents per ton. In retailing to consumers they can add to this price a retail profit of ten per cent. If sold in bags they can add the actual cost of the bags. For middlings they can add \$9 per ton to the price of

bran. For "feed" (which is the entire product of wheat after the flour is taken out) they can add \$4 per ton to the price of bran.

The following will serve as guides to prices: If the average price paid for wheat is \$2.05, the millers' price for bran in carload lots should be \$25.96. To dealers in less than carload lots the price should be \$26.46 per ton. When sold to the retail trade the price per hundred should be \$1.46. If the average price paid for wheat is \$2.10, the milling price for bran in carload lots should be \$26.60 per ton. To dealers in less than carload lots the price should be \$27.10 per ton. When sold to the retail trade the price per hundred should be \$1.50.

Other Feeds.—Cracked corn \$76.50; coarse corn meal \$74; corn and oat chop \$60.

HAY.—In carlots at Detroit: No. 1 timothy \$26.50@27; standard timothy \$25.50@26; light mixed \$25.50@26; No. 2 timothy \$24.50@25; No. 1 clover, \$24.50@25 per ton.

Pittsburgh.—No. 1 timothy \$32.50@33; No. 2 timothy \$30@31; No. 1 light mixed \$31@32; No. 1 clover, mixed \$31.50@32.50; No. 1 clover at \$31.50@32.50.

STRAW.—In carlots on track at Detroit: Wheat and oat straw \$11.50@12; rye straw \$12.50@13.

DAIRY PRODUCTS

BUTTER.—Market is easy and prices lower. Fresh creamery firsts are quoted at 43½¢; fresh creamery extras 45@45½¢.

Chicago.—Supplies are ample and prices unchanged. Creamery extras 45½¢; extra firsts 45¢; packing stock 31@32¢ per pound.

CHEESE.—Michigan flats 25½@26¢; New York flats 26½@27¢; brick 28½¢; long horns 29½¢; Michigan daisies 27¢; Wisconsin daisies 27½¢; domestic Swiss 35@42¢ for prime to fancy; Limburger 30¼@32¢ per lb.

DRESSED CALVES.—Fancy 19@20¢; choice 17¢; common 16¢.

DRESSED HOGS.—Best 21¢ per lb.

POULTRY PRODUCTS

POULTRY.—(Live).—Market is dull and firm with small receipts. Food Administration has ordered that poultry dealers shall not purchase, ship, sell or negotiate the sale of any live or freshly killed hens or pullets between February 11 and April 30 of this year. The object is to save all egg-laying chickens during the egg season for laying purposes. Old roosters 22@24¢ per lb; ducks 30@32¢; fat geese 30@32¢; turkeys 30@32¢.

Chicago.—(Live).—Offerings small and market is very dull. Fowls 22@28¢ per lb; ducks 29@30¢; geese 24@25¢; turkeys, good 25¢.

EGGS.—Although eggs are coming in more freely, buyers are getting large supplies for the Easter trade. Fresh firsts 35@36¢.

Chicago.—Demand fairly good and supplies increasing. Fresh Michigan firsts 34¢; ordinary firsts 33¢; miscellaneous lots, cases included 33¼¢.

WOOL

Trade remains firm notwithstanding the uncertainty caused by unsettled questions pertaining to the options on wool supplies recently exercised by the government. Both foreign and domestic prices are strong. Shearing has begun in some sections of this country, but no prices for the new clip have been reported. Fleece prices at seaboard ranged from 55@85¢ last week.

FRUITS—VEGETABLES

(Quotations furnished by U. S. Department of Agricultural Bureau of Markets, Detroit Office).

POTATOES.—The markets over the country seem to be adequately supplied with tubers and values show a general decline from last week. The week opened with Michigan round white stock of good quality, sacked, U. S. Grade No. 1 selling in Detroit at \$1.50@1.60 per bushel in jobbing lots. Saturday's prices for the same grade at Cleveland were \$1.25@1.50; at Buffalo \$1.50; at Pittsburgh \$1.60@1.65; at Washington \$1.87@2; at Cincinnati \$1.60@1.65; at Columbus \$1.75@2.

