

MICHIGAN FARMER

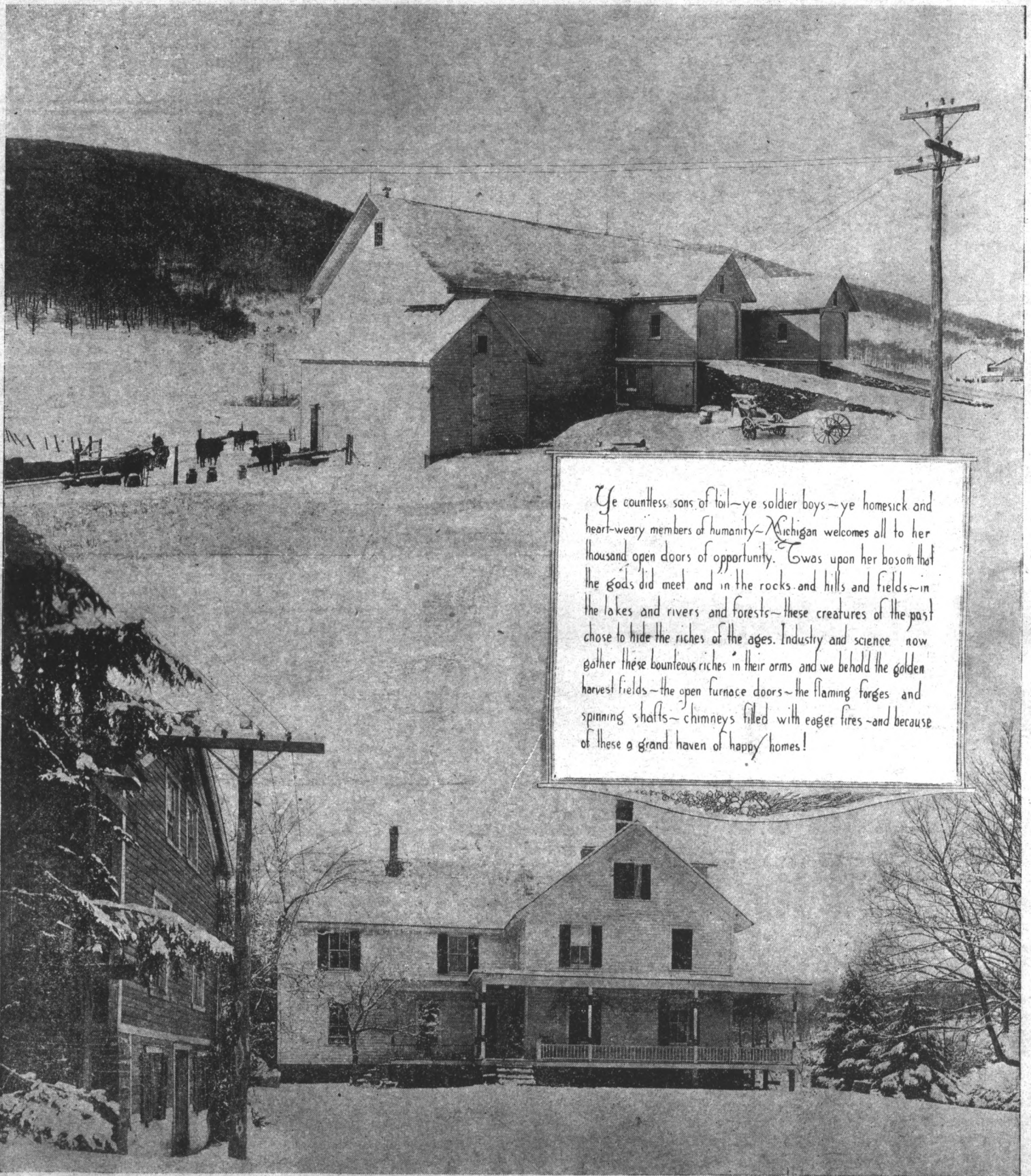
AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL.
ESTABLISHED 1843.

VOL. CLII. No. 1
Whole Number 4026

DETROIT, MICH., SATURDAY, JANUARY 4, 1919

\$1.00 A YEAR
\$3.00 FOR 5 YEARS



Ye countless sons of toil—ye soldier boys—ye homesick and heart-weary members of humanity—Michigan welcomes all to her thousand open doors of opportunity. 'Twas upon her bosom that the gods did meet and in the rocks and hills and fields—in the lakes and rivers and forests—these creatures of the past chose to hide the riches of the ages. Industry and science now gather these bounteous riches in their arms and we behold the golden harvest fields—the open furnace doors—the flaming forges and spinning shafts—chimneys filled with eager fires—and because of these a grand haven of happy homes!

The Michigan Farmer

Published Weekly 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
E. H. NANCE..... Vice-President
P. T. LAWRENCE..... Treas.
J. F. CUNNINGHAM..... Secy.
I. R. WATERBURY..... Associate Editors
BURT WERMUTH.....
FRANK A. WILKEN.....
ALTA LAWSON LITTELL.....
LEROY W. SNELL.....
W. MILTON KELLY.....

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 5c a year extra for postage.

RATES OF ADVERTISING

50 cents per line aggregate type measurement, or \$7.00 per inch (14 aggregate lines per inch) per insertion. No adv't inserted for less than \$1.50 cash 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 Post Office at Detroit, Michigan, Under the Act of March 3, 1879

VOLUME CLII. NUMBER ONE

DETROIT, JANUARY 4, 1919



CURRENT COMMENT

A Land Settlement Policy

THE movement for a definite and co-ordinated land settlement policy in Michigan, Wisconsin and Minnesota is a matter for congratulation. The men appointed by Governor Sleeper at the request of the Michigan Land and Live Stock Congress, recently held at Grand Rapids, to represent Michigan in formulating such a policy, have an opportunity to render a most valuable service to the state and community, and indeed to the whole world in view of the present and prospective food shortage.

Public opinion on this question is likely to be divided, but unquestionably the broad viewpoint is the only worthy attitude, and the one which is certain to prevail. The project to provide farm opportunities for soldiers and sailors who desire them is a worthy one. The boys who have fought our battles in Europe have earned a preference in opportunity, whether on the farm or in the factory or office, and this fact is bound to be generally recognized. Those who are most likely to seek farm opportunities are boys from the farms, who have a knowledge of the business. Others may try it, but they will be handicapped at the start and less likely to succeed in the development of new farms than the farm boys. A sound land settlement policy will also provide opportunities for other farm boys who find it difficult to start in the business in their home communities in well developed agricultural sections.

There will be some who will decry a movement of this kind on the ground that larger production will lessen the opportunity for profitable production. But increased production will be stimulated by high prices for food stuffs in any event. Production has increased under war conditions, notwithstanding the handicaps growing out of those conditions. Michigan has something like twelve million acres of idle land. Much of this area is good agricultural land, capable of maintaining prosperous communities, which offers better opportunities for the settler than do

idle lands in other sections of the country. The development of this land would benefit the state at large, as compared with a similar development in other sections of the country, and it is a wise policy to insure participation in the coming agricultural development by a sound and consistent land settlement policy.

A list of essential factors in such a policy has been advanced by Mr. W. P. Hartman, one of Michigan's representatives at the tri-state conference, and well known to many Michigan Farmer readers, which indicates progressive thought on this question as follows:

First.—Faith among the people in the state in its future agricultural and industrial progress and prosperity.

Second.—More capital for agricultural purposes; easier credits and lower interest charges.

Third.—Constructive and permanent land settlement or colonization policies.

Fourth.—More and better live stock.

Fifth.—Reforestation.

Sixth.—Good roads.

Seventh.—Greater knowledge of and improved methods for the removal of stumps.

Eighth.—Cooperation between farmers, chambers of commerce, the press, land owners and agents, bankers, manufacturers, state authorities and others.

Consumers Demand Quality

WHILE the average farmer is aware that there is a certain market demand for standardized food products of a high quality, we have come to believe that there is a very general misunderstanding among producers regarding the number and economic status of urban consumers who are willing to pay the advanced price commanded by such products. For a concrete example let us take apples, an important product of many Michigan farms. There is a very general appreciation among apple growers of the fact that fancy western box apples are sold in considerable quantities in all of the larger Michigan cities, but it would be a fairly safe wager that the average apple grower's first thought in connection with this sale of fancy apples is that the demand is confined largely to the high-class grocery stores which cater to the wealthy class, and to the fruit stand and news butcher trade, which lives on the bounty of the traveling public. But the facts are that these same choice, standardized western apples are also to be found in the chain stores which sell to the housewives who carry their purchases home in a market basket, and in the cheap confectionery shops whose customers are just average city workers. In fact these are the only sort of apples generally to be found in the last mentioned establishments, and in volume of trade, as measured by the returns, they vie with the home-grown product in even the cut-rate stores.

The reason for this fact is obvious. The merchant and the caterer buy the standardized western products because there is a demand for it and they can resell it again at a profit. And the apples are all salable, with no waste and no culls to be picked out and lost or left on top of the package to spoil future sales. Thus a standardized, attractive appearing and neatly packed product from the Pacific Coast is displacing a really better home-grown product with a very large and varied class of city consumers, just because its growers have realized the importance of giving that product a standard appearance of quality.

What western growers have accomplished in this direction with apples has been accomplished to a similar or lesser degree in other lines of special production, and there is no doubt that it can be accomplished to a profitable degree in many lines of staple agricultural production. There is equally little doubt that a general carelessness as to quality will lessen the demand

for our products just as standardization to a high ideal will increase it. As an example of this we have only to recall the market history of Michigan beans. Michigan beans became famous and found a market throughout a large part of the world largely because they were for years marketed as a standardized product, under definite grades established by the Michigan Bean Jobbers' Association. Due to peculiarly unfavorable weather conditions the bean crop of 1917 was poor in quality, and even the apparently good beans contained an abnormally high percentage of moisture. Under the old standards there were but very few choice beans produced in the state. To meet this abnormal condition the jobbers made the fatal mistake of changing the standard by raising the permissible moisture content, with the natural result that many shipments went wrong in transit or in storage, and the reputation of the Michigan product as well as the bank accounts of both growers and dealers suffered in consequence.

In most notable cases where a special market for any food product has been built up on standardized quality, this result has been accomplished through the cooperation of the growers of the product. Michigan grape growers have standardized their product through careful grading methods, thus simplifying the cooperative marketing problem. Michigan potato growers who are selling their product in a cooperative way have an opportunity to establish a good reputation for their product by maintaining the standard of their product, notwithstanding the suspension of the grading rules formerly enforced by the Food Administration.

The average standard of living is higher in America than anywhere else in the world. This is a great factor in making America the greatest country and Americans the greatest people in the world. And it may be made a great factor in making Michigan farmers the most prosperous farmers in the world if they will cooperate toward the production and marketing of standardized quality products which satisfy present day living standards.

Agitation for Flock Husbandry

WITH so much agitation in favor of more farm flocks there are sure to be many failures among farmers who fail to exercise discrimination in believing all that they read about the possibilities of profits in the sheep industry. Investing heavily in breeding stock or attempting to make the business a specialty should be the subject of careful consideration.

Sheep are so high in price that any material decrease in values is likely to prove a serious loss if any extensive breeding or feeding venture is undertaken. The new breeder must plan on getting quick returns in wool and lambs. He must know something about the general care and management of sheep and plan his system of handling them so as to keep them free from disease and parasites. Although sheep are comparatively free from diseases, still they cannot endure certain kinds of exposure and neglect. Special attention must be devoted to furnishing them with proper kinds of feed if one is to make a success of the business.

In starting a small farm flock one should buy a few well-bred productive ewes. Obviously the selection of ewes having good mutton type and heavy fleeces means large returns from both wool and mutton. With a few good ewes and a pure-bred ram one can gradually grow into the sheep business without too heavy an expenditure of capital. This is the only safe way to embark in the sheep business.

THE LIVE STOCK MEETING.

The annual meeting of the Michigan Improved Live Stock Breeders' and

Feeders' Association will be held at the Michigan Agricultural College, on February 5-7 inclusive. On account of the prevalence of influenza it was decided by the executive committee to postpone the meeting to the above date, which falls during "Farmers' Week" at M. A. C. The allied breed organizations will hold their meeting on Wednesday, February 5 and the general meeting on February 6.

G. A. BROWN, Sec'y.

News of the Week

Wednesday, December 25.

AN international organization following the lines laid down by Premier Clemenceau, of France, has been formed to secure uniformity of principles respecting a League of Nations for presentation at the peace conference. President Wilson leaves Paris for Christmas ceremony and address before General Pershing's men at Chaumont, France.—Seven thousand tons of cereal substitutes have been purchased in this country by the Food Administration for shipment to Belgium.—Porto Rican troops are being demobilized.—Secretary Lansing denies that the American peace delegation favors sinking the surrendered German fleet.—A blizzard interrupts railroad transportation over the western and southwestern states.

Thursday, December 26.

PRESIDENT WILSON crosses the English channel to England.—The Allied governments have decided against further intervention in Russia.—France lifts ban on gasoline, permitting its use on commercial automobiles.—French mission to the people of the Caucasus mountains has been given a hearty welcome.—Germans return stocks taken from the banks in northern France amounting to approximately \$1,200,000,000.—Rev. Dr. J. Wilbur Chapman, noted evangelist, dies in New York City.—An American relief expedition carrying physicians, nurses and supplies will leave this country soon to render relief in Armenia and Syria.

Friday, December 27.

THE Michigan troops fighting in northern Russia are experiencing great hardships due to lack of medical help and hospital facilities.—The impression prevails that the Radicals will make an attempt to disrupt the present German government.—British leaders consult with President Wilson.—Germans still hope to regain their colonies.—Italy's total war losses aggregate 2,800,000, while the number of French killed is 1,071,000.—Three thousand American soldiers leave France for home.

Saturday, December 28.

FOOD ADMINISTRATOR HOOVER refuses emphatically to discuss German food conditions with former authorities who seek a conference.—It is rumored that Dr. Liebknecht, the leader of the German socialists, has been elected president, replacing Dr. Ebert as head of the government.—The agricultural committee of the lower house of congress asks for \$500,000,000 to enable the government to guarantee wheat prices on the 1919 crop.—Civilians are assisting the Cleveland police in an effort to check the wave of crime in that city.—The Detroit Board of Commerce announces that employers of the city will show preference to Detroit laborers in choosing help for carrying on their various enterprises.

Sunday, December 29.

PREMIER LLOYD GEORGE makes announcement of an agreement between England and the United States to unify their programs at the peace conference.—The report that the Ebert cabinet of German has fallen is confirmed.—The coalition government of England won a sweeping victory in the elections for the new parliament, as shown by results just published.—Germany has already paid the United States 45,000,000 marks, in accordance with the terms of the armistice.—The French soldiers now occupy Odessa on the Black Sea.—Prominent citizens of Michigan start move to rescue soldiers from this state who are fighting in northern Russia.

Monday, December 30.

FRANCE announces her peace terms to include the utmost publicity to the proceedings of the peace conference, the adoption of the principle of the League of Nations, and no annexations.—Riots are reported in several large German cities, including Kiel, Dantzig, Hamburg, Lubeck and Berlin.—Boston enforces the use of masks to aid in the control of the influenza epidemic.—The business section of Bristol, Tenn., is destroyed by fire following an explosion.

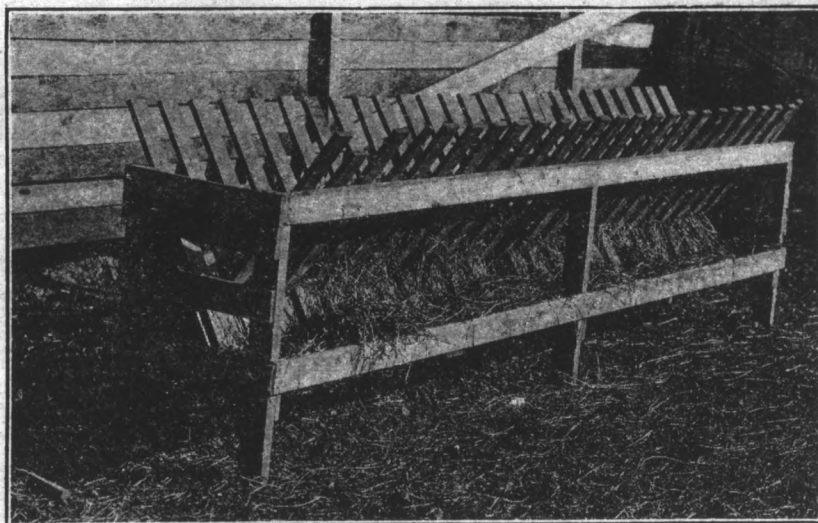


Sheep Needed on Michigan Farms

By Lester J. Meredith

THE sheep should be one of the main props of our agriculture. With meat prices rapidly advancing to a level without precedent in the history of the trade a small flock of sheep should be kept on practically every farm where a diversified system of agriculture is practiced. The only arguments against the breeding and rearing of sheep are parasitic infection, losses from dogs and that sheep are too much bother. In proportion to the returns they grant, sheep are no more bother than any other kind of farm stock; but they must have proper care. They need some pampering, it is true, and they need adequate protection from vermin, dogs and rain; but this does not differentiate them from all other farm animals from which the owner hopes to reap a satisfactory profit.

With relation to parasitic infection, England is just about as badly off as American farmers. What they have learned to do, American farmers can do as well as they. Parasitic infection may be avoided by sub-dividing the fields and pastures so that the ewes and lambs may be changed frequently to prevent the lambs becoming infected with the worms deposited in the droppings of the ewes. England's climate is more favorable than that of America to these parasites, but by providing clean forage for the lambs and dealing out grain when it is needed to promote rapid growth its flockmasters defy this menace to their lambs. It is needless for farmers to dally with losses where sheep are kept in small flocks and where they have sufficient range to provide frequent change of pasture for the ewes and lambs. It has been demonstrated by several experiment stations that flocks can be so managed as to secure for



Combination Grain and Roughage Rack, Adapted to Michigan Farms.

them approximate if not complete immunity from the injury of parasites.

It costs money to change our system of pasturing sheep and to divide our pastures up into smaller lots but we must practice this method if we succeed in keeping our sheep and lambs free from stomach worms.

We know that these worms come from the sheep to the lambs through the wet grass that is eaten. We know that it takes a certain time for the pests that have dropped on the grass to develop enough to get into the lambs. That time is estimated to be from eight to twelve days. We know that the lambs are born free from parasites. We know that it is quite possible to keep the mothers free from parasites before the lambs are drop-

ped. By putting these facts together we can readily see that if we change our pastures frequently we will lessen the danger of the lambs becoming infected with these worms through the grass that they eat. Some of the highest authorities recommend allowing the lambs to run ahead of the ewes and moving the ewes ahead one pasture each week, thus changing the ewes and lambs each week.

In this manner twelve pastures will carry the flock through the summer and the danger of the lambs becoming infected with these worms will be reduced to a minimum. There is no branch of live stock care and feeding that affords a more interesting and profitable field for study and practical investigation than sheep husbandry,

and no branch of stock farming that is so little understood among farmers.

As the weather has considerable influence upon the development of these parasites, making them dangerous in pastures, the following taken from a government publication is of value: "Infected and non-infected sheep may be placed together in clean fields the last week in October and kept there until March or even later, according to the weather, with little or no danger of the non-infected sheep becoming infected. If moved then to another field they may remain there very near the entire month of April before there is danger of infection. During May it would be necessary to move the sheep at the end of every two weeks, in June at the end of every ten days, and in July and August at the end of every week in order to prevent infection from the infected sheep. After the first of September the period may be lengthened."

One of the assurances that sheep are going to become popular in our farming is the fact that farmers are coming to realize the adaptability of sheep to soil fillage. The old notion that sheep should be kept primarily for grazing cheap pasture land is fast giving way to the new idea of utilizing them to graze down forage and grass crops, clean up corn fields and convert our farm-grown feeds into cash commodities and soil fertility. Sheep are going to find new homes on many farms because thoughtful farmers know that the demand for wool and mutton is rapidly increasing and that both are profitable at present prices. Moreover, the comparatively small cost of maintaining a small flock of breeding ewes, and their ability to clean up weeds and undesirable grasses in his (Continued on page 22).

Cheaper Feed and More Eggs

By Briant Sando

IN view of present high feed prices we are economizing in several ways but without in any manner lessening the efficiency of our methods. The cheapest ration in the world is expensive if it fails to produce eggs.

The first step is to sort the fowls over and cull out the loafers, the poor layers, and the hens too old to be profitable. It is better to sell off part of the flock and give suitable rations to the hens retained, than to expect a large flock to produce eggs profitably when the quality is not kept up.

To cut feeding costs, wheat must be largely eliminated from the ration. Corn, which is much cheaper than are wheat or oats, is now being used by most practical poultrymen in much larger proportions than was formerly believed practicable.

It is true that hens heavily fed on corn are liable to become overfat, but this is partly because the kernels are so large and so easily picked up that over-eating and idleness are encouraged among the fowls. Where corn is fed coarsely cracked and scattered in deep litter so that the fowls have to scratch hard and long for all they get, it can be fed in almost any reasonable proportion without bad results.

At the present prices in most localities, barley can be economically used along with corn as a substitute for wheat. In some markets, a bushel of barley costs only about half as much as a bushel of wheat, while its feeding value is only slightly less. Oats should be retained in the ration.

Rye can also be fed to advantage at present prices. Whole rye is not very palatable to fowls and they will seldom eat much of it. However, ground rye can be added to the mash to the amount of ten or fifteen per cent.

Another means of reducing the feed bills is to use dry mash more freely. A good mash mixture costs less than whole grains, pound for pound, and also goes farther because it is more readily digested by the fowls. Half of the grain used can safely be fed in the form of dry mash. A certain propor-

tion of the whole grain in the ration is essential to maintain the rugged health of the fowls, but beyond this point it is cheaper to have the grains ground at a mill than to make the fowls do it. Another advantage in the feeding of mash is that the ration can be better balanced and thus made more nearly one hundred per cent efficient.

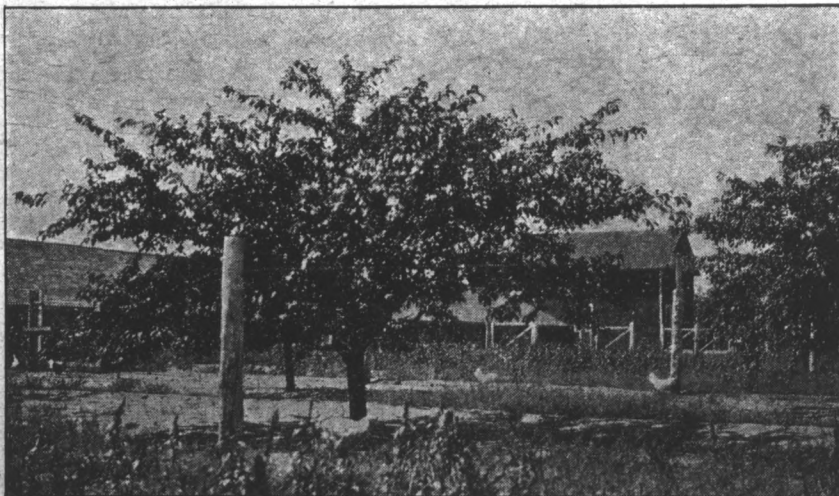
The mash can be cheapened in various ways, such as by the use of ground rye, an increased proportion of gluten feed and less meat scrap, and the addition of shredded or meal alfalfa for

bulk. In adding the latter or any other coarse stuff to the mash, however, remember that fowls do not digest crude fibre and too much of it should be avoided.

In general, it is better for the fowls and more economical for the owner, to introduce bulk in the form of succulent green stuff. Here is a chance for most of us to make a big saving, for twenty-five to thirty-five per cent of the average ration can be made up of greens, the cheapest of all foods. And aside from reasons of economy, the poultry ration should contain a liberal proportion of succulent green food in order to keep the fowls in tip-top health. Among the best things are mangels, turnips, Swiss chard, rape, kale, sprouted oats and even ensilage.

One of the best green foods which can be made available at any season, is sprouted oats. A pound of dry oats increases to three or four pounds when sprouted, and is highly palatable to the fowls and readily digested. A big advantage in sprouted oats is that it can be produced in a week's time, and it is not necessary to grow any special crops or provide frost-proof cellars or pits for the winter storage of bulky green stuff.

Sprouted oats can be fed to fowls of all ages, and for it they will turn away from almost any other food. For small chicks, it is better to chop the sprouts, but the adult fowls will enjoy tearing the matted oats apart and will clean up every particle of the roots as well as the sprouts.



Summer Conditions Realized in Winter when Green Food is Provided.

based on this assumption. Thousands of tons of potash and phosphorus salts have been applied to "raw" muck with no results.

To use the nitrogen in the muck, it must be made available. The muck must be in that ideal plastic condition which will support plant growth in order to make available the nitrogen in the muck. The muck has to develop those physical properties which form a proper home for plants, the muck must decay, the complex compounds in which the nitrogen is bound must be broken down, the unavailable nitrogen must be made available.

Many years ago, before bacteria and germs were ever heard of our forefathers knew that a soil, a "raw" soil, could be prepared by applying manure, which will communicate decomposition which will introduce decay into this muck and produce the ideal soil condition. Then, the beneficial soil germs can work and release the nitrogen in the muck. The experience of muck farmers has proved that some sort of organic fertilizer must be applied for the best results; barnyard manure, sheep manure, dried blood, blood and bone, fish tankage, are common examples. In addition to the value of the minerals these fertilizers contain they have this important effect of communicating decomposition. This matter of decomposition is an important effect of manure which has not been given con-

sideration in the discussion of either high land or muck land fertility.

It is particularly important on muck to a given area producing as good celery and cabbage trimmings applied. There are many instances of rotted sults as manure over a similar area. To get the best results we supplement this rotting with a proper balance of minerals. In looking for a fertilizer which has the minerals which muck lacks let us consider stock yard or farm manures. Barnyard manure that is properly stored and handled contains comparatively large quantities of potash. Since the beginning of the war manure from Chicago and Camp Custer has been indispensable in supplying potash for our muck. But muck is deficient in phosphoric acid. Manure does not contain the proper amount of phosphoric acid to balance up the nitrogen and potash it contains. Hence, to those who use barnyard manure we urge the application of acid phosphate. Our muck crop demonstrations this year showed clearly, by the increased yields of plots of manure and acid phosphate over manure alone, that the muck grower should plan to apply acid phosphate with manure.

We suggest as a complete fertilizer for muck, barnyard manure and acid phosphate. The amounts will vary with the type of farming. A proportion we have used successfully is two hundred pounds to five tons of manure.

Considering, of course, that barnyard manure is not always available, large growers have used other sources for potash. Since the beginning of the war, efforts have been made to obtain potash from other sources. I know of some growers who are using potash from sources which have developed in the country since this abnormal demand for potash has arisen. While acid phosphate is high it is still in reach of every grower.

Many commercial fertilizers carry the "decomposing" value which manure gives to the muck. Blood and bone, dry blood alone, fish tankage and similar organic fertilizers are effective in communicating this "rotting" and are similar to manure in this respect. To points of southern Michigan, manure, when brought from Chicago or Camp Custer is more desirable in price as compared with commercial fertilizer. In fact, at the present price paid for blood and bone, barnyard manure is worth at least five dollars per ton.

It is a significant fact that wherever manure or other organic fertilizers are used the muck seems to hold moisture and develops that ideal plastic condition which experienced muck growers have learned to associate with good muck soil. This is probably due to the decomposition caused by the organisms introduced by the manure and not to the addition of organic matter, as is the case on high land.

It is important to keep in mind that the nitrogen in the muck is not equally available at all times in the season. The release of the nitrogen in muck depends on how rapidly and efficiently the germs decompose the muck. These germs will not work when the soil is cold; they work best in the summer weather. Consequently, in the beginning of the season there is not enough nitrogen available for early sown crops to start well. For example, well rotted manure, dried blood, or fish tankage applied early for onions, especially when the spring is cool, will give marked results. In a warm spring when the germs get started early, the difference between fertilized and unfertilized muck will not be so marked.

Thus, the addition of a nitrogenous fertilizer in the fall on the side of the row for celery is valuable, particularly in a cool fall. This fall it was not necessary. But experienced growers will agree that a nitrogen fertilizer applied to our long season muck crops in the summer time is a waste of money. As a rule, the complete fertilizers for muck should have a small nitrogen content as compared to a high potash and phosphorus content.

This article does not take up the requirements for individual crops on muck; it is merely to give the grower an understanding as to the general principles underlying fertilizer practice on muck soils.

Suggestions for the Handy Man

AUTO-OPERATED SAUSAGE GRINDER.

HEREWITH is illustrated a neat contrivance which does away with the laborious work of grinding sausage meat by hand and which is operated by the power from an automobile. The sausage grinder used is just an ordinary small-sized grinder, such as is used on the farm, but it is operated at such a higher rate of speed than by hand that the meat of a 250-pound hog can be ground in a very short time. The plan of operation is very simple and the whole affair can be assembled or dissembled in a very few minutes.

The grinder is mounted on a ten-inch board with a wooden boxing on one end; it reaches across the back end of the car and is secured to the bed by a piece of small wire. The shaft is a piece of one-inch iron pipe to one end of which is attached the screw-shaft of the grinder. On the other end is attached the pulley which is set to come in line with the rear wheel of the car on that side. The pulley is seventeen inches in diameter with a face of four inches. A large pulley is needed to reduce the speed of the grinder.

To make the belt hold firmly an old casing is slipped over the tire of the wheel, and the wheel jacked up high enough to clear the ground well. The automobile is operated in high speed so that the engine runs at about the same speed as when the car is run-

ning fifteen miles an hour on the road. Care must be taken to remove all bones from the meat when preparing or there will be danger in breaking the grinder.

AN EFFICIENT RAT TRAP.

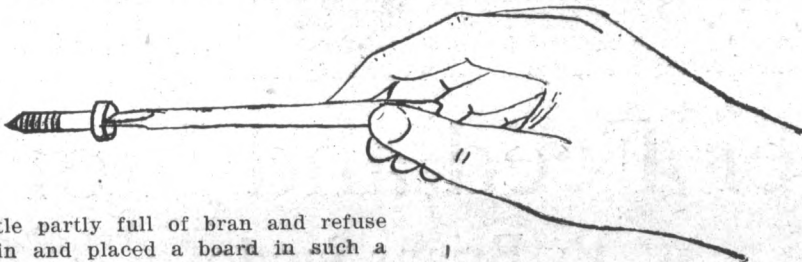
TO get rid of rats and mice a friend used the following plan which proved highly successful: He filled an iron

kettle partly full of bran and refuse grain and placed a board in such a way that the rats ran up it easily to the feed. He left this for several nights, then emptied the kettle of feed and substituted water to the same depth, disguised by a little bran sprinkled on top. This method effectually rid his barn of the pests.—H. L. S.

REPLACING DIFFICULT SCREWS.

ONE day on a certain machine which I was using, something went wrong, and I had to remove a particular part, to repair. This was easily done by removing a couple of screws which I reached with a screw driver. But, when I was ready to re-

place the part which I had mended, I found that I could not reach with my hand the place where the screws were to go in, as there were other parts in the way. I had no screw driver with any arrangement to hold screws on the end while replacing, and even if I had such, there were no openings large enough to allow anything larger than the screw driver blade to get through. The only way I could see to get what



I wanted in place and put the screws back, was to take apart a bunch of other parts. That would require much valuable time, and also work. Just then a neighbor of mine came along, and after telling him my predicament he said that he could easily put the screw in place. This is the way he did it:

He got a piece of wood shaped like a pencil. He whittled the end down until it was shaped like a screw driver. Excepting that it was much thicker. This he forced into the slot in the screw. The screw staid on, and then I easily put the screw into place, being careful not to touch it on any of the other parts while doing this, which

might knock it off the stick. Then I got it into place, I gave it a little turn to secure it, and then pulled the stick out. Then I turned the screw to place with screw driver.

GARAGE, WASH-ROOM AND LIGHTING PLANT IN ONE.

BY a little planning, the garage can be constructed in such a way as to serve a number of purposes very nicely with very little additional expense. The accompanying illustration of a concrete garage shows the handiwork of one of my neighbors. He made the blocks and built the garage himself during spare time so the actual cash outlay was very small. The garage is designed to house the automobile, the electric lighting plant and furnish a wash-room and store house. The wash-room is in the back end and has a cement floor with drain and tight inner wall so the steam will not injure the car. Underneath the garage is a good dry cemented basement room for the electric light plant and enough room for storage purposes.—P. H. E.

SAVING STEPS AND TIME.

A hose laid from the pump to the barn will carry water a lot easier than you can do it. Of course, a good pipe laid under ground out of the reach of frost, is best, but maybe we haven't the money we want to lay out for that just now, in which case the hose answers a good purpose, especially on a cold day.



Grinding Sausage Quickly and Efficiently with an Automobile.



Garage, Electric Light Plant, Wash Room and Store House.

Progressive Potato Growers

These Spud Farmers Simply Had Confidence That They Could Work Out Their Problems and Already Things are Coming Their Way.

By I. R. Walker, County Agent.



Dinner in the Field.

MARQUETTE county is a producer of Green Mountain potatoes. This came about after a strenuous campaign made through the efforts of the Farm Bureau.

Three years ago last July the county agent made a potato survey of the county. He visited one hundred fields to examine them for disease and varieties. He found every man growing several varieties. These varieties were quite badly mixed. Many farmers were interviewed who had paid as high as a dollar and a half a peck for fancy seed sold by some agent or seed house. Most of this so-called fancy seed proved to be a new name for an old variety, usually a Green Mountain or a Rural and most of the farmers were growing one or the other variety or both.

A County Potato Association was organized in August, 1915, with twenty-two members. Sixteen of these members had quarter-acre plots staked and inspected for disease and variety mixtures. The diseased hills and hills not true to type were either dug when inspected or staked and then dug before digging the whole plot. This plot served as a seed plot.

While the specialist from M. A. C. and the county agent were making these inspections, it was learned that the Green Mountain potato was in favor with the farmers and also that it was proving to be the best grower. Later it was found to be the best producer.

A meeting of the association was called and the members unanimously adopted the Green Mountain as the potato to specialize on in the county. During the spring of 1916, six boys' potato clubs were organized and these boys were persuaded to buy and grow Green Mountains. These boys were very successful. Their plots were all well taken care of and inspected several times during the year. Most of the tubers produced by the boys were sold to neighbors and friends for seed. Many more farmers grew Green Mountains in 1916 and fewer varieties were grown on a farm. Twenty-five seed plots were inspected. Diseased hills and those not true to type were treated as the previous year. In the spring of 1917 there was a great demand for

seed potatoes. The Green Mountains were recommended by the potato association. A number of farmers had No. 1 seed for sale and the Green Mountains spread from one side of the county to the other. Another method of dissemination was through the fourteen potato clubs organized.

From a comparatively few people growing the Green Mountain variety of potatoes in 1915, it has increased until at least seventy-five per cent of the potatoes grown in the county are of this variety, even the city gardeners are growing Green Mountains and pronouncing them O. K.

Last spring members of the association sold potatoes into seven counties of the upper peninsula and into several counties below the straits, besides two carloads into New York state.

The association has grown to thirty-seven members. Twenty-three members had their fields inspected this last season. Ten carloads of pure, clean No. 1 seed potatoes have been shipped into New York state and not a word of complaint has been received from the buyers. The producer has received twenty-five per cent more than the market price. Several carloads are still retained by the growers to be sold in the spring. More men are becoming interested in the potato association. More fields will be inspected next year and it is expected that we will have at least twenty-five carloads of pure, clean, Green Mountain seed potatoes for sale.

The soil and climate conditions seem to be just right to produce excellent crops of Green Mountain potatoes. It

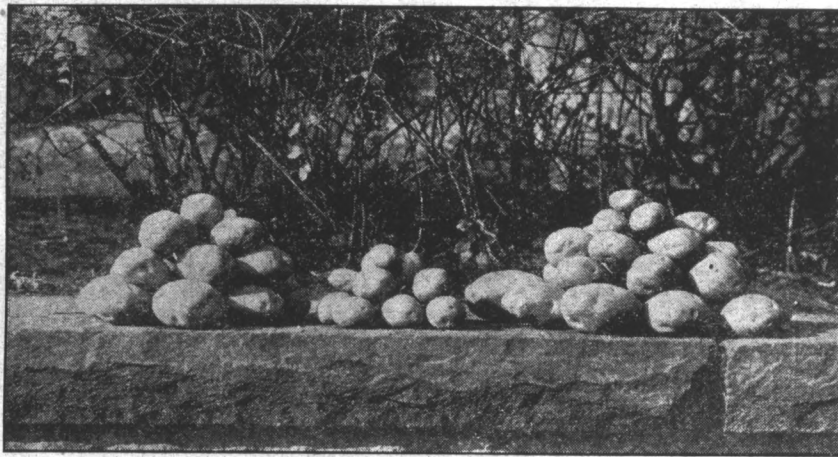
twenty bushels from 1.37 acres. In order to show how interested Mr. Olsen has become and how he can produce such a crop it will be necessary to give a little history.

In the spring of 1917 Mr. Olsen picked out a fairly good-sized potato, true to type and free from disease. He planted this as an experiment on his own initiative. He cut the tuber into eleven pieces and planted them into eleven hills. He dug a peck from the eleven hills and exhibited them at the Marquette County Fair. He had keen opposition but received first prize. He gave this peck away. He later dug two pecks more from the eleven hills. He planted the two pecks the last of May this year. They were frozen to the ground on the twenty-second of June but again came up. He dug enough in September to select a peck for the fair. He again received first prize and later dug sixteen bushels. He now has sixteen bushels of choice seed from the one tuber of last year. He has won two first prizes, had the potatoes frozen to the ground and given away two pecks, of the prize tubers and still has sixteen bushels. Mr. Olsen also tried another experiment on his own account. He saved several hills from his crop of 1917 and planted them by themselves in the middle of his field. The following results were obtained:

Hill Unit Work 1918.

Planted consecutively the tubers produced from one hill saved last year from good producing hills of type potatoes.

1. Unit (50 hills) proved to be all



Best Hill Yields 9 lbs.; Poorest 1.8 lbs. and Average 5.8 lbs.

is believed by the writer that the average yield for members of the association where they have had fields inspected and planted selected seed, has been over two hundred and fifty bushels to the acre.

One member, Rasmus Olsen of Sands township, produced five hundred and

Mosaic and yielded 107 pounds, or a yield of 2.14 pounds per hill.

2. Unit (69 hills) continuation of row one yielded 237 pounds, or 3.43 pounds per hill.

3. Unit (34 hills) alongside of row one yielded 98.5 pounds, or 2.9 pounds per hill.



Half Bushel from Five Hills.

4. Unit (49 hills) continuation of row two yielded 156.5 pounds, or 3.2 pounds per hill.

5. Unit (39 hills) row three, proved to be all Mosaic yielded 90.5 pounds, or 2.32 pounds per hill.

Comparisons of yields from best and poorest hills is interesting. Where the field is planted three feet by one and a half feet, there are 7,112 hills per acre.

Bu. per Acre.

Best yield 3.43 lbs. per hill.....406.5
Poorest yield 2.14 lbs. per hill....253.5

Difference153.0

The following shows the difference in yield between the hills not diseased and those affected:

Lbs.

Average of hills not diseased.....3.18
Average of hills diseased.....2.225

Difference955

If this average holds throughout the acre it would amount to 153 bushels. The best hill produced the largest total yield as well as largest average hill yield. The Mosaic seed produced mosaic potatoes and cut the yield. The five-hill unit results are placed in separate bags and will be further developed next year.

The writer assisted in getting the results from this field and being curious to know the weight of some of the hills picked up five hills from out of fifty dug, put them in a basket and weighed them. He found that the five hills tipped the scales at thirty pounds. One hill weighed 7.1 pounds.

Mr. Olsen believes in seed selection. Another man, John Kreiger, of Skandia, increased his crop the first year by seed plot selection just twenty-five per cent. His son produced the largest yield known in Michigan from his club plot in 1917, getting 142 bushels, or at the rate of 568 bushels per acre. This was from select seed.

Many others have received similar results and the neighbors have noticed it and are going into the same business of seed selection. Members of the Marquette County Potato Growers' Association have learned the value of seed selection and are now starting out in the seed potato business which we hope will mean a prosperous future for them.

How to Fertilize Your Muck Lands

Don't Handle Muck as You Would Upland--Says Ezra Levin, Muck Specialist

I WONDER how many homes, how many automobiles, how many years of college education for boys and girls, the fertilizer that has been wasted on muck lands of Michigan would have paid for?

What kind of fertilizer shall we use on muck? This question is being asked by growers and our answer is based on the experience of successful muck growers in this state, both truck and general muck farmers.

It is necessary to keep in mind that our muck soils are completely different

from our high land soils. Our high land soils, infertile sand or the black prairie are almost entirely mineral with a very small percentage of organic matter. The proper handling of these soils is almost all concerned with increasing the nitrogen and organic matter contents of the soil. On the other hand, our muck soils are largely composed of organic matter; minerals are usually deficient. Nitrogen is abundant and the problem is, to a great extent, one of keeping up the available mineral constituents of the

soil. Consequently, on the outset, we must recognize that we are dealing with a completely different soil.

The study of muck soil is a study of the origin of the plants and the nature of the decomposition in the formation of our swamp areas. The study of high land soils is concerned with an understanding of the origin and nature of the rocks from which the soil had been formed. High land and muck soils are completely different and must be studied from these different points of view. To understand a muck soil we

must know that it is made up of a large deposit of plant remains with the potash and phosphorus constituents washed out to a great extent, so that there is very little unavailable or available potash or phosphorus in these soils. In other words, it is actually deficient just exactly as nitrogen is a deficient in our upland soils.

Now it seems all that is necessary is to add potash and phosphorus salts to muck which has been drained and we should produce bumper crops. Many failures have been traced to practices

News of the Agricultural World

APPLES SELL WELL IN THE ENGLISH MARKETS.

CABLES received from Great Britain dealing with the first consignment of boxed apples that went across and which have been sold on the English markets showed that 29,198 boxes all sold at the maximum price fixed by the British government, regardless of quality and weight. The poor apples brought exactly the same prices as the very finest fruit, showing that the British public is hungry for our American fruit.

There have been frequent reports that a refund of seventy-five cents per box on the freight was coming and these reports appear to be well authenticated, but so far exporters have not got their hands on the coin and that is what counts. Without this refund it is practically a euphemism to say that no one will make any big money on the shipment regardless of the maximum price, but if the refund comes those who sent over the cheaper fruit, such as Watonsville Newtons, will make a reasonable profit.

There has been considerable misunderstanding with reference to the maximum net weight on which sales of American apples are made in the British markets. As a matter of fact, the sales are made on a package basis, namely nineteen shillings and nine pence maximum for boxes and sixty-seven shillings and eight pence maximum for barrels regardless of the net weight of the packages. Should a barrel or box weigh less than 130 pounds net and thirty-eight pounds net respectively the fruit would be sold on a pound basis but if the weight exceeds the figures given the sales would be made on a package basis with the limit as stated at sixty-seven shillings eight pence on barrels and nineteen shillings nine pence on boxes.

Apples which were shipped on the steamship Bohemia which sailed from Boston on December 5, with 8,539 boxes and 9,722 barrels, had all been disposed of at the maximum price.

BIG SALE OF RABBIT SKINS.

SIX million rabbit pelts were auctioned for approximately \$500,000 at a recent fur sale at St. Louis. The top price of the sale was \$2.10 a pound, the best lot averaging seven pelts to the pound.

The bulk of the rabbit skins sold came from New Zealand and Australia, less than two per cent being consigned by American shippers. R. S. Black, New Zealand, and L. A. Scandred, Sydney, represented the Australian shippers.

New York, Philadelphia and Milwaukee furriers and hat manufacturers were the principal buyers. The sale was considered successful and another large consignment is promised from Australia for next April.

This was the first big rabbit-skin sale held in this country. Heretofore London has been the selling market for Australian skins.

"There has not been a big rabbit-skin auction in London since early in 1914," said George B. Herzig, of New York, manager of the sale. "Prices realized at the St. Louis sale were entirely satisfactory to our Australian shippers. We believe we can retain this business in America."

PIG CLUB WINS A VICTORY.

TEN thousand dollars to the Red Cross and six hundred thousand pounds of pork for our soldiers overseas is what the Red Cross Pig Club, Carroll county, Miss., has contributed to the nation, according to a report received by the United States Department of Agriculture from O. F. Turner, county agent. The club has three thousand members, and will ship thirty cars of hogs to market. "No county in Mississippi," says the report, "has ever before seen such an array of porkers as we now have in Carroll. The whole county is spotted with hogs of the finest type. Red Cross pigs are on every hill and in every hollow. People who never had any confidence in such things before are studying feeds and using tankage and self-feeders. We have pigs that weigh four hundred pounds, with litter mates that won't weigh one hundred. Some of our hogs have gained one and eighteen pounds in one month."

ment of Agriculture from O. F. Turner, county agent. The club has three thousand members, and will ship thirty cars of hogs to market. "No county in Mississippi," says the report, "has ever before seen such an array of porkers as we now have in Carroll. The whole county is spotted with hogs of the finest type. Red Cross pigs are on every hill and in every hollow. People who never had any confidence in such things before are studying feeds and using tankage and self-feeders. We have pigs that weigh four hundred pounds, with litter mates that won't weigh one hundred. Some of our hogs have gained one and eighteen pounds in one month."

RECHICKENIZING FRANCE.

THE movement to restock France with good poultry is spreading rapidly. M. C. Kilpatrick, who has engaged in educational work in Ohio, has resigned his position to become a member of the Committee for Devastated France, and is heading the movement to raise funds with which to assist in restocking the farms of France. In some of the large American cities funds are being raised for this purpose. In Kansas City poultrymen are working to get together five hundred

good breeding pullets of the American varieties, all of which are being donated, to be sent to the people in France. In addition to France, other European countries, particularly Belgium, are in need of poultry for breeding purposes. The poultrymen of America must supply this stock. This foreign demand calls for still greater production on the farms and in the breeding yards of our poultrymen.

TRAINING MEN TO HANDLE TRACTORS AND TRUCKS.

TWO courses will be offered by the Michigan Agricultural College, the first from January 20 to February 14, and the second from February 17 to March 14. They will be similar and are arranged at different times to accommodate the convenience of the student and the facilities of the departments giving the courses.

The course is designed to train operators of farm tractors, gas engines and trucks. The requirements of farm conditions has guided in outlining the courses and will govern largely in their presentation. The work will be thorough enough to give a good understanding of the principles and mechanism of the machines studied and should enable the operator to make

adjustments and ordinary repairs with intelligence and confidence. No attempt will be made, however, to develop expert repair and service men in these courses.

DECLARES THAT LIME AND PHOSPHATES WOULD HELP SOILS.

MICHIGAN farms generally could be improved considerably by the judicious use of lime and phosphates, according to Dr. M. M. McCool, head of the Department of Soils at M. A. C. "The results obtained from the proper use of lime and phosphates in Michigan have been such," he says, "as to force the conclusion that a much greater tonnage of lime can be used, and that when acid phosphate can be purchased at normal figures, a half-million tons more than is at present employed could be applied with profit to Michigan farms."

Where farmers are in doubt as to whether lime or phosphates would help their farms, the Department of Farm Crops of M. A. C. is inviting them to send samples of their soil to East Lansing, for free analysis. Reports obtained by the college from farmers who have submitted samples of their soil for analysis, and then have adopted such corrective measures as were suggested, tell of much success in improving the yielding power of their land. These increased have amounted to from ten to one hundred per cent.

RADISH GROWERS' PROBLEMS.

ON account of the many complaints made by growers of radish seed of the unfair dealing of the seed companies for whom they raised radish seed this year, it is the plan of the Farm Bureau of Antrim county to take this matter up with the growers.