At country points in Michigan prices to farmers for round whites, U. S. grade No. 1 are 75@90¢ per cwt; in New York state \$1; No. 2 do 65@70¢; Maine growers are inclined to hold off selling.

APPLES.—There is a little easier feeling in this trade, with prices about steady. Baldwins sold in Detroit on Monday for \$5.50 for "A" 2¼ inch. Michigan Baldwins sold in Chicago at \$5.50@6 on Saturday.

LIVE STOCK

BUFFALO.

March 11, 1918.

Cattle.—Receipts 90 cars; market is steady; best shipping steers \$13@14; fair to good \$12@12.50; plain and coarse \$11@11.50; Canadian steers, heavy, \$12@12.50; Canadian steers, fat, coarse \$11@12; Canadian steers and heifers \$9@10; native yearlings \$12@12.50; best handy steers \$11@12.25; fair to good \$10.10@11; handy steers and heifers, mixed \$9.50@10.50; light butcher steers \$10@10.50; western heifers \$9.50@10.50; state heifers \$8.50@9.50; Canadian heavy cows \$9.50@10.50; best fat cows \$10@11; butcher cows \$7.50@8.50; cutters \$6.50@7; canners \$5.50@6; fancy bulls \$10@10.50; butcher bulls \$8.50@9.50; common bulls \$7@7.50; best feeders \$9@10; medium feeders \$8@8.50; light common \$7@7.50; stockers \$7.50@8.50; best milkers and springers \$100@150; mediums \$75@100.

Hogs.—Receipts, 40 cars, strong; heavy \$18.50@18.90; yorkers \$18.90@19; pigs and lights \$18.50@19.

Sheep and Lambs.—Receipts 20 cars; steady; top lambs \$18.60@18.75; yorkers \$18.90@19.10; pigs and lights \$18.50@19.

Calves \$7@17.70.

CHICAGO.

March 11, 1918.

Cattle. Hogs. Sheep. Receipts today...1,000 60,000 26,000 Same day 1917...13,213 53,602 24,038 Last week...76,854 204,430 67,508 Same wk 1917...38,665 146,406 63,168

Shipments from here last week included 24,368 cattle, 61,447 hogs and 16,538 sheep, comparing with 12,276 cattle, 34,439 hogs and 7,534 sheep for the same time a year ago. The average weight of the hogs received last week was increased to 239 lbs.

Cattle open this week with a good demand and strong prices. Hogs started off this morning with the best light

lots selling at steady prices and the others called 15@25¢ lower; but later on there was a rise of prices for the choicest light hogs to \$17.90. Hogs sold at a range of \$16@17.90, with the best pigs salable around \$17.40. The sheep and lamb market ruled firm, with choice lambs at \$18.

Hogs were in extremely lively demand most of last week, with eastern shippers at last buying actively and securing their full share of the offerings.

Lambs, yearlings and sheep made extremely high price records last week, with greatly inadequate offerings and a vigorous general demand for anything in the least desirable in quality.

Horses were marketed only moderately last week, but supplies were sufficient to meet demands, and prices were unchanged. Mules and cavalry horses were especially active at strong prices, but most kinds of horses sold slowly. Sales were on a basis of \$60@150 for inferior to a good class of farm chunks, \$185@265 for drafters and \$100@200 for most drivers.

ATTENTION Jersey Breeders

15 head of registered Jerseys (14 females and 1 three yr. old herd bull) will be sold at auction on farm (recently owned by me) situated 8 miles south from Lansing and ½ miles east from Dimondale on New York Central Railroad, Tuesday March 19th commencing at 12:30 sharp.

B. S. HARRIS, Owner
OFR. STANTON, Mgr.

SEED BEANS

Dry hand picked, navy beans, free from disease at \$11 per bu. F.O.B. John Vance, Hersey, Osceola Co., Mich.