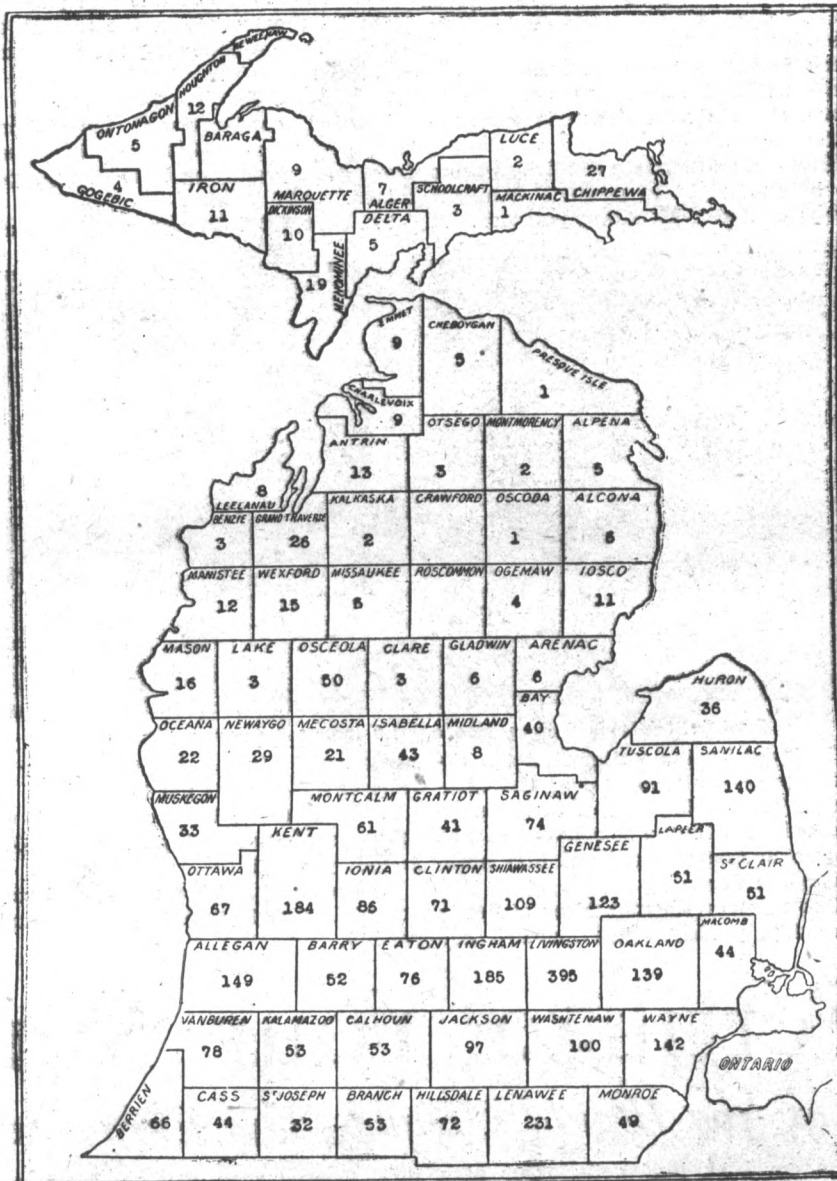
The plan is to hold meetings in the different sections of the county where radish seed is grown and place an organized plan before the growers. This plan will constitute the organizing of the growers and their agreement not to raise radish seed for any company that will not receive, test and pay for the radish seed delivered at the grower's station here in Antrim county.

Any seed company who is dealing fair with the farmers would not object to settling with the growers for their seed upon delivery at the railroad station. In this way, should there be any dispute as to test or weight, the grower would still have the seed under his control and would be able to make a satisfactory settlement at that time.

PRICE OF SPRAYING MATERIALS.

CHEMICAL advice has been given by the United States Department of Agriculture to the Food Administration, and much valuable data have been supplied to it relative to manufacturers engaged in making certain types of insecticides and the importance or non-importance of various insecticidal materials. A representative of the Insecticide and Fungicide Board has attended several conferences between the Food Administration and manufacturers and has been able to supply data of value. As a result of the activities of the Food Administration, assisted by the department, the price of arsenic asked by the producer has been reduced from twelve and sixteen cents to nine cents for carload lots and nine and a half cents for shipments less than a carload. This presumably will lead to a reduction in the price of Paris green, lead arsenate, and other arsenical insecticides to the consumer, says the Department of Agriculture in a statement made public recently.

Pure-Bred Cattle Herds in Michigan



THE above map shows the number of herds of registered cattle in Michigan. Today more attention is given to breeding and raising better live stock than ever before. A constantly increasing demand for this class of animals from breeders in other regions means that the future of the state as a breeding ground for improved live stock is assured.

Livingston county, Michigan, ranks second among the counties of the nation in the number and size of its herds of pure-bred dairy cattle. This one county contains more than 220 herds of pure-bred Holstein-Friesian cattle. In the past year carloads of Livingston county's famous black-and-white cattle have been shipped to Pennsylvania, Delaware, Maryland, Georgia, Alabama, Texas, Oklahoma, Kansas, Colorado, Nebraska, Illinois, Indiana and Ohio.

Saving What We Raise

After Crops are Grown it is Often Difficult to Make Them Ready for Use.—By J. H. Brown.

THRESHED your sorghum yet?" patch faithfully and insisted it was "No, I hain't. And more'n that, nothing but corn. But when the tops I don't know where in sam hill matured and no ears formed amidst to take the stuff to get the job done." they were thoroughly convinced it was something different. And when it was "How big a patch of sorghum did you raise this year?" ready to load up for the first trip to the sorghum thresher over in Toad

"Oh, about a quarter of an acre. My wife stuck to me last spring to plant a piece of ground to sorghum so as to help out with the scarcity of sweetening. Our sugar allowance was so small with his sorghum thresher the same as all summer that we laid great hopes Bert Rork comes here to thresh wheat and oats?" inquired Mary Parsons of her father while she was helping load up the first wagon.

"Why don't Bill Burns go around with his sorghum thresher the same as Bert Rork comes here to thresh wheat and oats?" inquired Mary Parsons of her father while she was helping load up the first wagon. "Oh, it's a sort of stationary outfit, somewhat like a cider mill, and it wouldn't pay to move it around very much, especially these days," replied Mr. Parsons.

How different conditions are now from what they were forty years ago or more. We can remember when



The Sorghum Mill Over on the Other Side of Toad Hollow.

side of Toad Hollow. I was by there yesterday and Bill Burns was running his mill to beat the band. There were piles and piles of sorghum corded up all around the crusher and crushed stalks laid around everywhere. Bill even used the stuff to make a shelter over his crushing machine."

"But it's a long ways to haul my sorghum from here to Toad Hollow. It must be fourteen miles, if not more." Hank Parsons thoughtfully scratched his head a minute, and said: "I might as well get at it and have the pesky job done with. I reckon there will be about six loads to haul and it will take a week's work to get the cane to mill and the sorghum back home. I'll get my son-in-law to take his team and we can haul two loads a day, easy, as more than half the way is over state reward graveled road."

But it was quite a stunt for the Hank Parsons' family. The wife and children helped strip the sorghum, top it, cut it down and tie into bundles with binder twine. The boys and girls never saw sorghum until this season. They watched it growing and tended the

sorghum patches were common on nearly every farm in this section of Michigan. The sorghum and cider mills had all they could do for weeks in the late fall and sometimes into the middle of December. The cane was crushed between heavy rollers and the juice boiled until much of the water was evaporated and the syrup quite thick. The accompanying picture illustrates the modern method of crushing the cane. We have, so far, been unable to obtain any pictures of the old-time sorghum mills that were common hereabouts.

The writer will never forget going with his father to a neighborhood sorghum mill on a big load of canes when he was a little boy. When we got there we found much excitement because the owner's oldest son had run his hand and arm between the crusher rolls. The arm had to be amputated close to the shoulder. For a long time after that we could hardly bear the taste of sorghum on pancakes.

While driving out a few weeks ago and looking for a sorghum mill to take (Continued on page 28).



The Brake Lining with the Silver Edge

Raybestos on your brakes means efficient brake action plus economy. Raybestos is guaranteed to wear at least **one** year—definitely, positively guaranteed. You know exactly what to expect in service and saving. Why buy "cheap" brake lining, without a guarantee? Be certain about the brakes. Be sure that your investment returns 100%. Get Raybestos—edged with silver.

For FORD Cars

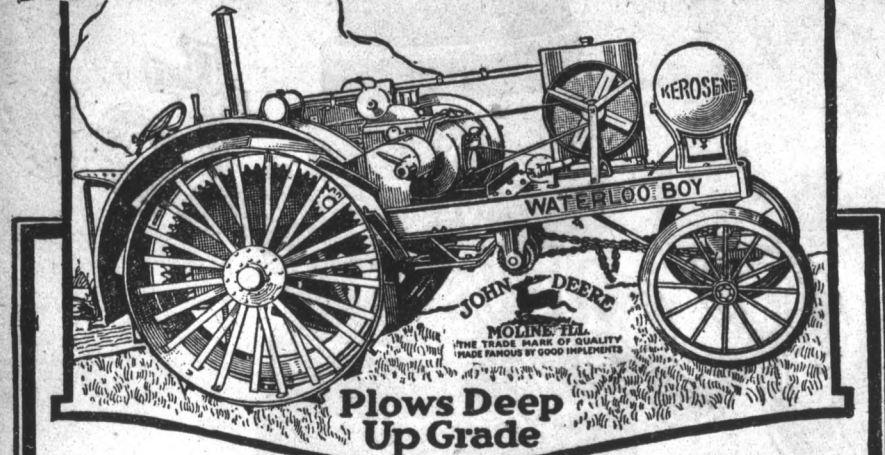
Use Raybestos (without wire) for transmission. We also make Raybestos Rolled Steel Cam Brakes—fit drums now on your car: Supporting fixtures, pull-rod and clip included.

If there's anything you want to know about brakes-- write us.

THE RAYBESTOS COMPANY
Bridgeport, Connecticut.

Guaranteed to Wear One Year

THE LEADING 3 PLOW TRACTOR



WATERLOO BOY ORIGINAL KEROSENE TRACTOR

"In old timothy sod I pulled three 14-inch bottoms at an average depth of six inches, some of the time up a pretty steep grade. In stubble I pulled the same plows at an average depth of eight inches."—Geo. W. Lee, Gladstone, N. J.

Waterloo Boy reserve power insures a smooth, even job of plowing in rolling land or varying soil conditions. Its two-speed motor, 2 1/4 and 3 miles per hour, enables you to turn the furrow at varying speed for best results in any kind of soil; quick change of speed and 12-foot turning radius permits close work in irregular fields and at corners.

The Tractor That Pays Its Way

because it is the right size for the widest range of profitable operation—supplies ample power for the heavy work, economical power for the lighter work—available for all work. Many Waterloo Boy owners are keeping their tractors busy most of the year—at draw bar or belt.

Simplified construction makes it easy to operate; equipped with Hyatt roller bearings, dependable ignition device, patented fuel saving kerosene burner, automatic lubricating system and other features which insure many years' service at minimum up-keep cost.

Our illustrated catalog, sent free on request, gives full information with many views showing Waterloo Boy efficiency on farms. Write for it

JOHN DEERE, 4607 W. Third Ave., Moline, Illinois



Care of Spraying Equipment

By R. G. KIRBY

IN preparing the spraying equipment much will be gained by starting early in the season with the idea of having everything ready when the day for the first application arrives. An order for equipment or repairs should be placed several weeks before the first spraying for scale. At that time the power sprayer needs a thorough overhauling to follow up the careful cleaning it has had or ought to have had in the fall.

Clean up the engine and test the battery cells as there is nothing more unsatisfactory than the engine with a faulty ignition system when the weather is right for spraying. A battery tester is a handy device for the tool box. When there is a broken piston ring or leaks exist, the engine will lose in power. Occasionally the valves must be reground to make them fit tightly. The timing apparatus may allow the spark to flash at the wrong time and this will cause back-firing. Carburettor troubles cause many delays in spraying an orchard.

If there is an improper mixture of the gas and air, the explosion will fail or not have sufficient power. Often to insure an abundant supply of lubricating oil the operator may put too much in the cylinder. Carbon deposits result and this reduces the power of the engine. In general the directions accompanying an engine should be followed to the letter. If a large orchard is to be sprayed and there is doubt as to the condition of the engine it is best to have it overhauled by an experienced repair man who can find the faults and remedy them.

One of the factors in successful spraying is doing everything at the right time and usually the right time lasts none too long to finish the work when the equipment is in the best of condition. Often an inexperienced worker with a gas engine will have good success for several years, simply by accepting the machine as it comes from the makers and following directions without any tinkering or needless experiments.

Solutions Rot Rubber.

The chemical mixtures necessary in spraying usually cause rubber to rot or to become hard. The pump and the hose must be thoroughly flushed out at the close of each day's work, for if the sediment dries on the valves it will cause them to adhere. When the bottom of the spray tank is not thoroughly cleaned the material which accumulates will soon clog the hose or the nozzles. When a tank filler is used special care must be taken to keep dirt and fine rubbish from being drawn into the tank. A good tank filler saves much time in filling the tank with water.

A long length of first-class hose is an economy because of the action of the spray chemical which soon destroys cheap hose, and because the long hose enables the worker to keep far enough behind the wagon to do good work. Spray nozzles that are light and simple in construction will close less frequently than more elaborate makes. The angle nozzles enable the operator to easily direct the spray with a turn of the wrist. This is very important when spraying large trees as the operator must get in under the branches and be sure to hit all sides of every limb with the fine mist.

The hose and the equipment will soon become covered with the spraying solution on the outside from the mist which falls from the trees. The hose

which has been dragged through the grass sprinkled with the spraying solution will soon rot, become hard and brittle, if it is not given a thorough cleaning before being stored.

THE VALUE OF MANURE.

What is the cash value of well rotted manure, by the manure spreader load, allowing seventy bushels for a load? This being well rotted stable manure.

W. S. R.

On account of fluctuating prices of commercial plant foods and the scarcity of potassium in all commercial fertilizer mixtures it is difficult to give accurate figures. At present prices of purchased plant foods, good manure has a value of at least \$4.00 per ton, and this value for crop production may be increased fifty per cent by the use of proper supplements, such as ground rock phosphate or acid phosphate. These figures do not take into account the cost of hauling and spreading the manure.

W. M. K.

HOW TO ERADICATE QUACK GRASS.

Will you please advise me how to destroy quack grass?

Sanilac Co.

M. F.

Quack grass sprouts by an underground root stalk that runs along under the ground and at every joint a sprout may come up and grow. When you cut this off you don't injure the underground root stalk much; it keeps on growing and producing new plants, consequently it is something of a job to eradicate it, but it can be done.

If you only have a small patch of quack grass, the best way would be to dig it out, root and branch. This can be done with a root hook like a potato hook. Take out all of the root stalks and they can be burned or laid to dry up and be destroyed. Or with only a small patch they can be covered deeply with anything that will smother them. Plant to potatoes next year and then cover six or eight inches deep with straw. This will smother the quack grass and allow you to produce a crop of potatoes which will come up through the straw.

If you have a large area of quack grass it is not practical to destroy it in either of these ways. Thorough cultivation will destroy any plant, consequently if we can keep the land well cultivated it will die. These underground root stalks possess great vitality and cutting off the sprouts alone once or twice will not destroy them, but if you keep it up for one season there won't be much quack left. People who practice this system of eradication do not do it thoroughly enough; they allow some plants to live and develop underground root systems and have quack grass with them again.

If you will plow this fall two or three inches deep, many of these roots will freeze during the winter. Next spring you can either summer fallow or plant it to some hoed crop, like sugar beets, beans, corn or potatoes. I would plow it again in the spring a little deeper and give it such thorough cultivation that no quack grass is allowed to breathe above ground. You cannot accomplish this with a cultivator alone; you must follow the cultivator with a hoe and take every plant that the cultivator leaves. Do not allow the plants to remain long above ground before they are cut off, because this keeps the underground root stalk alive. Persistence in cultivation will eradicate quack grass.

C. C. L.

SPRAYING

MEANS
Prevention
OF
Food Famine.



SPRAYING MATERIALS

Every dollar you spend for spraying is an investment to be realized in better crops. You cannot make poor investments

and expect profitable returns.

WE MANUFACTURE—CONSEQUENTLY OUR
GUARANTEE STANDS FOR SOMETHING

Bordeaux Mixture
(Paste & Powder)
Arsenate of Lead
(Paste & Powder)

Vitriol
(Bordo-Lead of
highest analysis)
Fish Oil Soap

Calcium Arsenate
(A most efficient poison
for the Least Expense)
PARIS GREEN

Blue Vitriol
Egg Preserver
(Water Glass)

Write for literature and don't overlook the fact that our DUSTING MACHINE relieves a considerable part of your spraying labor problem.
Fertilizers—Fertilizer Materials—Stock & Poultry Feeds. Write for our Dealer proposition to Dept. M. F.

BRANCHES:
Columbus,
Norfolk,
Jacksonville,
New Orleans,

Ohio
V.
Fla.
La.

NITRATE

AGENCIES

HOME OFFICE
85 Water Street,
N. Y. City
Factory, Brooklyn, N. Y.

COMPANY

Thousands of Kirsins Now in Use!

Write for New FREE Book!

Write for Special Agent's Offer!

do the hardest work easier and quicker. If satisfied, keep Puller. If not pleased, return at our expense, you don't risk a penny. Four easy ways to pay.

**Try It 30 Days Free
Send No Money**

**One Man Alone
Handles Biggest Stumps!**

To prove the Kirsin is the most powerful, speedy and efficient Stump Puller, we will ship you any size or style on 30 Days' Free Trial. Send no money. When Puller comes, try it on your own stumps—give it every severe test—let it prove that it will return at our expense, you don't risk a penny. Four easy ways to pay.

Kirsin ONE-MAN Stump Puller

Operates on wonderful leverage principle. One man alone handles and operates. Just a few pounds on the handle means tons on the stump. When stump starts throw machine into high speed and out comes the stump, roots and all. Positively no other machine like it. Send for most valuable Stump Puller Book ever published—pictures, prices, terms—and our Special Agent's Proposition—all FREE. Write today. One-man style or HORSE POWER, all sizes. 3-year guarantee with each machine. Shipment from nearest distributing point saves time and freight! Low prices now. Write for FREE BOOK, etc. TODAY!

A. J. KIRSTIN CO., 322 Lud Street, Escanaba, Mich.

World's Largest Makers of Stump Pullers!

Quick Shipment From:
Escanaba, Mich.
Atlanta, Ga.
Portland, Ore.
Soo, Canada

What 15¢ will 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.

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 15¢ to show that you might like such a paper, and we will send the Pathfinder on probation 13 weeks. The 15¢ does not repay us; we are glad to invest in new friends.

The matter of 15¢ 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 28th 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 paper.

The Pathfinder, Box 78, Washington, D. C.

When Writing to advertisers please mention The Michigan Farmer.

Lillie Farmstead Notes

LAST spring I was very anxious and worried some about the labor problem. We wanted to produce more food if possible, and yet there seemed to be a shortage of labor and I was fearful that it would be impossible to take care of the crops and harvest them without considerable loss, but it proved that the anxiety that I felt was uncalled for, nature helped out remarkably by having a dry season. The same number of men could do more this year than they could last because they could work every day. A year ago, for days nothing could be done on account of the wet weather. This year we had to utilize the help of some small boys and some old men part of the time, but we got the crops all harvested without loss. Of course, our own threshing machine helped out very materially because we could thresh with less than a full gang, and the weather was so favorable that we got all the threshing done without any loss whatever.

This dry weather had its disadvantages, however. The corn didn't make a normal growth. If we could have had one good, soaking rain in July, I probably would have been a thousand dollars ahead on the corn crop. The lima beans also were a failure, but outside of that the crops this year were fully as good, if not better, than normal. I never saw a wheat crop turn out better from its appearance in the spring than the wheat crop this year. I can hardly understand where all the wheat came from, because it was very thin on the ground, on one large field particularly, and yet we had a very good yield of wheat and it was of a splendid quality. Our clover hay this year was the best we have raised in years. We have to cut the clover hay early and cock it up and haul it in the best we can, because the pea harvest comes right along with the clover hay. Here again, we were very much favored by the season and while this hay had to remain a long time in the cock, none of it was injured by the rain and we have the greatest quantity and the best quality of hay in my recollection.

The dry weather, of course, cut down the pasture very materially. The consequence is that our young cattle are not in as good shape as they usually are and it will take more food this winter to get them back into condition than it would in a normal season, but when we consider how the season favored us with other work, we are not disposed to find very much fault with the weather the past year.

All the straw, wheat, barley and oats was of excellent quality. We succeeded in getting every bit of it under cover and we are making the cows eat one feed of straw a day, also the horses and young cattle. This will help out the hay. Not only that, but the animals don't seem to object to a feed of straw once a day. At the present price of straw it is not a very cheap food. Some of my neighbors have been selling their straw in Grand Rapids for \$16 a ton, which is more than good hay ordinarily brings, and yet, when hay is worth from \$28 to \$32 a ton, one feels that he is economizing some if he can get the animals to eat a feed of straw a day.

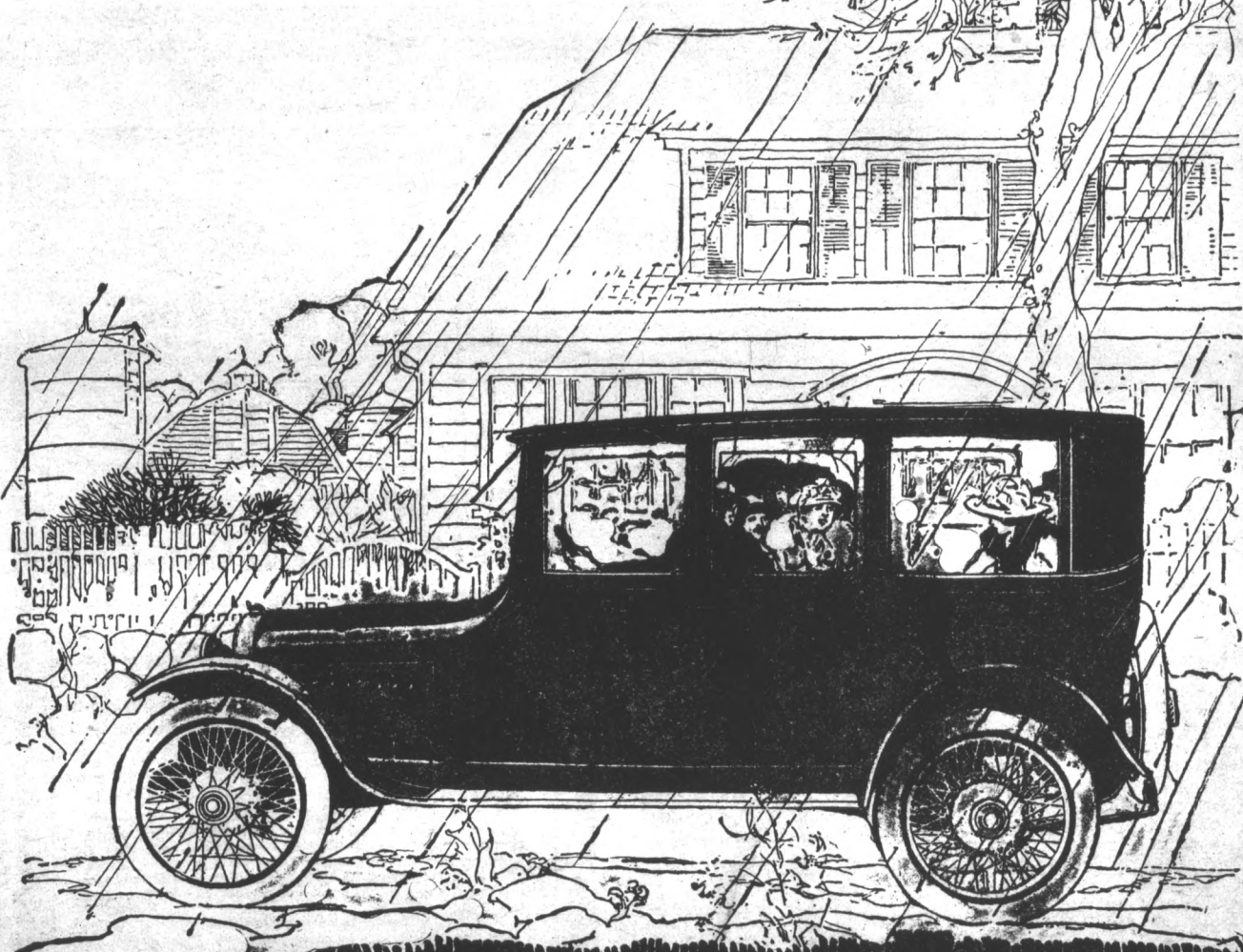
Our oat crop was of excellent quality and a good, fair yield. We are feeding the cows ground oats and a little oil meal. They also get pea vine silage and clover hay besides the feed of straw. They are doing fairly well with this feed. The extra quality of the hay this year I figure takes the place of some grain. We are in hopes if we take advantage of everything we can to make the cows to pay out even, though the price of all kinds of food is extremely high.

In no small measure is the present high esteem enjoyed by the Oakland Sensible Six due to the American farmer. Brought to this car early in its career by his desire to possess something better, it has been the farmer who has put it to the most strenuous and varied usage, demonstrating most spectacularly its capacity for continuous and economical service. In return the Oakland Sensible Six has everywhere well repaid the farmer, by a measure of usefulness and constancy not outdone by any other mechanism within his experience. Over the roughest roads, throughout the severest weather and under the hardest conditions, it has carried him and his in comfort and safety wherever business or pleasure has commanded.

There is no other type of vehicle so comfortable or convenient as the Oakland Sensible Six Sedan. Powered with the famous 44-horse-power overhead-valve Oakland engine, it is from 300 to 500 pounds lighter than comparable closed cars, and it returns mileages of from 18 to 25 per gallon of gasoline and from 8,000 to 12,000 on tires.

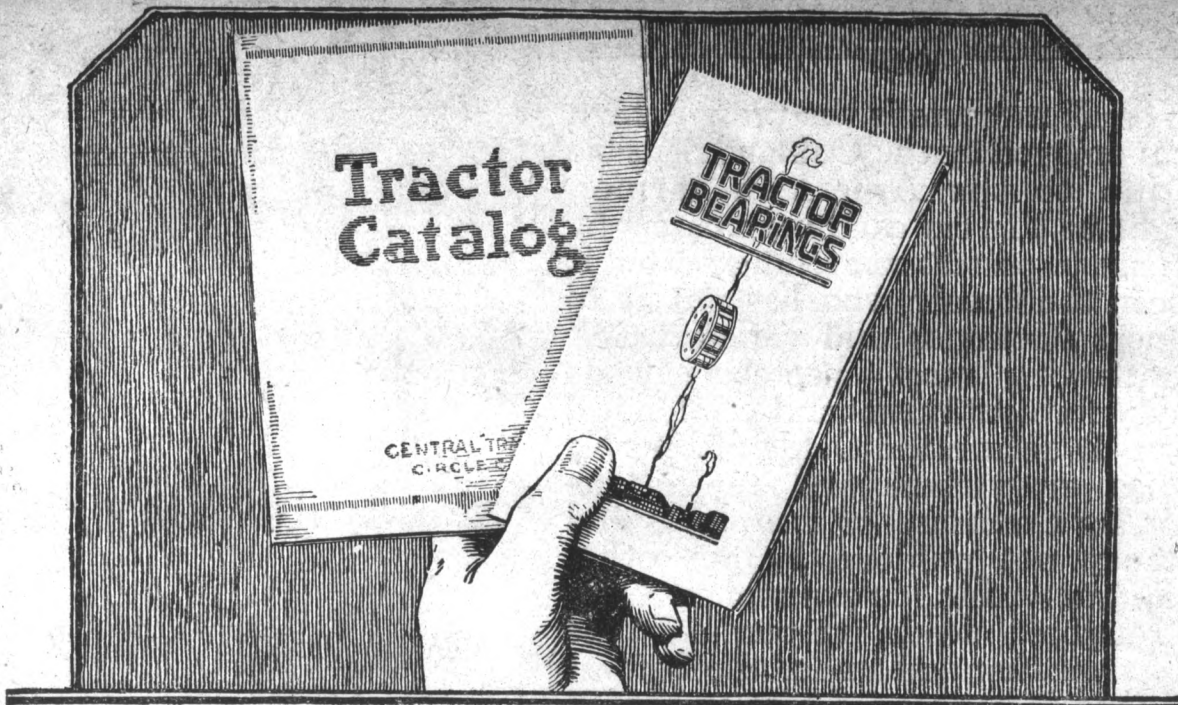
OAKLAND MOTOR CAR CO. Pontiac, Mich.

Touring Car, \$1075; Roadster, \$1075; Sedan, \$1650; Coupé, \$1650.
F.O.B. Pontiac, Mich. Additional for wire wheel equipment, \$75.00



OAKLAND

SENSIBLE SIX



Send for BOTH Booklets

Send for both booklets—the booklet about bearings in addition to the catalog of the tractor you are interested in. The bearings in the tractor are its very foundation. They protect shafts and axles from wear and destruction; they add greatly to the life and dependability of the tractor; they save valuable time by doing away with the necessity for constant oiling; they eliminate friction and enable the tractor motor to deliver more power where you want it—at the drawbar and belt; they save fuel and make for cheaper cost of operation and upkeep.

By all means send for both booklets—get not only the catalog from the manufacturer of whatever tractor you may be interested in, but also the Hyatt booklet entitled "Tractor Bearings." Write to the

HYATT ROLLER BEARING COMPANY, TRACTOR BEARINGS DIVISION, Chicago, Ill.
Motor Bearings Division, Detroit, Mich. Industrial Bearings Division, New York City

HYATT

ROLLER BEARINGS



BEST FOR THE READER
THEREFORE
BEST FOR THE ADVERTISER

Michigan Farmer, Detroit, Mich. (Rate 45c per line.)	Guaranteed Circulation	Rate Per Agate Line
Ohio Farmer, Cleveland, Ohio, (Rate 65c per line.)	260,000	\$1.30
Pennsylvania Farmer Philadelphia, Pa. (Rate 35c per line.)		
The Progressive Farmer	180,063	.90
Birmingham—Raleigh Dallas—Memphis		
Breeder's Gazette, Chicago, Ill.	90,000	.70
Prairie Farmer	113,500	.60
Chicago		
Hoard's Dairyman, St. Atkinson, Wis.	72,138	.60
Wisconsin Agri- culturist, Racine, Wis.	62,000	.35
The Farmer, St. Paul, Minn.	140,000	.70
The Farmer's Wife	750,000	3.00
St. Paul, Minn.		
Wallace's Farmer, Des Moines, Ia.	71,000	.45
Pacific Rural Press	28,689	.17
San Francisco, Cal.		
	1,767,390	\$8.77

These publications are conceded to be the authoritative farm papers of their individual fields. For further information address

STANDARD FARM PAPERS, Inc.
Western Representative, 1341 Conway Bldg.,
CHICAGO, ILL.

WALLACE C. RICHARDSON, Inc.
Eastern Representative, 381 Fourth Ave.
NEW YORK CITY.

Mention The Michigan Farmer When Writing Advertisers



The time-tried piston ring

McQUAY-NORRIS LEAK-PROOF PISTON RINGS

**Increase Power—Decrease Carbon
—Save Gas**

For eight years these rings have stood the test—made good.

By creating uniform pressure on the cylinder walls, McQuay-Norris LEAK-PROOF Piston Rings stop piston ring leakage, increase power, decrease carbon and save fuel and oil.

Wherever you are you can get McQuay-Norris LEAK-PROOF Piston Rings to fit any car, truck and tractor. Jobbers in over 300 distributing points carry complete stocks of sizes and over-sizes. Many thousands of dealers can extend to you our service, which enables them to specify your size requirements for practically every make or model of motor without delay.

Send for Free Booklet

"To Have and to Hold Power"—a simple, clear explanation of piston rings, their construction and operation.

Manufactured by

McQuay-Norris Manufacturing Co.
2877 Locust St. St. Louis, U. S. A.

McQUAY-NORRIS Superoyle RINGS

A special ring for engines that pump oil. Used in top groove only of pistons to control excess oil, with McQuay-Norris LEAK-PROOF Rings in lower grooves to insure maximum compression and fuel economy.



USE NATCO DRAIN TILE

Farm drainage demands durable tile. Our drain tile are made of the best Ohio clay, thoroughly hard burned—everlasting. You don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. We are also manufacturers of the famous NATCO Silo, NATCO Corn Crib, NATCO Building Tile and NATCO Sewer Pipe. Send for the new edition of our book, "Natco on the Farm".

National Fire Proofing Company,

1115 Fulton Building, Pittsburgh, Pa.



**DON'T LET GRASSHOPPERS GET
THE JUMP ON YOU.**

THERE is no reason why farmers should allow their crops to be destroyed by grasshoppers, as, by the use of Paris green bran-mash compound the grasshoppers can be effectively controlled.

The following formula for poisoned bran-mash is highly recommended, and has given excellent results wherever it has been used:

Paris green, 3 pounds; bran, fifty pounds; syrup (cheap grade), one gallon; water, five gallons; lemons, ten.

Mix thoroughly the bran and Paris green while dry; dissolve the syrup in the water, squeeze the lemons into this and finely chop the peel and pulp and add them also; then pour this mixture into the bran and Paris green and stir so as to dampen the mash thoroughly. Then sow broadcast as thinly as possible where the hoppers are abundant, especially along ditch banks and above the borders of the field. The above amount will usually cover six acres of ground if properly applied. White arsenic may be used in place of the Paris green when it can be obtained. Never distribute the poisoned bran in handfuls, or masses of any kind.

COLD WEATHER MOTORING.

WE have found that our car can be used to advantage during the winter even when there is considerable snow on the ground. We use four chains on the wheels when the ice and snow make skidding dangerous, and have had no trouble in traveling over the frozen roads. After a heavy snow when the teams have broken a track we find that riding over the snow is often smoother than during the summer. The snow packs firmly into the ruts and makes a solid track for the wheels of the car.

To prevent the radiator from freezing, some farmers use kerosene and others buy commercial anti-freeze mixtures. We have found that kerosene oil is not good for the cooling system. A cold engine is hard to start so we fill the radiator with hot water whenever the car is used and then empty out the water on returning to the farm. This saves wear on the cooling system and makes starting easy. The radiator can be covered with the auto blankets when the machine is stopped for an hour or more and this will prevent freezing. If the car is allowed to stand during extremely cold weather it will be safest to empty the radiator unless the stop is a short one. This is rather inconvenient but the satisfaction of using the car in winter more than makes up for the trouble.

When traveling on drifted roads it pays to have a scoop shovel in the back of the car during the winter for a trip that would otherwise prove impossible. R. G. K.

THE COW AND THE MAN.

A cow that is all the time kicking up a muss in the barnyard might better walk the plank right straight. The room of such a cow is much better than her company.

I have seen a herd of cows gain just about one-fourth in the quantity of milk they gave after certain milkers were replaced. It takes a good, kind, patient man to milk a cow right. Only such ought to be set at that job.

We hear it said that there are too few cows in this country. Maybe so, but it is a fact that there are altogether too many that are slackers. Every last one of such cows should go, and go now.



A BALANCED RATION FOR COWS.

Can you give me a balanced ration for my cows? I have alfalfa hay, corn stover put into the silo, containing little corn, but cured out nicely, cottonseed meal, 36 per cent protein, oats, corn, barley and bran.

Eaton Co.

J. A. M.

Alfalfa hay and corn stover silage furnish very good roughage for dairy cows. You should feed more grain with stover roughage than with silage made from the whole corn plant. I would want to feed as much corn meal at least as would be furnished if all the corn had been on the stalks put into the silo.

I would recommend as a grain ration two pounds of cottonseed meal per day for each cow, feeding a pound night and morning on the corn silage. In addition, I would grind corn and oats equal parts by weight, or corn and barley equal parts by weight, and mix them equal parts by weight with bran. Now feed enough of this mixture of grain, together with two pounds of cottonseed meal to furnish a pound of grain per day for each cow for every three pounds of milk produced in a day if the milk is richer than four per cent. If it is less than four per cent milk then one pound of grain per day for every four pounds of milk produced will make a splendid ration. C. C. L.

DISCUSSING THE MILK YIELD.

I have just started to work on a dairy farm, which is run by a lady, and do not feel satisfied with the present production of milk, and would like any suggestions you could give to help increase the supply. Now, we are feeding clover hay and silage for roughage. The hay is not extra good, however, but the silage is in fine condition, the corn being cut in good shape and gotten in green, but there is very little corn itself in it. For grain we are feeding bran and cottonseed meal in the proportion of one of the meal to two of the bran. We figure on feeding about thirty pounds of roughage per day for each milking cow. We feed about six quarts of grain per cow per day, the weight of which I have not determined as the grain is not what I should use if I were running a dairy. However, the cows look good and eat well, but there is not enough milk to my way of thinking. Is there a better grain ration at as low, or very little greater, cost?

Oakland Co.

G. P.

This ration ought to produce a good flow of milk. The ingredients are all good dairy feeds. If I were to criticize I would say that you are feeding too much cottonseed meal in proportion to the bran and yet I know that in the hands of a careful and skillful feeder who gradually increases the cottonseed meal in the ration that probably no harm would result. I would prefer, however, to limit each cow to two pounds of cottonseed meal each day—no more, and I would suggest that you feed cornmeal and bran, equal parts by weight, then you will have sufficient protein in the ration. You cannot tell very much about a ration when you estimate in quarts; it ought to be by pounds. I would suggest that you feed two pounds of cottonseed meal, one pound night and morning, on the ensilage, then in addition you feed a sufficient amount of the cornmeal and bran so that each cow gets a pound of grain per day for every four pounds of milk produced if the milk is less than four per cent milk. If it is more than four per cent milk, the cattle should have a pound of grain for every three pounds of milk produced.

C. C. L.

It pays better to drain the cow yard than to stand loss of calves through the mother slipping while she is carrying them.

"BEATS ANYTHING FOR CULTIVATING I EVER SAW"



It's Easy and Practical

"I was agreeably surprised at the ease with which we could cultivate corn with the Moline-Universal," says Miles Kinnick of Adel, Iowa. This is the usual expression from every one who has used the Moline-Universal for cultivating.

The Moline-Universal Tractor straddles the corn row and has as much clearance as the ordinary cultivator, so corn can be cultivated in all stages of growth. The tractor is attached to the cultivator and forms one complete unit—the tractor the front wheels and the cultivator the rear wheels. The operator sits on the cultivator on line with the right drive wheel of the tractor, where he has a clear, unobstructed view of the row ahead. This is of the utmost importance for good work.

In cultivating, you follow the same rows as planted by a two-row planter. As hills in these rows are exactly the same distance apart, only one row need be watched.

The Tractor is easily held to its position, and by keeping the right drive wheel, which is in line with the operator's eyes, a certain distance from the outside corn row, the only other attention the outfit needs is an occasional shifting of the gangs by the operator's feet.

The cultivator is extra heavy and holds to its work when the cultivator gangs are shifted. The electrical governor control within easy reach of the operator enables the tractor to be slowed down to as low as one-half mile per hour.

Injures Less Corn Than Horses

By using care in turning at the ends of the rows less corn will be injured than with horses.

"I have often, without hesitation, angled into position and proceeded toward the other end of the field without hitting a hill," says W. A. Marker of Van Wert, Ohio, who owns a Moline-Universal cultivating outfit and farmed 80 acres with it, living in town 8 miles away, devoting part of his time to other work. He goes on to say: "Practice soon will make you expert if you will but consistently study the game."

"This cultivator, I feel, more than paid for itself the first season through increased yield due to timely cultivation."

"There is nothing that will beat the Moline-Universal Tractor. It will work wherever hitched. For plowing and discing it is fine; beats anything I ever saw for cultivating, just the thing for the binder and one man can handle all." Thus A. C. Paul of Middletown, Ohio, sums up in a few terse words the great advantages of his Moline-Universal Tractor.

This is not the opinion of just one exceptional individual, but is a typical expression of Moline-Universal owners.

Before designing the Moline-Universal Tractor, as manufacturers of farm implements, we knew a tractor would be of little value to the majority of farmers of the United States unless it would cultivate row crops. If a farmer is forced to keep his full number of horses for cultivating there is small economy in owning a tractor. Therefore the Moline-Universal was designed to cultivate as well as do all other work. We reproduce a few expressions from Moline-Universal owners to show just how well it has succeeded in cultivating and what bearing the cultivating feature has had on their farming operations as a whole.

Harley A. Mishler of South Whitley, Ind., farms 185 acres. The Moline-Universal enabled him to dispose of four horses. He says: "For cultivating a Moline-Universal Tractor is better than horses a dozen times. It is steady and stands the hot weather. It does not stop and switch flies but goes fast or slow just to please you."

C. R. Barr of Wyandota, Mo., last summer had 130 acres in corn and 75 acres in oats and wheat. Since using the Moline-Universal he keeps only one team of horses. He used the Moline-Universal for cultivating and says: "I don't think we could farm again without the Moline."

Ed. Finnegan of Bradford, Ill., says: "I cultivated and tilled, from the time corn came up until it was laid by, 80 acres of corn. In going over the corn for the first time you can throttle the motor down slow and not cover up any hills. After I bought my Moline-Universal I rented 35 acres more ground and the crops from this extra land paid for my tractor."

Another remarkable instance is furnished by E. E. Fletcher of Krum, Texas, who farms 500 acres—100 in cotton—and all the work is done by two Moline-Universals—not a single horse is used.

Even on the small farm the Moline-Universal is a profitable investment. Mr. Edward Belshae, Framingham Center, Mass., who farms 73 acres, says, "The Moline-Universal saved a whole lot of time, as 20 per cent tractor field work was spent in cultivating."

Fred Pabst of Oconomowoc, Wis., farms 1400 acres. He used his Moline-Universal for a great variety of work including cultivating and says: "That the tractor was satisfactory is indicated by the fact that we ordered a second one during the summer."

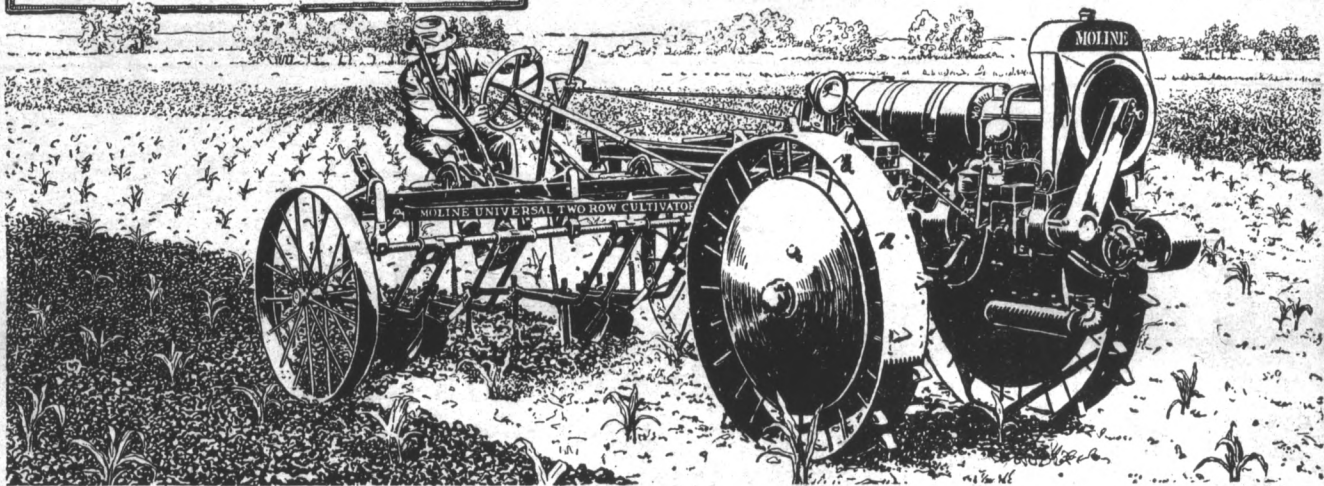
Chris. Walker of Blythe, Cal., raised 80 acres of cotton without a single horse. He says: "I think the Moline-Universal is the only tractor built that is practical for general farm work on account of its ability to cultivate. I would not farm in this country without a tractor, and it is needless to say that the tractor is a Moline."

Remember the Moline-Universal does all farm work including cultivating and one man operates both tractor and implement.

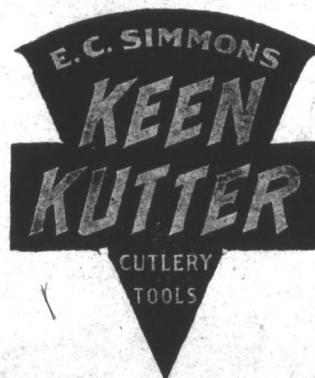
Our tractor catalog gives full information. Write for free copy and name of your nearest Moline dealer. Address Dept. 42

Moline Plow Co., Moline, Illinois

MOLINE UNIVERSAL TRACTOR



Look for this Trade-Mark on Tools and Cutlery



This trade-mark has guided millions in their selection of tools and cutlery of every kind. For many years it has been known as an absolutely dependable symbol of quality. Look for it always and be sure.

SIMMONS HARDWARE COMPANY

"The recollection of QUALITY remains long after the PRICE is forgotten" —E. C. SIMMONS

9 CORDS IN 10 HOURS



BY ONE MAN. IT'S KING OF THE WOODS. Saves money and backache. Send for FREE catalog No. B44 showing low price and latest improvements. First order gets agency. Golding Sawing Machine Co., 161 West Harrison St., Chicago, Ill.

Get Silver's NEW BOOK

ON SILO FILLERS

Now ready to mail. Learn how "Silverized Silage" increases yield of farm stock. Our printed matter covers all styles hand or power cutters. Send for it. The Silver Mfg. Co. 390 Broadway, Salem, O.

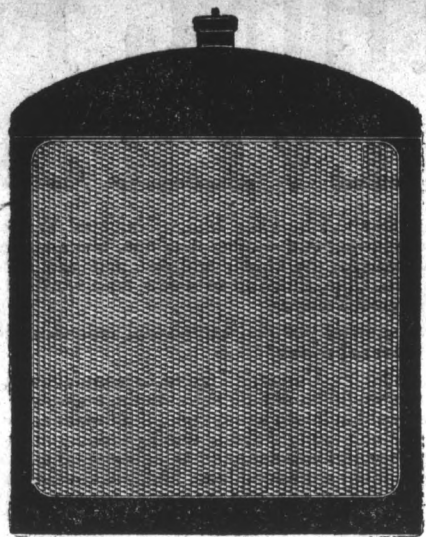
DEHORNING STOPS LOSS

Cattle with horns are dangerous and a constant menace to persons and to other cattle. Dehorn quickly and easily with a

KEYSTONE DEHORNER All over in 2 minutes. No harsh method. A clear, clean cut. Cows give more milk; steers make better beef. Send for free booklet. M. T. Phillips, Box 126, Pomeroy, Pa.



Please Mention The Michigan Farmer When Writing to Advertisers



Does the Tractor Catalog Specify SPIREX Radiator?

You want to know how well built is the tractor you think of buying.

You want to know if it comprises parts that have proved their worth in actual farm service.

And for this reason, look well to the radiator.

The radiator is the safeguard of your tractor motor. It must render a most unusual cooling service to keep from overheating this big, internal combustion engine that works almost always at maximum load in the hottest seasons of the year.

If the catalog specifies a Spirex radiator, you know it is one that has been tested on thousands of the best farm tractors built — that it has proved its superiority in actual farm service as a most durable, most efficient tractor radiator.

MODINE
SPIREX
RADIATORS

Modine
Manufacturing
Company
Racine, Wisconsin



Marketing at the Farm

SOME farmers living on main traveled roads take advantage of the trade that is continually passing in order to dispose of produce raised on the farm. To many, however, the highway in front with its incessant humming of wheels and purring of engines is like a lost opportunity—lost because it is never used.

I was driving through southwestern Michigan in an endeavor to locate pears, peaches and plums for canning. Many products were on sale by the roadside but there was seldom any notice calling attention to the stuff for sale. As a consequence, we stopped at a large number of these roadside tables before we found what we were after. Short hauls do not please the motorist, he wants to know what he is stopping for before he stops.

In our journey, we found only one man who knew how to advertise for motor trade and he was a Greek. The place was between Watervliet and Benton Harbor. Reduced to brass tacks, the devices he used were two A-shaped signboards, one placed about seven rods each side of the selling tent. A placard for "pears," "plums," "peaches," etc., had been printed. The top of each placard had two eyelets punched in and by these, the placards were hung on the signboard. Then above each signboard, an American flag was waving. From observation, something moving will attract attention more quickly than will a still object. The signboards were placed so that the driver had time to slow down before coming to the tent. The products being offered for sale were in a good-sized tent with a table across the front. The tent was neatly decorated, the attendant was very pleasing and the products were prime and packed to stand a long motor trip. Really, from observation and counting the number of people who stopped, this Greek had hit upon a combination which attracted the trade. I. J. MATHEWS.

CAN AMERICA PRODUCE POTASH?

NEW light is thrown on this interesting question by facts and figures contained in a recent publication of the Bureau of Soils of the United States Department of Agriculture.

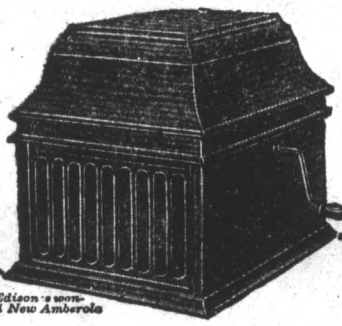
Bulletin No. 572 gives a careful analysis of the probable potash supply to be had from the cement industry when apparatus for its recovery has been universally installed.

On the basis of an average production of ninety million barrels of cement the total potash escaping at present amounts to about eighty-seven thousand tons annually. It has been demonstrated commercially that ninety per cent of this potash is recoverable and experiments show that ninety-five per cent of this amount is in available form or may readily be made available. On this basis we would have a production of approximately seventy-five tons of available potash each year.