The Citizens' Mutual Automobile Insurance Company of Howell, Michigan

The Largest and Most Successful Mutual
Automobile Insurance Company
in the World

Organized on the 30th of August, 1915

The Following Shows the Number of Members and the
Cash on Hand December 31st the Past Three Years:

	Members	Cash on Hand
Dec. 31st, 1915	1,738	\$ 4,083.34
Dec. 31st, 1916	15,337	7,740.87
Dec. 31st, 1917	27,431	27,175.45

Summary of Claims Paid for 1917:

75 Claims for Fire - - -	\$12,601.70
142 Claims for Theft - - -	22,822.99
257 Claims for Liability - -	23,514.22
Total	\$58,938.91

This Company Has Never Borrowed One Dollar, and
Every Claim Has Been Promptly Paid
as Soon as Established.

If some person is injured by your auto, causing serious
injury or death, and suit is started against you, you
will want the protection of an established company
with experienced officers to handle you matter.

Protects You Against Fire, Theft and Liability.
Cost Only \$1 for Policy and 25c per H. P.

W. E. ROBB, Secretary,
Howell, Michigan.

Healthy Stock Pays Big

Put your stock in the profit-producing class. The most positive, economical and easy method of restoring and keeping in perfect health and vigorous condition your horses, cattle, sheep and swine is to regularly use

Pratts Animal Regulator

This Guaranteed Stock Tonic and Conditioner has stood the test for nearly fifty years and is demanded by farmers who make stock keeping pay big profits.

Pratts Animal Regulator tones up the whole system in a natural way. It sharpens the appetite—helps digestion—regulates the bowels—expels irritating worms—prevents sickness—increases strength, growth and production. Once tried, you will never be without it.

Pratts Products are sold by dealers everywhere on money-back guarantee. Demand Pratts—refuse substitutes.

Write today for Stock Book—FREE

PRATT FOOD CO.

Makers of Pratts Poultry Regulator and Remedies

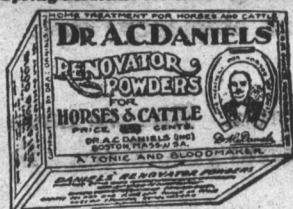
Philadelphia
Chicago
Toronto

A SPRING TONIC FOR YOUR HORSE



Dr. Daniels' Renovator Powders

A True Conditioner
A Spring Medicine for that Tired Feeling



SOLD EVERY WHERE IN MICHIGAN.

FREE! 180 page HORSE BOOK. Address

Dr. A. C. Daniels' Boston, Mass. Dept. M. R.

DEATH TO HEAVES! NEWTON'S

STANDARD REMEDY FOR HEAVES, COUGH, DISTEMPERS, COLIC, STAGGERS, ETC. Cures Heaves by correcting the cause—Indigestion. Prevents Colic, Staggers, etc. Best Conditioner and Worm Expeller. 26 years sale. Three large cans guaranteed to cure Heaves or money refunded. The 1st or 2nd can often cures. \$6.00 and \$12.00 per can at dealers' or prepaid by parcel post. Booklet free.

THE NEWTON REMEDY COMPANY, Toledo, Ohio

I will condition a Horse or Cow in twelve days.

Put flesh on its bones. Give it life and vigor. Can add 50% to looks and value. Satisfaction guaranteed or no pay. Send postal for free offer.

P. M. FAUST, BRYN MAWR, PA.

EGGS Production well started, general quality fine. For a few months it will be hard to get any premium. Will do best we can although may have to stop paying premiums until loss off season sets in. Keep shipments coming.

AMERICAN BUTTER & CHEESE COMPANY, Detroit, Mich.

HAY Ship To The Old Reliable House Daniel McCaffrey's Sons, 623-625 Wabash Bldg., Pittsburgh, Pa.

Railroad Traffic Inspectors Wanted.

\$125 a month and expenses to start; short hours; travel; three months home study, under guarantee; we arrange for position. No age limit. Ask for booklet L28. FRONTIER PREP. SCHOOL, Buffalo, N. Y.

THIS IS THE LAST EDITION.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

DETROIT LIVE STOCK MARKET.

Thursday's Market.
March 13, 1918.

Cattle.

Receipts 1412. Market is very active; canners 25c higher than last week; other grades strong 10@15c higher.