Since only about fifty per cent of the potash in the raw material is ordinarily volatilized in the process of making cement, as handled at present, there is a prospect of still further quantities to be made available from this source.

The present high prices of potash are encouraging installation of collecting apparatus and when once installed the cost of potash recovery is small.

It is not all in filling cows up. They must have feed that has milk in it or they will not make milk of it. They cannot do it.



Mr. Edison's wonderful New Amberola

Only \$100
and After Trial

Keep the New Edison Amberola—Edison's great phonograph with the diamond stylus—and your choice of records, for only \$1.00. Pay balance at rate of only a few cents a day. Free trial in your own home before you decide. Nothing down. Write today for our New Edison Book and pictures, free. F. K. BARSON, Edison Phonograph Dist., 4811 Edison Bldg. Chicago

FREE! Book!
Write Today

Get Galloway's new 1919 book. Saves you hundreds of dollars on your seasons supplies. Thousands of farmers make this saving buying direct from Galloway. Why don't you? 1919 book shows latest and best implements and features.

**GALLOWAY'S SEPARATORS
ENGINES—SPREADERS**
Direct From Factory

Four good sizes Separators. Clean skimmers—easily cleaned—patented. Magneto equipped. Engines 2 1/2 to 12 H.P. Portable or stationary—burn any fuel. Wide spreading, low-down, light draft Spreaders. Write today for 1919 FREE BOOK. Close by shipping points.

W.M. GALLOWAY CO.
Box 137 Waterloo, Iowa

Duplex FARM Tool Grinder

Grinds your plow shares, cultivator points, axes, sickles, knives and all tools. Edge or side of wheel can be used.

No Engine too small for it. Will last a lifetime. Special attachment for grinding discs furnished free. Write for circular.

Duplex Mfg. & Mfg. Co., Box 408, Springfield, O.

98%
Of the World's Creameries
use exclusively
DE LAVAL CREAM SEPARATORS

That one fact alone is sufficient reason for your choice of a De Laval.

The creameryman handles millions of pounds of milk and he has found out from experience that no other cream separator will skim so clean or wear so long as the De Laval.

"Claims" don't fool the creameryman. He goes on "performance." Why not you too?

For catalog or any desired information see the local De Laval agent, or write to our nearest office.

The DeLaval Separator Co.
New York - Chicago
San Francisco

Feed your dairy and beef cattle **BUFFALO CORN** Ask your dealer for Buffalo

GLUTEN FEED

Write C. FRANCIS, 909 Ford Building, Detroit for sample, literature, and particulars

Feeding Problems

CALF NOT DOING WELL.

Can you tell us what to give a calf with a feeble appetite? It is nearly a month old, was a nice big calf when it came, from a big cow. We are giving it whole milk at present but it don't seem to care much about eating. It has a very poor appetite for whole milk or anything else.

Gladwin Co.

W. S.

Usually the very best medicine that can be given a young calf is the whole milk of its dam, yet sometimes the dam is not in good, healthy condition and the milk doesn't agree with the calf. I would advise that you change to the milk of another cow and see what effect that has. If the condition of the calf does not improve, then I would give it castor oil or some other laxative; usually there is nothing better than castor oil for young calves. This may stimulate the secretive organs and bring about a better condition. It sometimes happens, however, that the calves are not born right and nothing that can be done will enable one to raise them.

C. C. L.

RATION FOR COWS AND FATTENING CATTLE.

Will you please give me a balanced ration for a dairy cow? I have ensilage, corn fodder, corn and oats. I can buy bran and cottonseed meal. Will same ration do for fattening cattle?

Kent Co.

W. L.

As the roughage of your ration is composed of corn silage and corn fodder it will be necessary to have more protein in the grain part of the ration than you would if you had clover hay in place of the corn fodder. In order to have a sufficient amount of protein for a balanced ration it is necessary to feed other grain. As corn and oats do not contain a sufficient amount of protein to balance corn silage and clover hay even, and the corn fodder having much less protein than clover hay, it will be necessary to feed in connection with your corn and oats a concentrated food rich in protein. For the dairy cows I would suggest that you feed one and a half pounds of cottonseed meal and one and a half pounds of oil meal per day per head, feeding it on the ensilage night and morning. You could feed the one and a half pounds of oil meal at one feed, making three pounds per day. Then I would mix wheat bran with the ground corn and oats, equal parts by weight, and feed a sufficient amount of this so that each cow will get with the three pounds of cottonseed meal and oil meal, one pound of grain per day for every four pounds of milk produced in a day, if the milk is less than four per cent milk. If it tests more than four per cent, then one pound of grain per day for every three pounds of milk per day should be given. Of course, you are to feed the silage and cornstalks liberally, giving them what they will eat up clean without wasting.

For fattening cattle this would make a very good ration, although you could feed more cottonseed meal without any danger as the fattening cattle are only fed for a short period. You could do away with the bran and the oil meal if you should choose to do so, and feed simply corn and cottonseed meal. Begin by feeding one pound of cottonseed meal at a feed and gradually increase until the cattle are consuming as high as four or five pounds of cottonseed meal. This will probably cheapen the ration a little and will be very satisfactory for fattening cattle.

C. C. L.

We have found that cows having water available at all times will yield more milk than where the supply is restricted.—R. D. S.

Save time when feeding

Save time when cleaning

From Cattle to Field with but one handling.



JAMES Mor-Milk

Save time on watering cows
Do away with tank heater bother.

Save time on watering cows
Do away with tank heater bother.

\$20 PER COW
Records of 25 herds showed James Cups increased milk yield 2 1/2 lbs. per day average, saved \$2.50 on labor and 49c on fuel per cow each winter—total of \$20 more profit per cow.

Lost a Hired Man? —James Equipment— Saves Barn Work

James Mor-Milk labor saving Barn Equipment makes barn work easy. The light running James Carriers make chore time almost play time, turning the disagreeable task that heretofore has been shirked by all into a job that boys enjoy. James Scrapers make quick work of cleaning up cement floors; James Stanchions keep the stalls clean by lining up cows at the rear, so that manure falls in the gutter and not on the standing platform; and the James Swinging Sure Stop saves time and trouble when putting cows into stalls.

The James Feed Truck or Feed Carrier saves much walking to and from feed rooms—makes unnecessary the lifting of heavy baskets. James Drinking Cups save time, save fuel and increase milk yields. Cow testing records show average increases of 2 1/2 lbs. per cow per day—James Cups pay 200% and more a year on their cost.

And so on with other James Equipment—stalls, steel pens for cows, calves and bulls, hogs and sheep, ventilators, bullstafs, mangers, swinging cranes, milk can carriers and horse stable fixtures.

FREE BOOK
320 page book—"The James Way"—tells all about these James inventions and about James free barn plan service. Mail the coupon now; get full details how to cut barn work in half and make more milk—how James Equipment will solve your barn problems.

James Mfg. Co. Ft. Atkinson, Wis.

TEAR OFF COUPON

JAMES MFG. CO. — Please send me your free book on barn planning, ventilation and equipment. Also the James Barn Magazine (free).
I have _____ cows. I hope to build _____
remodel _____ about _____ Am interested in
Stalls (), Stanchions (), Carriers (), Drinking Cups (),
Ventilators (), Steel Pens (), Bull Staff ().
Name _____
R. R. Sta. _____ P. O. _____
MF S-2A R. F. D. _____ State _____

James Safety-First Bull Staff. \$3.50 f.o.b. Ft. Atkinson or Elmira. Par. Post, 1st and 2nd zones, 11c; 3rd zone, 18c; 4th zone, 33c; 5th zone, 46c.

James Mfg. Co. Ft. Atkinson, Wis.
Elmira, N. Y.



Guaranteed for all Open Circuit Work

RED DRY BATTERY SEAL

SPARK STRONGEST LASTS LONGEST



The Guarantee Protects YOU!
Ask Your Dealer

Avoid ignition troubles by using Red Seal Dry Batteries—convenient storehouses from which electric current can be drawn at will. They furnish fat, hot sparks that spur your tractor or farm engine into action and keep it running at par. Recommended as the most efficient, satisfactory and economical medium of ignition for all purposes. Try them

For Reliable Farm Power

Under every condition, regardless of weather and no matter how rough the going, these famous batteries will supply you with reliable farm power at least cost. Thousands of tractor owners will use no other! Absolutely best for tractors, farm engines, autos, door bells, hand lanterns, telephones, etc. Study the label! Insist on genuine Red Seal Dry Batteries.

MANHATTAN ELECTRICAL SUPPLY CO., Inc.
118 So. Wells St., Chicago New York St. Louis San Francisco
Factories at Jersey City, N. J., Ravenna, Ohio, St. Louis, Mo.

Send for This Book—FREE
Send dealer's name and we will forward you, free and postpaid, book—"How to Run the Gas Engine—Simplified" adopted as text book by State Agricultural Colleges and High Schools. Also free, our catalog of Everything Electrical for Home and on the Farm.



Ross "Improved" Superior Duplex Mill



Grinds cob-corn, shelled corn, oats, rye and all small grains—fine or coarse; also alfalfa.

Positive Gear Drive
Small Power and Low Speed
Strong and durable, none better made; easily regulated. Every Mill guaranteed. The Pivoted and Adjustable Self-Confirming Duplex Burrs guarantee uniform grinding. Ground meal saves one-fifth or more of grain and means cheaper feeding. Write today for catalog.

The E. W. Ross Co., Box 1014, Springfield, Ohio

RHODES DOUBLE OUT PRUNING SHEAR



Cuts from both sides of limb and does not bruise the bark.
Made in all Styles and Sizes
All shears delivered free to your door. Send for circular and prices.

RHODES MFG. CO.
615 S. Division Ave. GRAND RAPIDS, MICH.

Bog Spavin

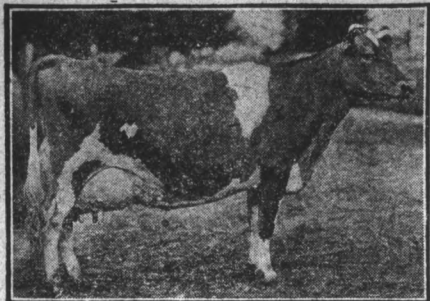


Cure the lameness without scarring the horse.

Fleming's Spavin Liquid
\$2 a Bottle—special remedy for all soft blemishes—Bog Spavin, Thoroughpin, Splint, Curb, Capped Hock, etc. Easy to use, only a little required and money back if it fails. Write for Fleming's FREE VEST-POCKET VETERINARY ADVISER.

FLEMING BROS., Chemists
252 Union Stock Yards, Chicago, Illinois

Mention The Michigan Farmer When Writing Advertisers



FEEDING VALUE OF BEAN PODS.

I am feeding bean pods to my stock and they seem to relish them. What is the feeding value and how do they compare with other roughage?

Newaygo Co.

J. R. L.

Well cured bean pods contain about eighty-nine pounds of dry matter per one hundred pounds, 3.6 per cent of which consists of crude protein, 42.4 per cent carbohydrates and 0.7 per cent fat, or a total of 47.6 per cent of digestible nutrients. Experienced feeders claim that well-cured bean pods have practically the same feeding value as good mixed hay.

W. M. K.

MORE PROTEIN NEEDED.

What changes should be made, if any, in feeding my cows? The cows do not do as well as they should. I am feeding ensilage and straw night and morning, with about half a bushel of turnips and nine pounds of oat and barley chop, equal parts, and mixed hay at noon.

Iosco Co.

H. H.

The largest part of your roughage ration, that is, corn silage and straw, is deficient in protein and you cannot balance this ration and give the cows a sufficient amount of protein by feeding oat and barley chop. You must put in a food like cottonseed meal or oil meal or gluten feed or wheat bran in order to get a sufficient amount of protein to offset the carbonaceous food in the roughage. I would recommend that you feed your roughage foods, silage and straw and your mixed hay, liberally, all the cows will eat without wasting, then you grind your oats and barley and mix them equal parts with wheat bran, that is, one hundred pounds of grain, mixed together. Purchase either cottonseed meal or oil meal and feed two pounds per day to each cow. I prefer to feed a pound night and morning on the ensilage. Then feed a sufficient amount of this mixture of ground oats and bran so that each cow will receive a pound of grain for every four pounds of milk she produces, if she produces less than four per cent milk. If she produces more than four per cent milk then feed her one pound of grain for every three pounds of milk produced.

C. C. L.

SILAGE NOT KEEPING.

Could you give me advise about preventing silage from spoiling? My silage seems to mold and get hot. Do you think it would be a good idea to put water on it?

Macomb Co.

C. W.

It would appear from the explanation made that your silage was put into the silo too dry. When this is done the silage does not pack down close enough together to exclude the air and this air that is held in between portions of dry corn fodder causes the silage to heat and mould. If you had run a stream of water in the lower part of the ensilage cutter when you filled the silo and wet it down good this could have been avoided.

Now the only thing that you can do is to drench your silage with water, put it on abundantly on top and let it run down between the walls of the silo and the silage. This will exclude air to a certain extent but I doubt if you can stop the heat of your silage in the center of the silo because it will be impossible to get water in there now, but this is the best you can do—drench your ensilage with water.

C. C. L.

A Superior Yield



Will you reap a full harvest from your fields, or will part of your seed fail to germinate on account of incorrect sowing? There is a big demand for wheat this year, our country needs every bushel you can grow, and the only solution is scientific sowing. It means food for the boys "over there" and brings extra profits to you.

Superior Grain Drills

are crop increasers. They do not skip, bunch or clog. The seed is deposited at the bottom of the seed trench and covered with an even depth of earth. Every seed has favorable condition for a quick and sturdy growth so that at harvest time you have an even stand of well filled grain.

For Team or Tractor

Use with team or tractor. Can be equipped with Power Lift which enables operator to raise or lower discs while in motion without leaving seat of tractor. This saves much time and labor. Adjustable Hitch used with any tractor. It will pay you to use this Drill because its economical sowing will bring you increased profit.

Send For the Superior Catalog

Read our warranty. Completely illustrates and describes the many patented features that make the Superior the most complete line of Grain Drills in the world.

Call upon your dealer and ask him to show and explain to you the exclusive features of the Superior Drill. Made in all sizes, in plain grain and fertilizer styles.

The American Seeding-Machine Co., Inc.

Springfield, Ohio



Summer is just around the corner. Make preparations now for laying
American Vitrifed Salt Glazed Tile
You'll get more Bushels per acre
American Sewer Pipe Co.
(Michigan Branch) Jackson Mich.
Drain Tile Sewer Pipe Building Blocks Vitrifed Tile Silos

RAW FURS

Ship YOURS to
HERSKOVITS

"The House that Sets the Pace"

and be absolutely certain of highest prices.

A few things we do—
Pay transportation charges.

Deduct no commission.

Make immediate returns.

Hold furs separate on request. [Large ice plant in our own 16-story building.]

Write for price list B.

Albert Herskovits & Son,

44-50 W. 28th St.

New York.

HANDY MAN to work in greenhouse and garden.
LEVANT COLE, 89 Wendell St. Battle Creek, Mich.

Beat the Fuel Shortage

As low as \$10 Don't depend on coal these days. Install a



HERTZLER & ZOOK CO., Box 23 Belleville, Pa.

Health—Comfort—Convenience
Don't go out in the snow or nasty weather to an unsightly, germ-breeding, disease-spreading, outdoor privy. No more colds, rheumatism, etc.

Wolverine Chemical Toilet

Endorsed by health officials, Odorless, Sanitary, Germ Proof. No water, sewer or cesspool. Easy to install. Upkeep less than cent a day. Pays for itself many times in a year. Thousands in use. Price remarkably low. Write for free book.

Dall Steel Products Co., 301 Main St., Lansing, Mich.

LEARN AUCTIONEERING

at World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught. Write today for free catalog. **JONES NAT'L SCHOOL OF AUCTIONEERING.** 28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

Turn Water Into Milk

Get More Milk on Same Feed
Improve Cow Health Prevent Contagious Diseases
That's what you can do with your dairy cows, besides saving a lot of time and labor in watering, by installing this most up-to-date system of stall watering—
Libbey Automatic Water Bowls

Milk is 87 per cent water and cows cannot give their greatest yield unless they have plenty of water constantly within reach. Farmers who use Libbey Bowls report an increase of 15 to 20 per cent, which soon pays for the bowls.

Libbey Bowls are the most sanitary and successful ever invented. Each bowl controls its own water supply, operated entirely by cow, and may be put at different heights, or in any stall or pen. No float tank required. Cannot overflow; cannot get out of order. Almost no water left in bowl to become stagnant. They save labor and feed and increase milk. Prevent spread of contagious diseases, as each cow has her own bowl and no water can pass from one to another.

Write for circulars, prices, Free Daily Milk and Feed Record. If interested in Stanchions, Stalls, Carriers, etc., ask for Free General Catalog.

C. A. LIBBEY COMPANY, 204 Marion St., Oshkosh, Wis.

Build Your Silo With "Ship-Lap" Tile Blocks

Build it but once. First cost only cost, no upkeep expense, fireproof.

Lansing
Vitrified Tile Silos

Reinforced with twisted steel—has famous "ship-lap" blocks—stronger walls—less mortar exposed—smooth walls—silage settles better—more beautiful outside—less chance for frost. Steel roof and chute. Also get offer on Climax Silo Fillers and Bidwell Threshers.

J. M. PRESTON CO.

Department 309 Lansing, Mich.

Write for Catalog

What Shall I Give My Boy?

By Edgar L. Vincent

THIS is a question asked by every father who has boys coming along toward manhood: "What shall I give my boy that will better fit him for the life he is facing?" And two or three things come first in the minds of most men. One is that they ought to place at the command of their boys as much of material goods as possible, reasoning that without these he will begin his career handicapped. If the father can give every boy a piece of land, it is usually held that he has given them a "good start" in the world. And then, most fathers like to feel that they stand well in the community for the sake of their children. The man that is looked up to, so these men think, on account of the money he has accumulated or the success he has had in his business, does much toward insuring a good future for his boys.

These are both all right enough in their place, as far as they go, but they do not go far enough. Money may be the worst thing in the world for a boy

to inherit. No man can pass his good name on to a son that does not appreciate integrity to the fullest possible extent. That is, a man is what he possesses himself of real worth. The money or the farm or the good standing in society count only as adjuncts to the success of the son. What can a farmer do, then, that will work into the very warp and woof of the boy's life and start him on the road to upright character and make him the best possible citizen?

One thing to begin with, every father may give his son. That is, a chance to know all he himself knows about farming. It is a great thing in these days to be a good farmer. No longer is it safe to say, if it ever was, "He does not like anything else, so we will make a farmer of him." To be a good farmer, the boy ought to have just as much ability as if he were to be a doc-

tor or a lawyer. It ought to be the pride of every farmer to find out all he can about the soil of his farm, how best to get the most out of it and to let his boy have this information at first hand. He cannot get from a book or from the lips of any teacher in a school room, apart from the farm, the actual, first-hand knowledge that will enable him to take a farm and operate it successfully. The farm, under the teaching of the father, is the best place in the world to learn farming. Books and schools will supplement the home training, but that is all. They cannot take the place of it.

And then, the farmer may give his boy all he knows about the care and keeping of stock. To do this to the best possible advantage, he should study horses and cattle himself. Every farmer must of a necessity, be something of a veterinarian. He must

understand the stock he handles well enough to feed them to the best advantage, he must have a fair knowledge of the effects of certain simple remedies and be ready to apply them when needed. These things he ought to pass on to his boys.

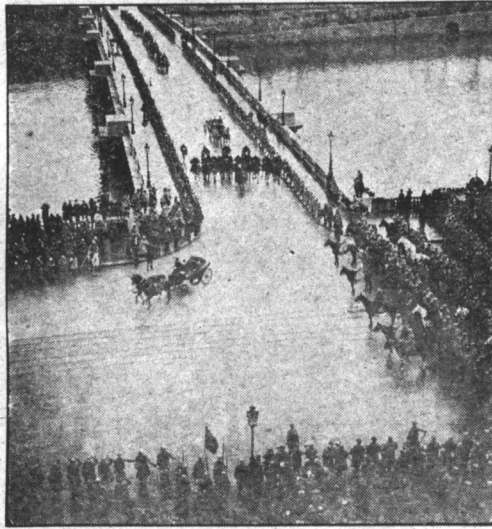
Right in line with this, the farmer may tell his boy how to grow every crop that is native to the part of the country where he lives and lead the way to its successful marketing. We are laying out here a big life for the farmer who is a father, and that is what we hold every farmer is worthy of doing and being. There is no greater work than that of being a fine, all-round farmer; and the father who asks himself what he can do for his boy can make no more satisfactory answer than to say, "I will help him to know the farm from beginning to end."

Finally, the farmer who wants his boy to win out and love the farm cannot do better than to give him a chance (Continued on page 24).

WORLD EVENTS IN PICTURES



Another Reason Why the Red Cross Needs Your Dollar.



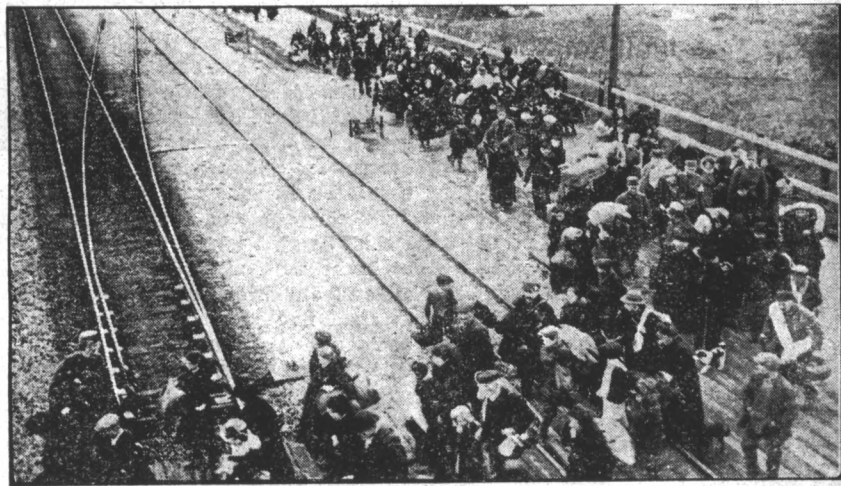
King George Visits Paris—Royal Procession Crossing Concord Bridge.



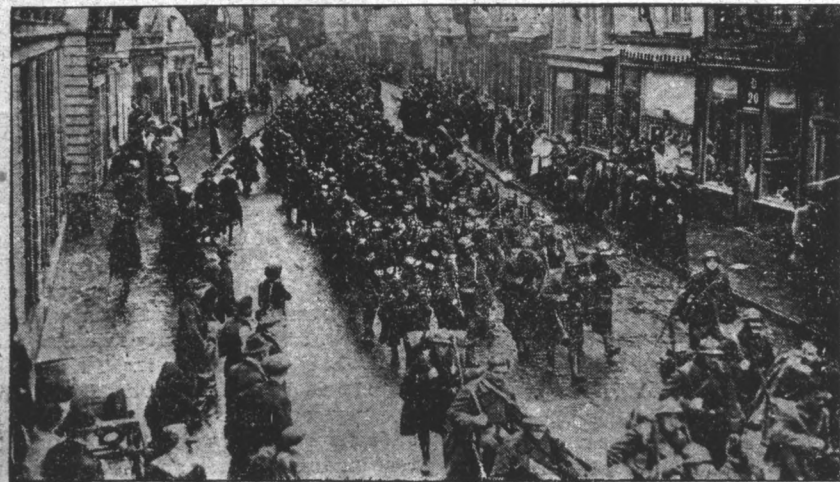
The First Woman's Unit Sent Overseas by the Jewish Welfare Board.



The Photo Shows the Oxen which the Germans Stole During their Occupation of Serbia, Being Utilized for Transport Purposes on their Retreat.



French Refugees from Northern France Returning to their Homes from Holland where they had Fled to Escape the Rule of the Oppressor.



Belgian Infantrymen, who had Driven the Germans from the City, Enter the Town of Bruges for the First Time Since the Retreat in 1914.



This Cheerful Group of Returned Heroes are Demonstrating the Manner in which Germans Met them, Hands up and Shouting "Kamerad."

Two Interesting Letters From France

THE following extract from a letter written from France by Irving Hill, of the 601st Engineers, gives an interesting description of French agricultural methods:

"They can't take us out of this country and back to the states any too soon to suit me. I haven't seen only a small part of this country, but I can't imagine what there was over here to attract people across the ocean for pleasure. I thought I was going to see something over here. We arrived in France last July, just about when their wheat and oats began to ripen. In a trip across the country on the train I saw lots of grain, mostly wheat, just ready to be harvested. As the train carried us along we saw old men, women and children in the fields, with sickles, just beginning the task. Once in a while we would see a mowing machine or an old-fashioned McCormick grain binder, but that was all.

I was roaming around the farming country all the time and it was about the first of September when they finished harvesting. The wagons they use for hauling grain and other things are very clumsy things, having only two high wheels, and thills instead of a tongue. When they hitch up two or three horses they hitch them one ahead of the other. Their wagons will hold about half as big a load as an ordinary hay rack.

"When the grain was all drawn in they began threshing. You have heard how these French people all live in little villages with houses and barns right close together. They are built of stone and one stone wall serves for the home and barn both. Every bit of grain is put inside these stone barns in the village. Some of them thresh with a flail on the barn floor. There are no threshing machines that go around the village, but most of them have a threshing machine built right in the barn. It is always on a scaffold over the barn floor. About all there is to it is a big cylinder four five feet wide, with a simple fan below which blows the dust out as the grain drops down. The straw drops down on the barn floor and they tie it up in bundles and put it back in the barn. All the threshed grain I saw was of a poor quality.

"When it comes to plowing, the French people hitch their horses side by side, but I never saw them using more than two on a plow. They plow very shallow. In most places they have to because solid rock is only a few inches beneath the surface."

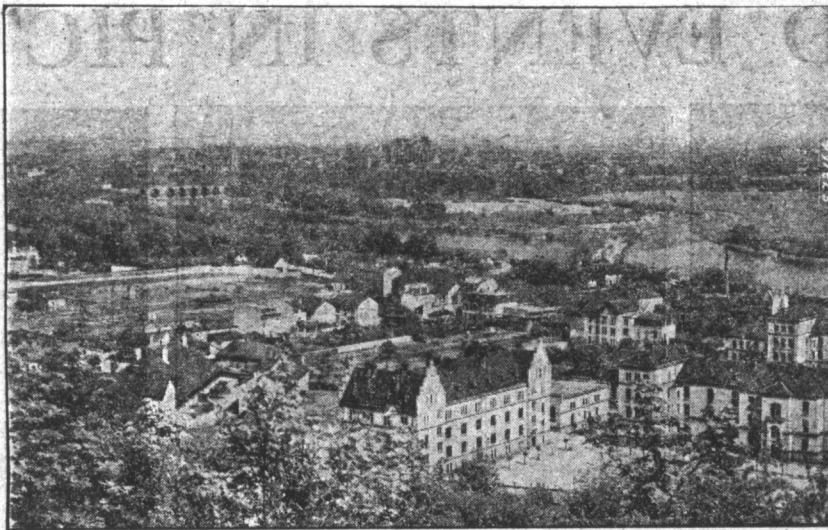
LETTER from a French girl living at Dyon, France, written to her American correspondent Miss Elsa Clark, of Owosso, Mich.:

My Dear American Friend:

Your most welcome letter from September 17th is arrived to me this morning. How happy I am, and to prove you my happiness I will answer to you

today. How it is good to me to think I have a dear American friend now! We love so much your dear country and people. We are thinking you are for us, brothers and sisters, and like an America lord said last Sunday in a bright conference, "Now America and France are betrothed! Work together, and do not forget we are fighting for the liberty for the world!" It is splendid, and I feel in my heart a so deep admiration for the brave, noble people saving us.

Friend dear, will you I call you my sister? My unknown sister, across the sea, my beloved sister! I am so thankful to Dora to have given you to me. I envied also Suzanne to have an American friend. Dora is quite a nice girl, and we all like her. Her letters are read at loud voice by Suzanne, and our dear people is very fond of them. I did so this morning with your so kind letter, and my mother, brother, sisters were delighted and said me to send you their kindest regards and wishes. I will speak to you about me a little,



Birds-eye View of a Typical French City.

and beg you to excuse my poor English. I am writing so badly! Do you not know the French? It would be so nice if you can write to me in my own language, or if I could write to you in French. It would be easier to me to express my feelings. I think it is quite difficult to write in another language.

I am just twenty-three for few weeks. I am little and thin. My hair is auburn (like yours), my eyes are brown, my complexion is light and rose. I will send my picture and my picture's people as soon as I can, and I shall be glad to receive yours. I live at home with my dear mother, three sisters, one brother. My dear father is dead five years ago in a dreadful accident, the day before Christmas. Oh! the sad Christmas to us, and what great lost we did. Our dear father was a sailor. He visited your America, and often spoke to us about her. He loved her and said us how she is a nice country. How I should like to

see her a day. Lily, my little brother, is studying to be a sailor, and go to America. Lily will write to you. Today he cannot because at school. Every day he goes to school from eight a. m. until seven at night. He is working hard. He is twelve and a nice boy. He is fond of music, and we all also. Lily is playing "violin," it is nice. I am glad you are loving music, I also. In France we have often beautiful concerts, and the money is given to patriotic works, wounded soldiers, prisoners, poor orphans.

Last Sunday we have had a splendid conference by an American people, with moving about America. We have admired the "Liberty" lighting the world at New York, and many beautiful views of your dear country. We have also had a nice concert by some artist. We have heard "Lakme," "Lilgurd Patrie." Do you know these operas?

I will continue to explain to you my family. My sister Jane or Jeanne is twenty-two. She is tall and strong,

of France by them, and the so brave and kind allies who are helping us in this war. Oh, we are all hoping in the Victory very, very soon! The news of war are every day splendid, and German people will be beaten by our dear soldiers!

How it is sad to have dear ones in the war! We have also many dearest friends, cousins in the trenches, and in praying for mine I will pray God for yours and Dora's ones. We have many cousins killed, some prisoners, it is sad also to be prisoner! Exile is hard.

Here in France we have no flags in the windows, but in every church there is a picture with all names of the boys started in the war and killed on the battlefield. And the people who have lost a dear son, husband, or brother, wear a black "brassard" with one tricolor "blue, white and red" ribbon for every dead soldier.

I wish send you some pictures of war in next letters if that can be a pleasure to you. Be sure and tell to Dora that Arthur, George, and Roy will be welcome at home, if they have their furlough. We shall be quite glad to receive noble sons of great America, and give them home a little. It is so sad to them to be so far from. I often think of the little poetry, you know. "Home! Home, Sweet Home. There is no place like Home." It is true, but after the war how it will be good to live again with all dear ones, a free, a better life, our sacrifices will give us. Do you not think, dear sister, it will be good to say, "During the war, I have suffered, I it is a so great sacrifice to give ones) I done sacrifices, I prayed, I have contributed for a little part also to the Liberty in the world."

I should like also to be a nurse, but I am so busy with my pupils, then every Thursday I go to an hospital to give lessons Braille and dactylography to poor blind soldiers. Oh! my dear, it is the saddest thing, and my boys are courageous cheerful, it is admirable. What sacrifice they have offered to our dear France! The light! Oh, I do hope all these sacrifices will give us the great Victory.

I have put in my letter some cards of my country, and I should be glad to receive some of yours. In it also you will find a little branch of "bruyere" (I do not know the name in English). I have picked it during my holidays in the country. It will bring you with my true friendship the salute of France to the noble America.

I hope to hear from you very soon again. It is late now, and I must close my letter. I have many, many things to say to you, but it will be for the next time. Tell to your parents, brother, Dora, all your people, our salute, our love, our very best wishes, and keep for you, my dear Elsa, the very best thoughts and feelings from

Your true French friend,

MARIE LOUISE TRIPIER.

The Community Fair

THE community fair is a miniature county fair conducted by people of a community to promote social and economic life. It arouses interest and pride in local achievement by affording an opportunity for the exhibition of the best products of the community, fosters the spirit of cooperation by bringing the people together in friendly rivalry, and affords an opportunity for wholesome community recreation.

These fairs, says J. Sterling Moran, of the Department of Agriculture, are held quite generally throughout the country and are known in different localities as community fairs, district fairs, township fairs, school fairs,

grange fairs, and farmers' club fairs. The fall festivals, harvest home festivals, and farm, home, and school festivals, which are held in certain localities, are adaptations of the same general idea.

The community, township, or district fair, he continues, makes it appeal directly to all members of the community, while the fair conducted by the farmers' club appeals especially to the members of the organization concerned. The school fair in its simplest form is an exhibition of the work done and the products grown by its school children. From the school fair, with its community-wide interest, it is an easy step to include the products of the

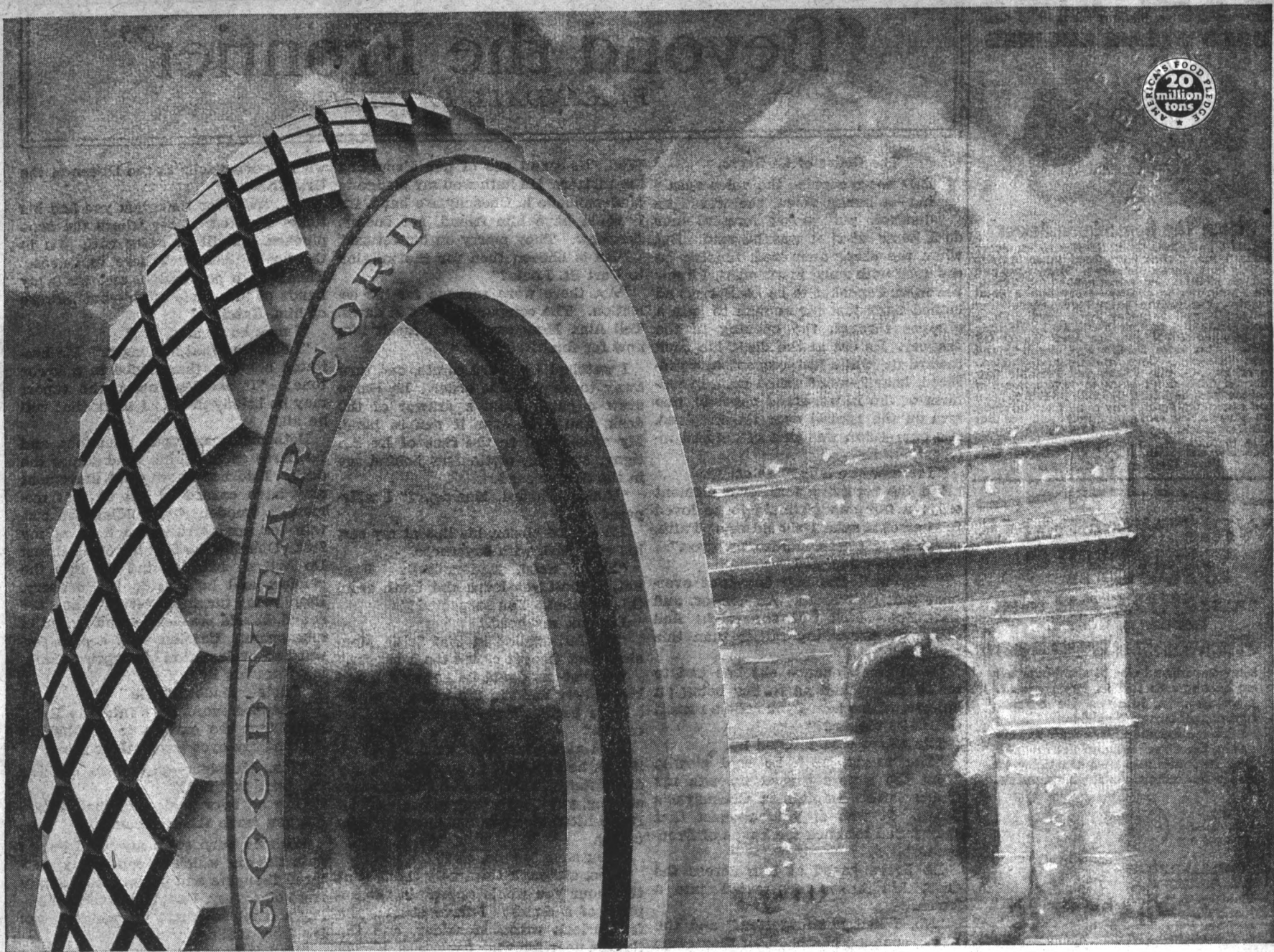
older girls and boys who are not in school, and ultimately the products and work of all the members of the community.

Other types of community fairs vary from the "harvest home thanksgiving festival" of New England, which was originally dominated by the religious motive and had very few exhibits aside from those brought for decorative purposes, to the "farm, home, and school festivals" of the middle west, where the main feature is the exhibition of products and where recreation of all kinds forms a prominent part.

The first step toward holding a community fair is to get together the leaders of the different organizations in

the community for the purpose of considering whether or not it is advisable to hold a community fair. It is well to present at this meeting a general outline of the method of procedure for the conduct of the fair. If the plan is approved by this group, a community meeting is called, at which full explanation is made regarding the nature and purposes of a community fair and the methods of conducting it. This meeting should be well advertised by posters, newspaper notices, and post cards addressed to each family calling attention to the place and date and emphasizing the importance of the meeting.

(Continued on page 25).

*L'Arc de Triomphe, Paris*

ANNOUNCEMENT

WE are resuming quantity production on Goodyear Passenger Car Tires for private use.

The shortage of these tires that existed during the period of war was inevitable.

Promptly upon America's entry into the war, Goodyear devoted great effort to the production of gas masks, airplane, automobile and truck tires, balloons and dirigibles,

urgently needed by our army and navy.

This, of course, necessitated a cut in our passenger car tire output, for general distribution.

Later, there came the Government order limiting all tire makers to 50 per cent of their normal output.

This restriction has since been lifted.

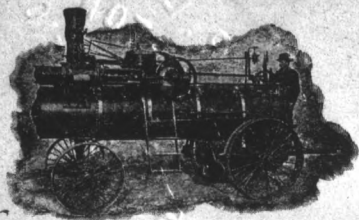
So, as normal conditions are being restored, we are increasing our production steadily in an effort to meet the greatly increased demand for Goodyear Tires.

However, to insure prompt delivery, we suggest that you estimate your near-future requirements, placing your order now with your Goodyear Service Station Dealer.

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

GOODYEAR
AKRON

BARGAINS USED STEAM ENGINES



Steam The Dependable Power

REBUILT and SECOND-HAND ENGINES, every standard make, that have been taken in trade for New Port Huron Machines. Many sizes and kinds give YOU a large assortment to select from. Prices according to quality—every one a good bargain. For Hulling Clover, Threshing, running Ensilage Cutters, Grinding Feed, Sawing Stove Wood, HEATING, and for COOKING FEED, they are just what YOU NEED. Use ANY KIND OF FUEL. Also have Rebuilt and Second-Hand Grain Threshers, Corn Huskers and Shellers, Clover Hullers, Silo Fillers and Portable Saw Mills. If YOU don't want to invest in a new machine here is YOUR OPPORTUNITY to get a good one at small cost. They're all fixed up right (not given a lick and a promise.) Ask for our REBUILT machinery list send FREE.

Port Huron Engine & Thresher Co.
Port Huron, Michigan.

WHITING-ADAMS BRUSHES

TRADE VULCAN MARK
RUBBER CEMENTED

Shaving Brushes

are guaranteed not to shed bristles or hair nor to fail in any respect. Having one, insures its owner against all brush troubles.

These brushes have ends as soft as the finest velvet, and the mass of hair has stiffness and elasticity to rub in the lather to make it effective.

Send for
Illustrated
Literature

JOHN L. WHITING-
J. J. ADAMS CO.
Boston, U. S. A.
Brush Manufacturers
for Over 108 Years and
the Largest in the World



SEEDS



OLDS' Catalog TELLS THE TRUTH

With carefully written descriptions, true illustrations and conservative statements, Olds' 1919 Catalog is a true guide to the most valuable book for everyone needing seeds.

OLDS' SPECIALTIES

Seed Potatoes. The new Olds' White Beauty and 10 others, choice certified stock. Seed Corn—Wisconsin fancy ear corn. Seed Oats, Wheat, Barley, Clover, Alfalfa, Timothy, Wisconsin tested, high-grade seed. Samples FREE, all field seeds. Buy from samples. Garden Seeds, Flower Seeds, Bulbs, Nursery Stock, Poultry Supplies, Tools, etc.

Write today for Olds' 32nd Annual Catalog
Drawer C 36
L. L. Olds Seed Co. Madison, Wis.

LET US TAN YOUR HIDE.

Horse or Cow hide. Calf or other skins with hair or fur on, and make them into coats (for men and women), robes, rugs or gloves when so ordered. Your fur goods will cost you less than to buy them and be worth more.

Our illustrated catalog gives a lot of information. It tells how to take off and care for hides; how and when we pay the freight both ways; about our safe dyeing process on cow and horse hide, calf and other skins; about the fur goods and game trophies we sell, taxidermy, etc.

Then we have recently got out another we call our Fashion Book, wholly devoted to fashion plates of coats, neckwear and other fine fur garments, with prices; also fur garments remodeled and repaired.

You can have either book by sending your correct address naming which, or both books if you need both. Address

The Crosby Frisian Fur Company,
571 Lyell Ave., Rochester, N. Y.



Free Catalog in colors explains how you can save money on Farm Truck or Road Wagons, also steel or wood wheels to fit any running gear. Send for it today.
Electric Wheel Co.
35 Elm St., Quincy, Ill.

"Beyond the Frontier"

By RANDALL PARRISH

The Order of La Barre.

I DID not recognize the voice speaking—a husky voice, the words indistinct, yet withal forceful—nor do I know what it was he said. But when the other answered, tapping on the desk with some instrument, I knew the second speaker to be La Barre, and leaned back just far enough to gain a glimpse through the opening in the drapery. He sat at the desk, his back toward us, while his companion, a red-faced, heavily-moustached man, in uniform of the Rifles, stood opposite, one arm on the mantel over the fireplace. His expression was that of amused interest.

"You saw the lady?" he asked.

"In the receiving line for a moment only; a fair enough maid to be loved for her own sake I should say. Faith, never have I seen handsomer eyes."

The other laughed.

"'Tis well Madame does not overhear that confession. An heiress, and beautiful. Piff! but she might find others to her liking rather than this Cassion."

"It is small chance she has had to make choice, and as to her being an heiress, where heard you such a rumor, Colonel Delguard?"

The officer straightened up.

"You forget, sir," he said slowly, "that the papers passed through my hands after Captain la Chesnayne's death. It was at your request that they failed to reach the hands of Frontenac."

La Barre gazed at him across the desk, his brows contracted into a frown.

"No, I had not forgotten," and the words sounded harsh. "But they came to me properly sealed, and I supposed unopened. I think I have some reason to ask an explanation, Monsieur."

"And one easily made. I saw only the letter, but that revealed enough to permit of my guessing the rest. It is true, is it not, that La Chesnayne left an estate of value?"

"He thought so, but, as you must be aware, it had been alienated by act of treason."

"Ay! but Comte de Frontenac appealed the case to the king, who granted pardon, and restoration."

"So, 'twas rumored; but unsupported by the records. So far as New France knows there was no reply from Versailles."

The Colonel stood erect, and advanced a step, his expression one of sudden curiosity.

"In faith, governor," he said swiftly, "but your statement awakens wonder. If this be so why does Francois Cassion seek the maid so ardently? Never did I deem that cavalier one to throw himself away without due reward."

La Barre laughed.

"Perchance you do Francois ill judgment, Monsieur le Colonel," he replied amused. "No doubt 'tis love, for, in truth, the witch would send sluggish blood dancing with the glance of her eyes. Still," more soberly, his eyes falling to the desk, "'tis, as you say, scarce in accord with Cassion's nature to thus make sacrifice, and there have been times when I suspected he had some secret purpose. I use the man, yet never trust him."

"Nor I, since he played me foul trick at La Chine. Could he have found the paper of restoration, and kept it concealed, until all was in his hands?"

"I have thought of that, yet it doth not appear possible. Francois was in ill grace with Frontenac, and could never have reached the archives. If the paper came to his hands it was by accident, or through some treachery.

Well, 'tis small use of our discussing the matter. He hath won my pledge to Mademoiselle la Chesnayne's hand, for I would have him friend, not enemy, just now. They marry on his return."

"He is chosen then for the mission to Fort St. Louis?"

"Ay, there were reasons for his selection. The company depart at dawn. Tell him, Monsieur, that I await him now for final interview."

I watched Delguard salute, and turn away to execute his order. La Barre drew a paper from a drawer of the desk, and bent over it pen in hand. My eyes lifted to the face of De Artigny, standing motionless behind me in the deeper shadow.

"You overheard, Monsieur?" I whispered.

He leaned closer, his lips at my ear, his eyes dark with eagerness.

"Every word, Mademoiselle. Fear not, I shall yet learn the truth from this Cassion. You suspected?"

I shook my head.

"My father died in that faith, Monsieur, but Chevet called me a beggar."

"Chevet—no doubt he knows all, and has a dirty hand in the mess. He called you beggar, hey—hush, the fellow comes."

He was a picture of insolent servility, as he stood there bowing, his gay dress fluttering with ribbons, his face smiling, yet utterly expressionless. La Barre lifted his eyes, and surveyed him coldly.

"You sent for me, sir?"

"Yes, although I scarcely thought at this hour you would appear in the apparel of a dandy. I have chosen you for serious work, Monsieur, and the time is near for your departure. Surely my orders were sufficiently clear?"

"They were, Governor La Barre," and Cassion's lips lost their grin, "and my delay in changing dress has occurred through the strange disappearance of Mademoiselle la Chesnayne. I left her with Major Callons while I danced with my lady, and have since found no trace of the maid."

"Does not Challons know?"

"Only that, seeking refreshments, he left her, and found her gone on his return. Her wraps are in the dressing room."

"Then 'tis not like she has fled the palace. No doubt she awaits you in some corner. I will have the servants look, and meanwhile pay heed to me. This is a mission of more import than love-making with a maid, Monsieur Cassion, and its success, or failure, will determine your future. You have my letter of instruction?"

"It has been carefully read."

"And the sealed orders for Chevalier de Baugis?"

"Here, protected in oiled silk."

"See that they reach him, and no one else; they give him an authority I could not grant before, and should end La Salle's control of that country. You have met this Henri de Tonty? He was here with his master three years since, and had audience."

The governor leaned his head on his hand, crumbling the paper between his fingers.

"This young fellow—De Artigny," he said thoughtfully, "you have some reason for keeping him in your company?"

Cassion crossed the room, his face suddenly darkening.

"Ay, now I have," he explained shortly, "although I first engaged his services merely for what I deemed to be their value. He spoke me most fairly."

"But since?"

"I have cause to suspect. Chevet tells me that today he had conference

with Mademoiselle at the House of the Ursulines."

"Ah, 'twas for that then you had his ticket revoked. I see where the shoe pinches. 'Twill be safer with him in the boats than back here in Quebec. Then I give permission, and wash my hands of the whole affair—but beware of him, Cassion."

"I may be trusted, sir."

"I question that no longer." He hesitated slightly, then added in a lower tone: "If accident occur the report may be briefly made. I think that will be all."

Both men were upon their feet, and La Barre extended his hand across the desk. I do not know what movement may have caused it, but at that moment, a wooden ring holding the curtain fell, and struck the floor at my feet. Obeying the first impulse I thrust De Artigny back behind me into the shadow and held aside the drapery. Both men, turning, startled at the sound, beheld me clearly, and stared in amazement. Cassion took a step forward an exclamation of surprise breaking from his lips.

"Adele—Mademoiselle!"

I stepped more fully into the light, permitting the curtain to fall behind me, and my eyes swept their faces.

"Yes, Monsieur—you were seeking me, were you not?"

"For an hour past; for what reason did you leave the ballroom?"

With no purpose in my mind but to gain time in which to collect my scattered thoughts and protect De Artigny from discovery, I made answer, assuming a careless demeanor which I was far from feeling.

"Had it been so long, Monsieur?" I returned in apparent surprise. "Why, I merely sought a breath of fresh air, and became interested in the scene without."

La Barre stood motionless, just as he had risen to his feet at the first alarm, his eyes on my face, his heavy eyebrows contracted in a frown.

"I will question the young lady, Cassion," he said sternly, "for I have interests here of my own. Mademoiselle!"

"Yes, Monsieur."

"How long have you been behind that curtain?"

"Monsieur Cassion claims to have sought me for an hour."

"Enough of that," his voice grown harsh, and threatening. "You address the governor; answer me direct."

I lifted my eyes to his stern face, but they instantly fell before the encounter of his fierce gaze.

"I do not know, Monsieur."

"Who was here when you came in?"

"No one, Monsieur; the room was empty."

"Then you hid there, and overheard the conversation between Colonel Delguard and myself?"

"Yes, Monsieur," I confessed, feeling my limbs tremble.

"And also all that has passed since Monsieur Cassion entered?"