Best heavy steers \$11.50@12.50; best handy weight butcher steers \$10.50@11; mixed steers and heifers \$9.50@10; handy light butchers \$8.50@9.25; light butchers \$8@8.50; best cows \$9@10; butcher cows \$7.50@8; cutters \$7@7.25; canners \$6.50@6.75; best heavy bulls \$8.50@9.25; bologna bulls \$3@8.25; stock bulls \$7@7.50; milkers and springers \$85@100.

McMullen, K. & J. sold Parker, W. & Co. 1 bull wgh 1350 at 13.25, 5 steers av 925 at \$10.50, 2 do av 700 at \$9, 1 cow wgh 1200 at \$7, 1 bull wgh 1370 at \$8.50, 1 cow wgh 1120 at \$7.25; to Nagle P. Co. 6 butchers av 925 at \$9, 2 cows av 1100 at \$8; to Hammond, S. & Co. 3 canners av 880 at \$6.25; to Goodgold 3 butchers av 850 at \$7.50; to Burnfield 1 bull wgh 1080 at \$9.25, 3 do av 1125 at \$9; to Nagle P. Co. 23 steers av 1050 at \$11.75, 2 heifers av 750 at \$9.50, 2 cows av 920 at \$7.25, 9 do av 950 at \$7.25, 2 do av 970 at \$8.25, 8 steers av 1050 at \$11.40, 6 butchers av 900 at \$9.25, 2 do av 560 at \$7.25; to Bray 3 cutters av 875 at \$7, 2 cows av 1050 at \$9, 1 canner wgh 770 at \$6.50; to Mich. B. Co. 2 bulls av 750 at \$8, 1 do wgh 1030 at \$8.50, 2 cows av 850 at \$7.50, 9 butchers av 700 at \$8.25; to Bray 2 cows av 850 at \$8.50, 3 do av 750 at \$8.50, 3 do av 850 at \$7, 1 do wgh 1060 at \$7.50.

Erwin, S. & J. sold Nagle P. Co. 1 bull wgh 1320 at \$9.50, 3 do av 970 at \$8.50, 3 steers av 943 at \$10.75; to Bresnahan & K. 3 canners av 950 at \$6.60, 3 do av 950 at \$6.60; to Sullivan P. Co. 2 cows av 920 at \$7.50, 11 steers av 1034 at \$11, 3 do av 1050 at \$10, 13 do av 770 at \$9.35, 2 heifers av 535 at \$6.75, 3 cows av 1090 at \$8.50, 2 steers av 915 at \$11, 2 do av 750 at \$8.50; to Hammond, S. & Co. 17 do av 1013 at \$10.75, 7 do av 900 at \$11; to Mich. B. Co. 1 cow wgh 1110 at \$8; to Bray 4 do av 1000 at \$7, 2 do av 1205 at \$7.25, 1 do wgh 910 at \$6; to Thompson 3 steers av 713 at \$8.50, 8 do av 860 at \$10; to Nagle P. Co. 12 do av 1003 at \$11.25; to Kamman B. Co. 1 do wgh 950 at \$11, 1 do wgh 1020 at \$10.75, 3 do av 933 at \$11, 3 do av 943 at \$10.75; to Mich. B. Co. 14 butchers av 744 at \$9.65, 6 cows av 1065 at \$8.75, 4 do av 1020 at \$8.25, 9 butchers av 717 at \$9.65, 1 bull wgh 1260 at \$9; to Bray 4 cows av 850 at \$7, 3 canners av 777 at \$5.50, 4 stockers av 437 at \$7, 14 steers av 666 at \$9.

Veal Calves.

Receipts 775. Market strong at last week's prices prices. Best \$15.50@16; others \$8@11.

Sandel, S. B. & G. sold Fineman 7 av 170 at \$15, 6 av 150 at \$12, 8 av 130 at \$10, 7 av 135 at \$12, 9 av 165 at \$15; to Dabrowsky 2 av 140 at \$14; to Rattkowsky 20 av 135 at \$15; to Mich. B. Co. 15 av 150 at \$15.50; to Golden 3 av 170 at \$15.50, 4 av 115 at \$12.50, 4 av 145 at \$12, 2 av 150 at \$10, 4 av 145 at \$15; to Thompson 2 av 330 at \$8, 9 av 145 at \$15, 4 av 135 at \$13, 8 av 145 at \$15.50; to Mich. B. Co. 10 av 134 at \$15.

Sheep and Lambs.

Receipts 4193. Market, quality considered, strong at last week's prices. Best lambs \$17.75; fair do \$17@17.25; light to common lambs \$16@16.50; yearlings \$16; fair to good sheep \$10@12.50; culls and common \$5@7.

Bishop, B. & H. sold Nagle P. Co. 40 lambs av 92 at \$17, 22 do av 80 at \$17, 63 do av 105 at \$17, 119 do av 90 at \$17, 230 do av 85 at \$16.25; to Parker, W. & Co. 49 do av 70 at \$17.75, 60 yearlings av 80 at \$16, 13 lambs av 65 at \$16; to Swift & Co. 962 do av 91 at \$17.75, 219 do av 88 at \$17.65, 207 do av 85 at \$17.65, 148 do av 87 at \$17.65, 75 do av 75 at \$17.75, 204 do av 85 at \$17.75, 195 do av 78 at \$17.75.

Erwin, S. & J. sold Nagle P. Co. 12 sheep av 95 at \$11.25, 42 lambs av 95 at \$17, 10 do av 98 at \$17, 28 do av 65 at \$15.50, 15 do av 75 at \$17.50, 24 do av 70 at \$17, 24 do av 70 at \$17.50, 9 do av 90 at \$16.75, 5 sheep av 85 at \$10; to Wilson & Co. 64 lambs av 85 at \$17.75, 79 do av 80 at \$17.75, 219 do av 88 at \$17.75, 73 do av 88 at \$17.75, 395 do av 93 at \$17.50.

Sandel, S. B. & G. sold Thompson 15 lambs av 75 at \$17, 9 do av 70 at \$5, 6 do av 60 at \$15.

Hogs.

Receipts 4024. Market strong and 50c higher than last week. Pigs \$17.50; mixed grades \$17.50@17.85.



No. 8 Spiral Wide Spreader Latest in Harvester Spreaders

WE have added the New No. 8 Spreader—spiral wide-spread, light-draft—to the Low Corn King, Cloverleaf and 20th Century lines.

We are in a position to suit exactly any farmer, whatever his previous spreader experience has been.

If you have not yet had an opportunity to study the features of the No. 8, the spreader for every average farm, the lightest-draft spreader made, write us and we will put you in touch with the dealer. No. 8 has the famous International spiral wide-spread that has thoroughly demonstrated its success as a wide spreader for all-around use. In addition, the Low Corn King, Cloverleaf and 20th Century lines provide you with your choice of larger capacity spreaders, with the regular disk wide-spread (well known wherever spreaders are sold) or with the spiral spread on special order.

The New No. 8 Spiral Wide Spreader and other Low Corn King, Cloverleaf and 20th Century spreaders will go onto many thousands of farms this year. They are all light-draft, low-loading, easy-handling, built of steel—and satisfactory. It will pay you to write us for catalogues. Write the address below.

International Harvester Company of America

(Incorporated) CHICAGO U S A
Champion Deering McCormick Milwaukee Osborne

DePuy's SEEDS

ARE FIRST AID TO GOOD CROPS

And Prices Reasonable.

OVER 400% Increase in sales in two years, is proof that our VALUES ARE APPRECIATED.

A post card will bring our 1918 SEED BOOK.

Don't buy SEED CORN, OATS, BARLEY, BEANS or PEAS, CLOVER, GRASS or other FARM and GARDEN SEEDS, 'till you have seen it.

THE C. E. DePUY CO., Pontiac, Mich.



Inspected Pedigreed Oats and Barley

College Wonder, College Success, Alexander and Worthy are the pure bred oat varieties available. These were developed at the Michigan Agricultural College and so are especially adapted to Michigan conditions. Pure, clean seed for sale by the members of the Michigan Crop Improvement Association whose seed in field and bin met the Inspected seed requirements of the Association. If you are interested in these or if you buy Inspected seed and would like your crop Inspected, ask for these requirements, when you write for list of growers of Pedigreed grain. For this list or any other literature of the Association write the Secretary.