"Yes, Monsieur."

He drew a deep breath, striking his hand on the desk, as though he would control his anger.

"Were you alone? Had you a companion?"

I know not how I managed it, yet I raised my eyes to his, simulating a surprise I was far from feeling.

"Alone, Monsieur? I am Adele la Chesnayne; if you doubt, the way of discovery is open without further word from me."

His suspicious, doubting eyes never

(Continued on page 20).



Scientific Refining

To explain the En-ar-co system of Scientific Refining, let us assume that you have caught and condensed escaping vapor from a teakettle spout. In doing this, you have secured pure water. But along the sides and at the bottom of the kettle, scale has formed—residue that is left over. By placing this pure water in a new kettle and re-boiling it, you will find little, if any, scale in kettle number two.

En-ar-co National Motor Oil is made by much the same process. It is distilled and re-distilled several times. All impurities, free carbon and residue are removed. It is all oil.

En-ar-co National Motor Oil

**The Best Lubrication for
Your Auto, Tractor, Truck, Gas Engine,
Motor Boat and All Motors**

For all 'round service and every day satisfaction, En-ar-co National Motor Oil cannot be duplicated. It protects all moving parts by a soft, velvety cushion or film—strong and tenacious—and permits the motor to render its greatest strength and power.

All motors give better service and last longer when lubricated with En-ar-co National Motor Oil.

**Ask Your Local Dealer for En-ar-co
If He Cannot Supply You, Send Us Your Order Direct**

But do it now. Start the year right and you'll soon thank the day that brought En-ar-co satisfaction to you. Buy it by the barrel or half-barrel and be assured of an adequate supply of the best oil obtainable.

Sent Free

We want every motor owner to have one of these long-spouted cans that make it easy to oil the hard-to-reach places. Simply fill out, sign and send the coupon today.

**The National Refining
Company**

Branches in 78 Cities
General Offices: Cleveland, Ohio

(122)



The National
Refining Co.,
1769 Rose Bldg.,
Cleveland, Ohio

I own.....
(Give name above)

automobile or tractor
and enclose two 3-cent
stamps. Send me Handy
Oil Can Free. Please give
nearest shipping point in
state and quote prices on
items I have marked. I will be
in the market about.....
(Give date above)

I use.....gals. gasoline per year

I use.....gals. motor oil per year

I use.....lbs. axle grease per year

I use.....auto grease per year. I use.....gals. kero-
sene per year. I use.....gals. tractor oil per year.

My name is.....

R. F. D.....Postoffice.....

County.....State.....

Tear or Cut Out — Mail Today

NOTE: This can will not be sent unless
you give make of your auto or tractor.

A "365" Day Liniment

YOU ARE SAYING TO YOURSELF—
 "If I only knew of something to stop
 that Backache—help my Rheumatism—cure my
 Neuralgia, I would send and get it at once."

Get It. Gombault's Caustic Balsam will give you immediate
 Relief. A Marvelous Human Flesh Healer and a never failing
 remedy for every known pain that can be relieved or cured by
 external applications. Thousands testify to the wonderful healing and
 curing powers of this great French Remedy. A Liniment that will
 soothe, heal and cure your every day pains, wounds and bruises.

Gombault's Caustic Balsam The Great French Remedy Will Do It

It Helps Nature to Heal and Cure. Penetrates, acts quickly, yet is
 perfectly harmless. Kills all Germs and prevents Blood Poison. Nothing
 so good known as an application for Sores, Wounds, Felons, Exterior
 Cancers, Burns, Carbuncles and Swellings.

"I had a bad hand with four running sores on it. The more I doctored the
 worse it got. I used Caustic Balsam and never needed a doctor after that."
 —Ed. Rosenberg, St. Ansgar, Ia.

Mrs. James McKenzie, Edina, Mo., says: "Just ten applications of
 Caustic Balsam relieved me of goitre. My husband also cured eczema with it,
 and we use it for corns, bunions, colds, sore throat and pain in the chest."

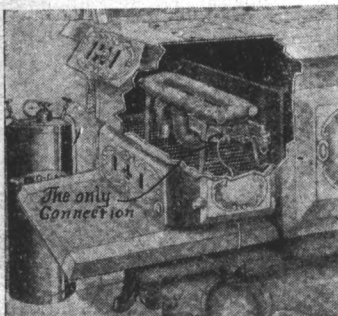
A Safe, Reliable Remedy for Sore Throat, Chest Cold, Backache,
 Neuralgia, Sprains, Rheumatism and Stiff Joints. Whenever and
 wherever a Liniment is needed Caustic Balsam has no Equal.

Dr. Higley, Whitewater, Wis., writes: "I have been using Caustic Balsam
 for ten years for different ailments. It has never failed me yet."

A Liniment that not only heals and cures Human Flesh, but for years
 the accepted Standard veterinary remedy of the world.

Price, \$1.75 per bottle at all Druggists or sent by us express prepaid.
 Write for Free Booklet and read what others say.

THE LAWRENCE WILLIAMS CO., Cleveland, Ohio



OXO-GAS HEATERS

The ONE and ONLY kerosene burner to stand the test.
 Hundreds in Michigan giving universal satisfaction for
 years. Convert your kitchen stove into a gas range
 and enjoy life. Do away with coal or wood, ashes,
 dirt and WORK. This burner produces a perfect
 blue flame, an even baking heat, and insures a warm
 kitchen in the coldest weather. It runs from 5 to 8 hours
 on a gallon of kerosene. We also have the 10 inch
 circular burner for round heating stoves. Price of either
 \$30.00 complete, including gas producer and burner, tub-
 ing, pump and tank. Anyone can install in 15 minutes.
 Order yours now. **OXO-GAS LIGHTING SYSTEMS,**
 each light 300 candle power. Positively superior to elec-
 tricity in quality. Five gallons of kerosene will light the
 average house from four to six weeks. Cost of lighting
 systems average \$12 per light. Write for complete information.

OXO-GAS COMPANY, 2309 Woodward Ave., Detroit. The oldest established kerosene special-
 ty house in Michigan, with an enviable record for reliable dealing.
 We wish to be represented by good live agents in every district.

I Want to Send You My New GATE BOOK

of "Can't-Sag" Gates

FREE!

Just send me your name and address. I will
 mail you my big new Gate Book free—postpaid.
 Quotes prices over than it costs you to build homemade
 wood gates. Can't-Sag Gates are the only farm gates that are

GOOD Enough to Use ANYWHERE
CHEAP Enough to Use EVERYWHERE

Always hang straight and true.
 Never sag, drag or warp or twist out of
 shape. No nails used. No wood joints. Every
 board double bolted between eight angle steel up-
 rights. Self-locking hinges—won't injure stock—easily
 repaired—outlast several all wood, steel, wire or gas pipe gates.
 Cost less than any other gates you can build or buy. Nearly a
 million now in use. Write for free Catalog today.

(1) ALVIN V. ROWE, President
 ROWE MFG. CO., 131 Adams St., Galesburg, Ill.

STAMMERERS— Here's an open door to Freedom

Read this story of a man who
 stammered for twenty years.
 The man himself—Benjamin N.
 Bogue—tells how he worked out
 and perfected a cure and finally
 founded the Bogue Institute.
 Send for his book "Stammer-
 ing, Its Cause and Its Cure." It
 proves that stammering can be
 cured, that there is a way to
 freedom. Descriptions of class
 rooms and dormitories are
 given. Address
 Bogue Institute (Founded 1901)
 7150 Bogue Building
 Indianapolis, Indiana

ONLY \$3 PER MONTH

Not one cent down. This brings you a \$100
 Oliver Typewriter, now \$57. So you save \$43
 and pay at the rate of but 10c per day. This
 is the identical \$100 Oliver, brand new, never
 used, shipped direct from the factory to you.
 Not second-hand—not rebuilt. The same as
 used by many of the biggest concerns; over
 700,000 Oliveters sold.



Write today for our
 new book, "The Type-
 writer on the Farm."
 Then you may order
 an Oliver for Free
 Trial. Easy to learn.
 Write today.

The Oliver Typewriter Co.
 3911 Oliver Typewriter Bldg.
 Chicago, Ill. (12-07)

FENCE

Direct to Farmer
 at Wire Mill Prices

CATALOG FREE
 KITSELMAN BROS. DEPT. 278 MUNCIE, INDIANA

FREE. LAMP OR LANTERN

Akron Gas Lamps and Lanterns
 make best, cheapest light, use gas-
 oil, kerosene, or alcohol. Dependable,
 Permitted by Insurance Companies.

GIVES 400-CANDLE POWER
 Abundance of bright, clear, soft,
 steady light—restful to eyes. Fully
 guaranteed. Agents WANTED. All
 or spare time. Outfit free. Exclu-
 sive territory. Write for prices and
 FREE catalog. Sold at wholesale in
 open territory.

AKRON GAS LAMP CO., 381 GAS BLDG., AKRON, OHIO

"Beyond the Frontier"

(Continued from page 18).

left my face, and there was sneer in
 his voice as he answered.

"Bah! I am not in love to be played
 with by a witch. Perchance 'tis not
 easy for you to lie. Well, we will see.
 Look within the alcove, Cassion."

The Commissaire was there even be-
 fore the words of command were ut-
 tered, and my heart seemed to stop
 beating as his heavy hand tore aside
 the drapery. I leaned on the desk,
 bracing myself, expecting a blow, a
 struggle; but all was silent. Cassion,
 braced, and expectant, peered into the
 shadows, evidently perceiving nothing;
 then stepped within, only to instantly
 reappear, his expression that of disap-
 pointment. The blood surged back to
 my heart, and my lips smiled.

"No one is there, Monsieur," he re-
 ported, but the window is open."

"And not a dangerous leap to the
 court below," returned La Barre. "So
 far you win, Mademoiselle. Now will
 you answer me—were you alone there
 ten minutes ago?"

"It is useless for me to reply, Mon-
 sieur," I answered with dignity, "as it
 will in no way change your decision."

"You have courage, at least."

"The inheritance of my race, Mon-
 sieur."

"Well, we'll test it then, but not in
 the form you anticipate." He smiled,
 but not pleasantly, and resumed his
 seat at the desk. "I propose closing
 your mouth, Mademoiselle, and plac-
 ing you beyond temptation. Monsieur
 Cassion, have the lieutenant at the
 door enter."

I stood in silence, wondering at what
 was about to occur; was I to be made
 prisoner, or what form was my punish-
 ment to assume? The power of La
 Barre I knew, and his stern vindic-
 tiveness, and well I realized the fear
 and hate which swept his mind, as he
 recalled the conversation I had over-
 heard. He must seal my lips to pro-
 tect himself—but how? As though in
 a daze I saw Cassion open the door,
 speak a sharp word to one without,
 and return, followed by a young officer,
 who glanced curiously at me, even as
 he saluted La Barre, and stood silently
 awaiting his orders. The latter re-
 mained a moment motionless, his lips
 firm set.

"Where is Father Le Guard?"

"In the Chapel, Monsieur; he passed
 me a moment ago."

"Good; inform the pere that I desire
 his presence at once. Wait! know you
 the fur trader, Hugo Chevet?"

"I have seen the man, Monsieur—a
 big fellow, with a shaggy head."

"Ay, as savage as the Indians he has
 lived among. He is to be found at
 Elclair's wine shop in Rue St. Louis.
 Have your sentries bring him here to
 me. Attend to both these matters."

"Yes, Monsieur."

La Barre's eyes turned from the dis-
 appearing figure of the officer, rested
 a moment on my face, and then smiled
 grimly as he fronted Cassion. He
 seemed well pleased with himself, and
 to have recovered his good humor.

"A delightful surprise for you, Mon-
 sieur Cassion," he said genially, "and
 let us hope no less a pleasure for the
 fair lady. Be seated, Mademoiselle;
 there may be a brief delay. You per-
 ceive my plan, no doubt."

Cassion did not answer, and the gov-
 ernor looked at me.

"No, Monsieur."

"And yet so simple, so joyful a way
 out of this unfortunate predicament. I
 am surprised. Cassion here might not
 appreciate how nicely this method will
 answer to close your lips, but you, re-
 membering clearly the private confer-
 ence between myself and Colonel Del-
 guard, should grasp my purpose at
 once. Your marriage is to take place
 tonight, Mademoiselle."

"Tonight! my marriage! to whom?"

"Ah! is there then more than one
 prospective bridegroom? Monsieur

Cassion surely I am not in error that
 you informed me of your engagement
 to Mademoiselle la Chesnayne?"

"She has been pledged me in mar-
 riage, Monsieur—the banns published."

I sat with bowed head, my cheeks
 flaming.

"Tis then, as I understood," La
 Barre went on, chuckling. "The lady
 is over modest."

"I have made no pledge," I broke in
 desperately. "Monsieur spoke to my
 Uncle Chevet, not I."

"Yet you were told! You made no
 refusal?"

"Monsieur, I could not; they arrang-
 ed it all, and, besides, it was not to be
 until Monsieur returned from the west.
 I do not love him; I thought—"

"Bah! what is love? 'Tis enough that
 you accepted. This affair is no longer
 one of affection; it has become the
 King's business, a matter of state. I
 decide it is best for you to leave Que-
 bec; ay! and New France, Mademoi-
 selle. There is but one choice, impris-
 onment here, or exile in the wilder-
 ness." He leaned forward, staring into
 my face with his fierce, threatening
 eyes. "I feel it better that you go as
 Monsieur Cassion's wife, and under his
 protection. I decree that it is so you
 shall go."

"Alone—with—Monsieur Cas-
 sion?"

"One of his party. Tis my order
 also that Hugo Chevet be of the com-
 pany. Perchance a year in the wilder-
 ness may be of benefit to him, and he
 might be of value in watching over
 young De Artigny."

Never had I felt more helpless,
 more utterly alone. I knew all he
 meant, but my mind grasped no way
 of escape. His face leered at me as
 through a mist, yet as I glanced aside
 at Cassion it only brought home to me
 a more complete dejection. The man
 was glad—glad. He had no conscience,
 no shame. To appeal to him would be
 waste of breath—a deeper humiliation.
 Suddenly I felt cold, hard, reckless!
 ay! they had the power to force me
 through the unholy ceremony. I was
 only a helpless girl; but beyond that I
 would laugh at them; and Cassion—if
 he dared—

The door opened, and a lean priest
 in long black robe entered noiselessly,
 bending his shaven head to La Barre,
 as his crafty eyes swiftly swept our
 faces.

"Monsieur desired my presence?"

"Yes, Pere le Guard, a mission of
 happiness. There are two here to be
 joined in matrimony by bonds of Holy
 Church. We but wait the coming of
 the lady's guardian."

The pere must have interpreted the
 expression of my face.

"Tis regular, Monsieur?" he asked.

"By order of the King," returned La
 Barre, sternly. "Beyond that it is not
 necessary that you inquire. Ah! Mon-
 sieur Chevet! they found you then? I
 have a pleasant surprise for you. Tis
 hereby ordered that you accompany
 Commissaire Cassion to the Illinois
 country as interpreter, to be paid from
 my private fund."

Chevet stared into the governor's
 dark face, scarce able to comprehend,
 his brain dazed from heavy drinking.

"The Illinois country! I, Hugo Che-
 vet? Tis some joke, Monsieur."

"None at all, as you will discover
 presently, my man. I do not jest on
 the King's service."

"But my land, Monsieur; my niece?"

La Barre permitted himself a laugh.

"Bah! let the land lie fallow; 'twill
 cost little while you draw a wage, and
 as for Mademoiselle, 'tis that you may
 accompany her I make choice. Stand
 back; you have my orders, and now
 I'll show you good reason." He stood
 up, and placed his hand on Cassion's
 arm. "Now my dear Francois, if you
 will join the lady."

(Continued next week.)



Fertilizer Feeds the Crops That Feed the World

TWO HUNDRED MILLION people eat foods grown largely by the aid of commercial fertilizer. In the United States alone nearly seven million tons of fertilizer are used annually.

The Fertilizer Industry performs a most valuable service in searching the four corners of the earth, gathering sulphur from Spain, nitrogen from Chili, phosphate from Florida and Tennessee, and potash from the West; in recovering waste materials from slaughter houses, factories and cities; in reaching up into the air and down into the bowels of the earth for newer and cheaper forms of raw materials; and then manufacturing the whole into a product, definite in composition and convenient in form, which can be transformed into essential life-giving foods.

The machinery, buildings and equipment necessary to perform this great service represent an investment running high into the millions of dollars.

Without fertilizer, agriculture would deteriorate. With more fertilizer, agriculture will improve. The use of fertilizer is rapidly becoming universal, and the best use for the greatest profit should interest every farmer wherever located.

Have You Investigated the Possibilities?

Old theories are being discarded. New fields for profitable use of fertilizer are rapidly developing. Have you thought of fertilizing that weedy, run-down pasture? Do you know that fertilizer can help you to avoid soft corn? escape the Hessian Fly? overcome drouth? save farm labor? get higher prices? Study fertilizer. Let fertilizer make bigger profits for you.

Write for our interesting bulletins on fertilizer usage

**Soil Improvement Committee
of the National Fertilizer Association**

1413 The Munsey Bldg.
Baltimore

913 Postal Telegraph Bldg.
Chicago

SALZER'S 164 PAGE SEED CATALOG
(40 Pages in Natural Colors)

A postcard will bring it. 51 years' quality standard behind every sale whether "a packet or carload."

Write for your copy today

LA CROSSE, WIS.
1868-1919

America's Largest Mail Order Seed House

IF IT IS ANYTHING IN SEEDS WE HAVE IT
FOR FARM, GARDEN OR LAWN

Vegetable Seeds—Flower Seeds—Clovers—Alfalfa—Timothy—Sudan.
Seed Corn—Seed Wheat—Seed Oats—Plants—Seed Potatoes—Rape.



It has always been our policy to supply the highest quality seeds humanly possible to grow, so that every purchase, no matter how small or how large, will, in results and satisfaction, continue to retain for us the good will and patronage responsible for our present large business.

JOHN A. SALZER SEED COMPANY

"America's Headquarters for Field Seeds"

Box 135 La Crosse, Wis.

GRASS SEED

FREE SAMPLES

Wonderful Value Wholesale Prices Profits Divided with customers. Don't fail to investigate these bargains. Recleaned Timothy \$4.75 bu., Alfalfa \$8.90, Alsike Clover and Timothy, Sweet Clover and other Grass and Field Seeds at unusually low prices. All sold subject to State or Government Test under an 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, Ill.

CLOVER AND TIMOTHY BARGAIN

Red Clover and Timothy mixed—the standard grasses cannot be surpassed for hay or pasture. Contains large per cent clover, just right to sow. Thoroughly cleaned and sold on approval, subject to government test. Ask for this mixed seed if you want our greatest bargain. Have Pure Clover, Sweet Clover, Timothy and all Field and Grass Seeds. Don't buy until you write for free samples and 116-page catalog.

A. A. BERRY SEED CO., Box 631, Clarinda, Iowa

Seeds Wanted

Red Clover, Alsike, Sweet Clover Rye and Vetch mixed, Ear Corn, Peas, Sweet Corn, White Kidney Beans, some varieties of Garden Beans, etc. Write us stating what you have, send samples with prices, or we will make offers. Our 1919 Garden and Field Book will be ready to mail about Jan. 1st. A request will bring you one.

The C. E. DePUY CO., Pontiac, Mich.

SWEET CLOVER

Easy to start. Grows anywhere. Not only a good fertilizer, but produces immense crops. Big money-maker. Crops worth \$50 to \$125 per acre. Greatest forage plant that grows. You cannot miss it by sowing our superior scarified seed.

A. A. BERRY SEED CO., Box 631, CLARINDA, IOWA

TIMOTHY Wholesale Prices

Extraordinary big values. New tested recleaned seed. Quality guaranteed. Sold subject to your approval. Lowest prices on Sweet Clover, Alsike, Blue Grass, Clover, Alfalfa and mixed grass and all field seeds. Samples, prices and big valuable profit-sharing Seed Guide Free.

AMERICAN MUTUAL SEED CO., Dept. 331, CHICAGO, ILLINOIS

EVERGREENS HILL'S 38 Hardy, Tested Varieties

Fine for windbreaks, hedges and lawn planting. All hardy, vigorous and well rooted. We ship everywhere. Write for free Evergreen book and 50 Great Bargain sheet.

D. HILL NURSERY CO., Box S230 Dundee, Ill.

SEED CORN

12 varieties, sack gathered, Northern grown, shipped upon approval. Our 112-E holds world's record yield for Northern variety. Free cir. C. H. & J. Graves, Antwerp, O.

SEED CORN FOR SALE

Golden Dent long grown and acclimated in Michigan. Deep kernels, large ear and stalk. A heavy cropper. In ear 70 lbs. \$5.00 Shelled per bu. \$4.00.

C. B. COOK, R. 1, Owosso, Mich.

Mention the Michigan Farmer when writing Advertisers



Sheep Needed on Michigan Farms

(Continued from page 3).

pastures, makes the business distinctively attractive to the farmer who likes sheep and is prepared to give them good care and good feed grown especially for their use.

In beginning in the sheep business a flock of healthy and robust range ewes will give a good account of themselves if given the right kind of treatment. These ewes with the use of well-bred rams will make money for their owners. It is not to be advised that the farmer who knows not the sheep and its ways should plunge heavily into the breeding business; that is not to be desired. But a start may be made with a small band of ewes and the operations gradually increased up to the size of the flock he desires to maintain on his farm. There is no more profitable use to which grasses, forage crops and grains grown on the farm can be put than to the production of the best grade of wool and mutton. The American farmer breeding sheep carefully from the best wool and mutton producing strains may enjoy a good market for his products every day in the year. He will not find it necessary to invest a lot of money in expensive buildings so that he can raise winter lambs unless he finds that he can add to his profits by so doing. He will find, however, that he must treat his sheep in a manner enjoyed by them, according to their nature; start right with good breeding ewes, use only the best mutton rams and turn the finished product onto the market in the shape for which the packers are willing to pay fancy prices. Good prices may be obtained for either the winter lamb or the mature wether, or all ages between, providing always that the animal is properly fed and protected from the weather. Sheep must be properly cared for, that much may be believed before one invests in a flock of breeding ewes. Given good care they are the most pleasant and profitable farm companions that can be kept around.

To make sheep pay satisfactory returns on high-priced land one must have superior sheep, such as the market pays a premium for, and an abundance of cheap feeds, such as grass, forage and silage. If grain is fed, except when the sheep or lambs are being crowded for a purpose, it should be for a short time. With crops like alfalfa, clover, bluegrass, rape, corn, bran and oats one will have the best of feeds. No hay quite equals alfalfa for sheep or lambs. One may combine alfalfa hay and corn so as to furnish a nearly balanced ration. Some of the most successful feeders and producers of fancy winter lambs rely almost entirely on alfalfa and corn produced on their own farms. Such a ration reduces the cost of production to a minimum. Clover is not so rich in protein as alfalfa but when fed along with corn and just enough bran and linseed oil meal to balance up the deficiency it makes rapid and economical gains. Bluegrass is an excellent pasture crop and furnishes the ewes and lambs a properly balanced ration. Rape is a very succulent plant, a member of the cabbage family, and very much prized by the most skillful feeders. The large tender leaves, which are easily grown, especially in the cooler parts of the year, are greatly relished by the sheep and lambs. In most sections of the corn belt sheep feeders should rely more upon rape for early fall feeding. At the Ontario station Professor Shaw

reported that one acre of rape sustained twelve lambs two months, and that he figured the value of the rape, as a second crop, to be \$16.80. Other experiments at South Dakota, Wisconsin and Michigan show that rape has great value in economical sheep feeding. Silage is just beginning to play a more important part in sheep feeding in Michigan. Men who have given it a fair trial find it very valuable in reducing the cost of keeping the breeding ewes and finishing the lambs for market at times when rape and other forage crops are not available.

On many farms economies in sheep feeding may be practiced by pasturing the sheep on wheat and rye fields and sowing rape in the corn fields and turning the lambs into the field to consume the rape and lower blades of the corn plants. Pasturing the ewes and lambs on the wheat and rye fields in no respect damages the crops if they are taken off at the right time. In the case of wheat that is making too rank a growth grazing improves the quality and yield of the grain. If the ground is wet and heavy the sheep are so light and their feet so small that they do not injure the ground by tramping it. By seeding rape in corn and feeding it down with sheep the field is made to give a supplementary reward. No grain need be fed and the lambs will make a sufficient gain in weight to insure a profit well worth seeking. Old ewes that have passed their breeding usefulness can also be made fit for market by turning them into a rape and corn field, but, as a rule, it is better not to turn them in until after the corn has been harvested. Still further economies may be practiced by allowing the sheep to clean up the weeds and undesirable growths of grasses in the pastures and meadows, and along the fence rows.