J. W. NICOLSON, East Lansing, Michigan.

PLANT FINN'S TREES FOR PROFIT

Mr. Planter if you are going to plant out an orchard this spring be on the safe side by planting my Guaranteed Trees. True to name, free from disease and packed so as to reach you in perfect condition.

	Each	10	100
See 2 yr. 6 to 7 ft. xxx Apples,			
Plums, Pears	\$3.00	\$2.50	\$18.00
2 Medium size 5 to 6 ft.	.25	2.00	15.00
Sweet & sour cherries 6 to 7 ft.	.35	3.00	24.00
Quinces xxx 4 to 6 ft.	.30	2.50	22.50
Medium size 3 to 4 ft.	.25	2.00	18.00
Peaches 1 yr. 5 to 6 ft.	.25	1.50	12.00
4 to 5 ft.	.15	1.35	9.00

Send for Free Price List of our leading varieties of small fruits and ornamentals.

JOHN W. FINN'S, Wholesale Nurseries
Est. 1890 Dansville, N. Y. Box 21

PLANT MICHIGAN TREES

at wholesale prices, direct from Nursery to planter. Healthy acclimated, high grade, true to name fruit trees, berries ornamentals. The nation needs more fruit. He who plants this spring serves his country. A postal today will bring prices and descriptions.

Celery City Nurseries Box 18, Kalama-zoo, Mich.

Hill's Evergreens Grow

All hardy stock—twice transplanted—root pruned. Protect buildings, stock, crops. Hill's Evergreen Book, illustrated in colors, Free. Write today. D. Hill Nursery Co., Box 2303 Dundee, Ill. Evergreen Specialists

Have You Any Beans?

WE ARE BUYERS, for cash, of red kidney, brown or Swedish and Boston yellow eye beans, fancy bright, clean stock. Also wax and green-podded garden beans. Send samples for bid.

NORTHROP, KING & CO., Seedsmen, Minneapolis, Minn.

SEED CORN—2000 BUSHELS

BELL ALTO GOLDEN DENT A 110-day corn, carefully bred and selected for twelve years. Took first prize in Co. Corn Shows last two years. First prize at State College Corn Show last fall. Composite samples tested by State College, in each instance, prove 100 percent germination, while hundreds of samples being tested there are averaging about 65 percent germination. \$5 per bushel in lots not less than 5 bushels. Sacks 45 cents extra.

BELLE ALTO FARMS M.H. McCallum, Manager, Wernersville, Berks Co., Pa.

BEANS

(PROLIFIC) Seed, State Tested. BIG YIELDERS

Yield 60% more than Pea or Navy on any soil. Sample and price on request.

A. A. Lambertson, Cedar Springs, Mich.

Selected Early Pink POTATOES

large vigorous growing, drought and blight resistant variety \$2.50 per bu. Milo M. Gibson, R.5, Lapeer, Mich.

Wonderful "Early June" tomato, earlier, larger, smoother, better flavor than any other early sort. Bears all summer long. Order your plants today: 15c doz., 70c per 100 prepaid.

P. L. WARD, Hillsdale, Mich.

Frost Proof cabbage plants, Early Jersey Wakefield, Charleston Wakefield, Succession and Flat Dutch at \$1.50 per M. by express collect; 35c per 100 by parcel post prepaid. O. J. & C. Whaley, Martin's Point, P. O., S. C.

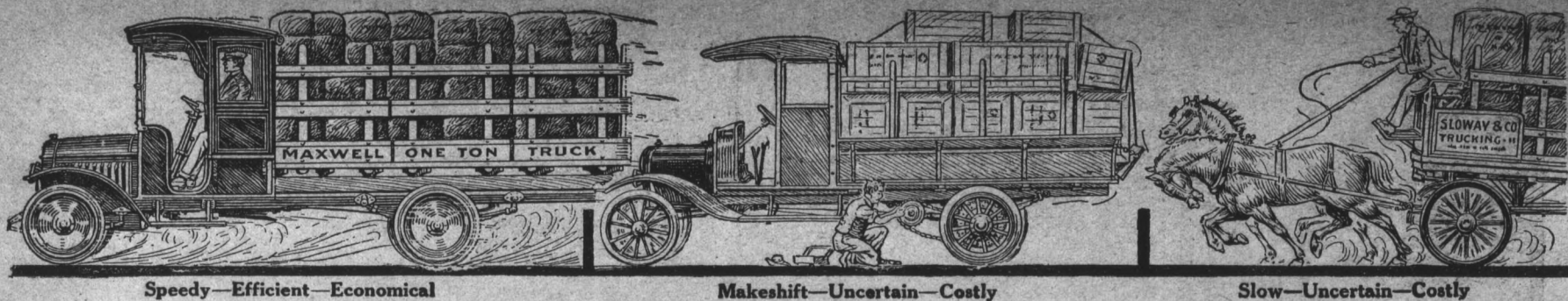
Beardless BARLEY—Pure, cleaned for seed \$2.50 per bushel, new grain bags included.

H. L. COLE, Palmyra, Mich.

Potatoes Bliss, Boyce, Carman, Cobbler, Giant, Hustler, Green Mt. Longfellow, No-blight, Northern Six-Weeks, Ohio Queen, Raleigh, Triumph, others. C.W. Ford, Fishers, N.Y.

SEED OATS: Worthy and Alexander. Samples Free. O. M. YORK, Millington, Mich.

FOR SALE—Choice Dahlia Tubers, 100 varieties to select from. LUCY O'HARROW, Clarksville, Mich.



Be Cold Blooded When You Choose Your Truck —and Choose Now!

As a business farmer, you must have a truck. Don't postpone decision longer. Buy now while you still can get one. Don't wait until only the money-wasting makeshifts are left.

Be just as coldblooded as a traffic expert is in selecting the right truck. Base your choice on the same considerations as he does and you will be right.

This is the way the traffic expert would look on your trucking problem:

1. **Horse Service**—Always unreliable, limiting your scope and delaying you unexpectedly. Under present conditions growing more costly than ever.
2. **Miniature Truck**— $\frac{3}{4}$ -ton; too small for practical conditions, or for your ever-increasing traffic. Costs just as much to run as a good one-ton truck.
3. **Passenger Car**—Adapted into a truck by a makeshift attachment made by a firm that did not make the car. Sure to breed trouble. Hard to keep in condition. Hard to find and cure trouble. Divided responsibility.
4. **3-Ton Truck**—Over-heavy for everyday work. Wasteful unless always used at full load.
5. **Unproved 1-Ton Trucks**—Partly experimental. Not made of highest grade steel. Over-heavy. Uncertain as to service. Costly to operate.

6. **Standardized, Time-Tested Maxwell One-Ton Worm-Drive Truck.** Low first cost. Low operating cost. Complete truck designed wholly as a truck. Made of high-grade automobile steels. An engine which has proved its reliability in years of use on hundreds of thousands of cars under all possible conditions. Worm drive of the same type as on trucks costing \$5,000. Completely enclosed drive, safe against derangement by the worst roads or worst weather.

Get the facts. Write us a letter. The more coldblooded your judgment in choosing your truck, the better we will be pleased.

The new and coming conditions are changing the whole of the transportation experts' judgment as to what truck is most economical in operating costs as well as in first costs.

If you decide in time, you can still get one of these trucks of proved reliability and 100 per cent. efficiency; cash or easy terms.

There is a Maxwell dealer near you. But we have some new information that we want to send you direct. Send us a postal card today.

One-Ton Chassis, \$1085; Chassis with Cab and Windshield, \$1125; Combination Box Body, \$1135; Combination Box Stake Body with Cab and Windshield, \$1175; Stake Gate Body with Cab and Windshield, \$1180; Express Canopy Body, \$1195. F.O.B. Detroit

Send Today for Catalog N

Maxwell Motor Sales Corporation
Detroit Michigan

MAXWELL ONE-TON TRUCK

WORM-DRIVE

MOST MILES PER GALLON - MOST MILES ON TIRES