Canadian field peas and oats are one of the best crops for early spring sowing, and in case the pastures fail to make a good growth in the spring they will stimulate the milk flow and hasten the maturity of the lambs. The ground should be well prepared before seeding to secure quick germination and rapid growth. Two bushels of oats and one bushel of peas make a desirable seeding. Good results follow the mixing of the seed and drilling both quite deep into the soil. Legume crops are always valuable and they will generally pay the expense of cultivation by increasing the fertility of the land.

Rye is one of the earliest supplementary forage crops within the reach of every flockmaster, especially those in a northern climate. Rye, of course, is a winter crop and must be sown the previous fall. By having a field of rye for early grazing it is possible to delay turning the flock on the pastures until the grass has made a good start in the spring. Many farmers who have land from which the fertility has been lost will find rye a very desirable crop to grow for sheep pastures.

There is a wide variety of suitable crops adapted to the soil and climate of our farms that can be profitably grown for grazing, and that will provide a better quality of flesh and wool than those grown on natural grasses. Many of these crops can be sown as catch or secondary crops and grazed immediately after the harvest of the main crop. By giving more attention to growing these crops the soil can be

CLOVER

BUCKHORN FREE
GUARANTEED SATISFACTORY
Biggest values in clover ever offered. Don't fail to write us for samples. We can save you many dollars on Clover Seed. Don't pay two prices. Buy from World's Largest Mail Order Seed House at Bargain Prices. Have new, recleaned Alfalfa, \$8 bu.; Sweet Clover, \$4.95 bu.; Timothy \$4.50 bu. Bargain price on Alsike & Tim. mix. Other seeds in proportion. No risk buying from us. "Your money back if you want it." Satisfaction our first aim. Clover crop short. Write before advance. Send for free samples and big 116-page catalog.

A. A. BERRY SEED CO., Box 831, CLARINDA, IOWA

FREE

BROWN'S BARGAIN FENCE BOOK

JUST OUT—My New "direct from factory" Bargain Book on Fence and Gates. Prices way below competition. Values bigger than ever. Get it today. I Pay ALL Freight. Brown Fence lasts longest because built strongest, stiffest. All wires same size, heavily galvanized. 150 styles. Also Gates, Lawn Fence and Barb Wire at bargain prices. Sample and book free, postpaid.

Brown Fence & Wire Co., Dept. 249, Cleveland, O.

SCOTT'S SWEET CLOVER

Hulled and scarified white sweet clover is about ten dollars per bushel cheaper than red. (Unhulled cheaper yet.) As it is a biennial, taking the place of red in the rotation and any amount better as a land builder, it is an economical substitute. Winter sowing is the best. Ask for samples and prices as well as our catalogue telling "How to Know Good Seed". All other kinds of field seeds too.

O. M. SCOTT & SONS CO., 164 Main St., Marysville, Ohio

PURE AND PURE

SCHOENER - HANDY GARDEN TOOLS

4 Tools That Fit on 1 Handle. Can be set at any angle. Saves stooping and bending.

Sold by Most Dealers. Schoener adjustable garden tools are sold by most dealers. If your dealer cannot supply you, let us know, and we'll tell you where to get them. Illustrated folder on request.

SCHOENER MFG. CO., 415 Schoener Bldg., St. Cloud, Minn.

materially improved in fertility during the time these crops are being grown for sheep feed. With a given area of productive land the farmer can sustain a larger flock of sheep and more other stock to convert his farm feeds into finished products for market and at the same time build up the fertility of his soil faster than by the old system of natural grass, hay and grain feeds.

There is little danger of the sheep business being overdone for many years to come. The tendency at the present time is toward an increased consumption of the better grades of mutton and as soon as our people cultivate a taste for these prime cuts there is sure to be an increasing de-

mand for them. Then, too, American farmers are just beginning to understand the art of growing better mutton. The large areas of western grazing land that are being closed is sure to make mutton raising more profitable on the small farms. Well finished mutton that is bred right and fed right will probably never be cheap again. It is very scarce in most of our markets at the present time. The advantages are all on the side of the American farmer who begins in a moderate way to meet the demands of an increasing population. It is very evident that we need more sheep on our farms to utilize our home-grown roughage and grain feeds and convert them into mutton and wool.

The Conservation of Farm Forces

By E. L. Vincent

FARMERS have always been conservators of farm forces—energy, soil fertility, acreage under cultivation, power devoted to the production of crops, everything, in fact, related to the farming business. We have come to a time, however, when it is more than ever necessary to prevent losses and make the most of every form of capacity. Not yet have we come to realize the possibilities within our reach.

One thing I have tried to be insistent upon, and that is that we shall not break ourselves down under the stress of short help and increased demand for farm produce. It is easy to work beyond one's strength. Sometimes you hear it said that work never hurts anybody; that it is fret and care that kill. This is, in my experience, not altogether true. I could count up many men and women who have put every bit of strength and energy into their farm work, so that they have given out and been compelled to leave the farm. Had these men been more moderate in their devotion to every-day tasks, they might have lasted a great deal longer. It is a distinct loss to the nation and the world at large, when a farmer and his wife are forced to step down. So it is a good thing to keep, as far as possible, within the bounds of reason in doing our work. My boy has always made it a point in his farm operations to get around before sundown, chores all done and everything put in shape for the night. This is wise. It gives him and his men a chance to sit and read or do something else they like to do before bedtime. The first great force to conserve is strength.

It is encouraging to note how much more care our farmer folks are taking of their machinery. We have been charged with being wasteful in this respect. But we are being forced by the exigencies of the times to make our machinery last just as long as we can. Our old mower, for example, which we thought was worn out and fit only for the scrap heap, has been fixed up so that it has stood two years more of service and there is a possibility of still further use. The same way with other tools. By careful usage and shelter we can add much to the life of our machines.

Again, there are savings that can be made by purchasing grain early in carlots. We have probably saved a hundred dollars this year by buying one kind of grain feed months earlier than we have been in the habit of doing. By putting their orders together a number of farmers may buy a carload or more of grain to be divided up as may be needed. Some of our men are in the habit of giving their notes in payment for such shipments, and after paying interest they believe, with no reason for doubt, that they save money.

Then, too, there is the conservation that makes meadows, pastures and tilled land produce more. Many farmers are handicapped by the lack of

good pastures. We could keep a number more cows were the brush and stuff cut off. Every bush cut adds so much to the productivity of our lands. The one more cow we may keep is clear gain.

"By the Way"

NO ARMISTICE FOR THEM.

In my yard is a henhouse.
I have a little flock
Of Leghorns white, and Cochins,
And one's a Plymouth Rock.
I watch and pet and tend them—
They have the best of care,
And I have built a run-way—
They walk and take the air.
I've long been waiting, hoping,
And watching for the day,
When work shall be rewarded,
When they begin to lay.
While eggs are high per dozen,
And going higher, too,
And corn and feed expensive,
I'm getting rather blue.

I've done the best for them I knew,
They've simply lived in clover;
I wonder if those doggone hens
Don't know the war is over?

N.J.S. in Grand Rapids Press

TERRIFYING THOUGHT.

It was in a church yard. The morning sun shone brightly and the dew was still on the grass.

"Ah, this is the weather that makes things spring up," remarked a passerby, casually, to an old gentleman seated on a bench.

"Hush," replied the old gentleman, "I've got three wives buried here."

HE HAD.

The blushing bride-elect was rehearsing the ceremony about to take place.

"I shall expect you to give me away, papa," she said.

"I'm afraid I've done it already, Caroline," replied the old man, nervously. "I told your Herbert this morning you had a disposition like your mothers'."

A DANGEROUS JOB.

Grocer—"Yes, I want a smart young man, to be partly outdoors and partly behind the counter."

Applicant—"Then what happens to me when the door slams?"

BE EXPLICIT, PLEASE.

Officer (as company is temporarily about to vacate trench which has been reported mined)—"You two will remain here, and if there is an explosion you will blow a whistle. You understand?"

Private Spuds—"Yes, sir. Will we blow it going up or coming down, sir?"

Cousin Bill says: "Truth is like a rubber band; stretch it too far and it will break and become useless."



You Can Now Get a Pair!

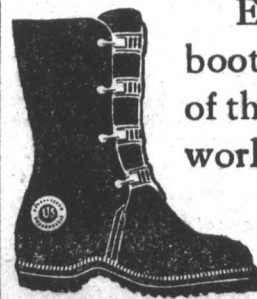
The trenches in Flanders are empty and it is no longer necessary to keep supplying the boys "over there" with U. S. "Protected" rubber boots.

So, instead of making trench boots almost exclusively as we have been doing, we have reverted to our before-the-war manufacturing program, and will soon make up the shortage that exists in the supply of heavy-service, double-duty U. S. "Protected" rubber footwear.

Uncle Sam has furnished "our boys" with the best rubber boots that money can buy, and, in both the Army and Navy, there probably are as many U. S. "Protected" rubber boots as all other brands combined.

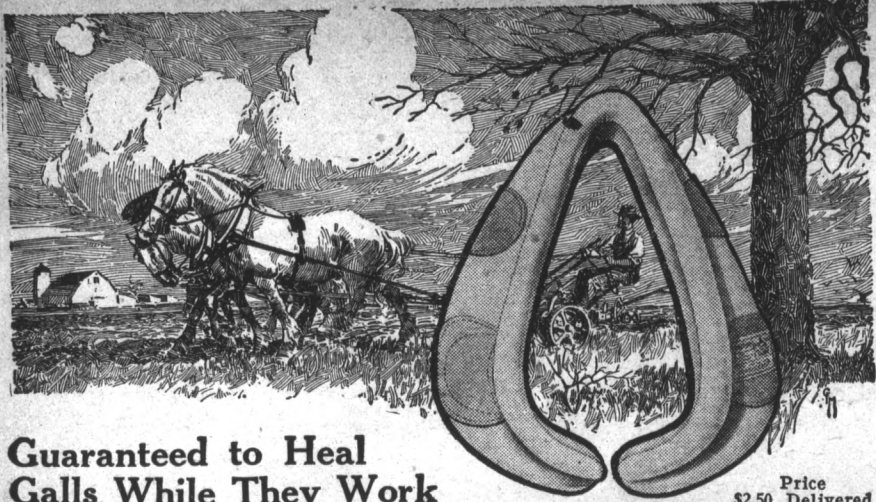
Outdoor workers everywhere recognize the dollar-for-dollar value of "U. S." quality. It means rubber boots of the sturdiest construction, reinforced where the wear is greatest, yet entirely comfortable. Longer wear insures saving of money.

Every pair of U. S. "Protected" rubber boots bears the "U. S. Seal"—trade mark of the largest rubber manufacturer in the world. Look for it. It is your protection.



United States Rubber Company
New York

U. S. Rubber Footwear



Guaranteed to Heal Galls While They Work

Sweat and chafing cause galls. Make a horse collar that will absorb sweat—move with the shoulder muscles, instead of chafing against them—and you have a collar that puts an end to galls. That's just what has been accomplished in the

Langford
HUMANE HORSE COLLAR

Absorbs Sweat

Made of closely woven army duck—stuffed with soft, springy cotton fiber.. This fiber

THE POWERS MFG. CO.,
Box 134 Waterloo, Ia.

does not hold heat. It absorbs sweat and impurities from sores. Keeps shoulders dry, cool and free from irritation.

Open at the Throat

The open throat makes the Langford conform itself to the shoulders—gives pulling muscles full play—moves with the shoulders, instead of rubbing and chafing against them. Easy to put on. Will not pack or harden. Cannot sweeney. Often last three or more seasons. Costs one-fourth as much as leather. A collar and pad combined.

Try this open-throated cotton collar. Use it on the horse with sorest shoulders. If it fails to heal, return collar and get your money back. If your dealer cannot supply you, send \$2.50, state size, and we will send you a collar, charges prepaid. (6-2c)

Trade Mark



Price
\$2.50 Delivered

Our Boys' and Girls' Page

What Shall I Give My Boy

(Continued from page 15).

Boys have a natural liking for machinery. It fascinates them to study and handle tools of all kinds. They do not like to feel that they are not permitted to know the "feel" of the binder, the gasoline engine or any other farm implement. And it certainly is not the part of wisdom to keep them in ignorance of these tools; for the time will come when the father will not be able to do the work that needs to be done. It may be on account of sickness or absence from home, some crop will need attention. The boy is there, and ready to do what must be done; but what if he does not understand the workings of the particular implement that must be called into operation? He may think, "I can do this. I'll try it." But he takes the matter up with something of fear and trembling after all. Things start—then they stop! Something gives way. A valuable machine is injured, it may be spoiled. All for lack of the needed instruction while father was at home or able to show his boy what to do. Many a fine implement

has been thus damaged, and it may be the boy comes in for a scolding that will never be forgotten, but which may lead to a lifelong estrangement.

Far better would it be for the father to say, as soon as his boy is old enough and strong enough to handle the various farm machines "Hurrah, now, my lad! Come and take your first lesson in using this tool! I'll show you what to do. Climb right up on. We'll make it, all right." Thus encouraged, the boy feels confidence in himself and takes hold of things fearlessly. Father is near and if anything goes wrong he will help out. Not only is a good working knowledge of the different tools gained, but the tie of affection binding father and son is strengthened.

I have said little about the things that belong to the finer side of farm life, such as good books, fair chance to go to school and the many privileges that naturally belong to the best farm life. We need to think of all these things, for life is many-sided and a well-rounded character depends upon the things the boy masters in all these different fields.

Club News Items

KENT COUNTY ROUND-UP.

Club leaders and club members from all over Kent county met at the Union School Building in Grand Rapids. Following games in the gymnasium and an exhibit in one of the laboratories, a most excellent luncheon was served at noon. At the close of this luncheon, winners of county championships were announced, awards presented and talks on club work given by Mr. T. J. Newbill, of Washington, D. C.; Principal Gilbert, of the Union School; Glenn Stewart, former Kent County Club Leader; Miss Anna B. Cowles, and Mr. R. A. Turner, State Club Leaders.

Calhoun county held a county round-up on Saturday, December 21. Muskegon held theirs during the week beginning December 16. With the holding of these round-ups or Achievement Days, club work for the year is brought to a formal end. Many of the summer clubs were at once enrolled in the winter projects in handicraft, garment-making and hot school lunch, and so continue their club work throughout the winter.

INDIANA CORN CLUB AWARDS PRIZES.

The contest was won by Carl Bader, a thirteen-year-old boy, with a yield of 73.1 bushels per acre, that cost \$20.30. The average yield of corn produced by the sixteen members was sixty-three bushels per acre. The average for Jefferson county last year was twenty bushels per acre. This in a way, shows interest that the boys have taken and results they have accomplished in the growing of corn.

INTER-COUNTY CORN SHOW.

The Fourth Annual Corn Show of the Farmers' & Merchants' State Bank of Carson City, Mich., was held Wednesday, December 18, and attracted a large attendance. Exhibitors from Gratiot, Clinton, Ionia and Montcalm counties, taking part to the number of one hundred and two.

The corn judging was in charge of J. R. Duncan, of the M. A. C., assisted by Gifford Patch, farm agent for Mont-

calm county. Thirty-three prizes were awarded, which were contributed by the business men of the town. The remaining exhibitors were each awarded a thrift stamp by the bank, which also awarded, as first prize, a beautiful silver trophy cup. Several corn growers contributed one bushel of seed corn, each, which was sold at auction and the proceeds given to the Red Cross

ENROLLMENT WEEK FOR BOYS' WORKING RESERVE.

In order to increase the American production of food stuffs for 1919, and assist the United States government in overcoming the serious food shortage in Europe, the United States Boys' Working Reserve is planning a national enrollment week for January 20-26, 1919. It is the purpose of the Reserve to enlist American boys from sixteen to twenty-one, who can serve as emergency farm help during the coming summer.



Miss Elizabeth R. Cook, who won highest honors in judging Holsteins in the Students' National Contest in judging dairy cattle at the recent National Dairy Show, held at Columbus, Ohio. Miss Cook ranked in fifth place in the contest, which comprised the placing of three classes of each of the four leading dairy breeds and the writing of reasons on two of these classes. She has the further distinction of being the first woman to participate in this contest. She was a member of the Cornell, New York, dairy judging team.

Your Furs Have Extra Value This Season

Be sure you ship where you get every dollar they will bring! Correct grading by experts, proper sorting and handling all mean more to you now than ever before. It will pay you to ship where these things are done—and where prices are paid absolutely on the merits of the furs—and in spot cash! Experienced traders and trappers know—follow their lead.

Ship NOW to

FUNSTEN

Where Most Shippers Get Most Money

Ask for Free Shipping Tags, Market Reports and Trapper's Guide. Funsten always makes good! Over 500,000 shippers deal with us each season. We are agents for big foreign governments—buy and sell millions of dollars worth of furs yearly—work to get most value for you—and send check within 24 hours. Ship to Funsten.

FUNSTEN BROS. & CO. 841 Funsten Building St. Louis, Mo.

RAW FURS WANTED

Owing to scarcity of Labor, and High prices of Material, we issue no Price Lists this year. We prefer to give you the benefit in price for your Raw Furs, which we want badly, and will accept in any quantity.

We remit the day we receive your shipment. We pay all Express or Parcel Post charges; will hold your shipment subject to approval, or return if you so request.

Our references are—Your own Bank, Grocer or Dry Goods Jobber, or your very neighbor, if our shipper.

GROSS, ENGEL & CO.

ESTABLISHED 1888

Capital \$500,000. First Credit

117 WEST 27TH ST., NEW YORK.

TRAPPERS

Know the value of skins, and should be sure they get it.

We Want Your Raw Furs

We promise you fair treatment and absolute satisfaction whatever the size of your shipment. We will spend \$500,000 this season. How much can YOU send us?

One Skin or a Thousand We will grade them carefully and pay you full value. We charge no commissions. We do not claim to be the largest house in the world, but our check will convince you it is worth while dealing with us. WRITE FOR PRICE LIST.

Vreeland Fur Co. 43 Jefferson Ave., Detroit, Mich.

"Saw Wood!" saw wood for yourself, saw wood for your neighbor, saw wood for the Government, saw wood or fire-wood. Use a gasoline drag saw that will do the work of ten men. Write for catalogue. Address S. N. CASTLE & COMPANY, Lock Box 102, Constantine, Michigan

WE WANT VETCH. SEND US SAMPLE. YOUNG-RANDOLPH SEED CO., Owosso, Mich.



Send us your Raw Furs

We want all you can trap, and we'll pay you well for them. The oldest and largest fur house in the world can offer you the highest prices. You don't have to wait, either. When your furs come in, our check goes out immediately. We pay all express and mail charges on consignments of any size.

Send us your name at once, for price list

Revillon Frères

442 West 28th Street New York City

When You Write to Advertisers Please Mention This Paper.

COMMUNITY FAIR.

(Continued from page 16).
The fair should be well advertised and effort should be made to secure exhibits of exceptional quality. For premiums ribbons are usually awarded, rather than cash payments. In securing the exhibits the main purpose should be to secure exhibits from as many persons as possible. As most of the preparation for the fair is made by volunteer workers, the small amount of money required for incidental expenses can be raised by subscription or by the sale of advertising space in the catalogue or on the program. There should be no entry fees or admission charge.

The management of county fairs are beginning to realize the value of the community exhibit as a factor in making the county fair serve its purpose as an agricultural exhibition. Liberal premiums have been offered for these community exhibits, either in cash or in such form as to be of community use, as, for example, reference books on agricultural subjects to be kept in the community library, a watering trough conveniently located, or a drinking fountain.

An interesting county fair, made up of seventy-two community exhibits, was recently held in a county in the middle west. There were no races or sideshows. The ten thousand people in attendance spent their time for two days in visiting and inspecting the exhibits and in wholesome recreation under the supervision of an expert recreational director from a neighboring city. Each community had its booths and the several communities vied with each other in making attractive exhibits of the products of the farm, home, and school.

PIGEON SAVES AIRMEN.

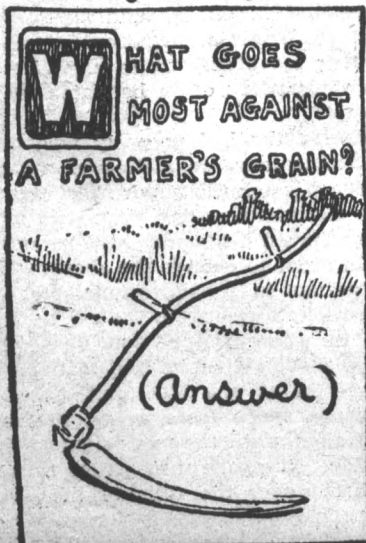
A REMARKABLE instance of a R. A. F. carrier-pigeon saving the lives of two flying officers is reported from Scotland.

A few weeks ago a R. A. F. seaplane engaged upon a submarine patrol over the North Sea was compelled to descend about five miles from the rocky Scottish coast. A heavy sea was running at the time, and the machine was in momentary danger of being dashed to pieces. Realizing their peril the airmen released a pigeon at four p. m. with an urgent message requesting immediate help. Promptly at 4:22 the bird reached its loft, having traversed a distance of twenty-two miles in twenty-two minutes.

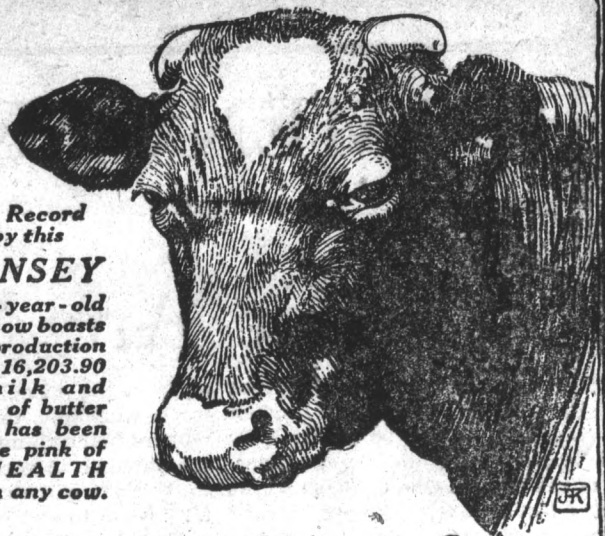
The arrival of the pigeon was the first intimation the authorities received that anything was amiss, and assistance was immediately sent, resulting in the saving of the crew.

When the relief party arrived the airmen were clinging to the wreckage of the machine, which was rapidly breaking up.

Today's Riddle

A Great Record
Made by this
GUERNSEY

This four-year-old Guernsey cow boasts a yearly production record of 16,203.90 lbs. of milk and 855.70 lbs. of butter fat. She has been kept in the pink of health. HEALTH pays big in any cow.



Increase Your Milk Income—Sure

Every cow you own that is less than 100% healthy is losing money for you. And the fact is that 80% of all dairy cows are below a proper health standard.

The vital organs of cows are just as liable to become diseased and sluggish as those of human beings. They need the same kind of treatment—medicinal assistance. Don't make the mistake of overfeeding to bolster up a sluggish system.

KOW-KURE has met with such great popularity among dairymen because it acts directly on the digestive and genital organs, toning them up, making them function properly, and enabling them to throw off disease.

Such ailments as Retained Afterbirth, Barrenness, Abortion, Scouring, Lost Appetite, Bunches and similar troubles, respond quickly to the strengthening influence of KOW-KURE upon the entire system. The result is an almost immediate increase of milk production.

Your druggist or feed dealer sells KOW-KURE, in 60c. and \$1.20 packages. Send for your valuable free book, "The Home Cow Doctor" It tells how to treat all the most common cow diseases and gives much valuable general information.

DAIRY ASSOCIATION CO.
Lyndonville, Vt.

Calf
EnemiesWHITE SCOURS
BLACKLEG

Your Veterinarian can stamp them out with Cutter's Anti-Calf Scour Serum and Cutter's Germ Free Blackleg Filtrate and Aggrassin, or Cutter's Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"

WE WANT VETCH. SEND US SAMPLES
YOUNG-RANDOLPH SEED CO., Owosso, Mich.

For Sale Worthy Seed Oats.
\$1.50 a bu. bags included.
M. H. KNOLL, R. 3, Holland, Mich.

STOP LOSING CALVES
You can Stamp Abortion Out
OF YOUR HERD and Keep It Out

By the use of
DR. DAVID ROBERTS' "ANTI-ABORTION"
Small Expense.
Easily Applied. Sure Results.
Used successfully for 30 years.
Consult DR. DAVID ROBERTS about all animal ailments. Information free. Send for FREE copy of "The Cattle Specialist" with full information on Abortion in Cows.
DR. DAVID ROBERTS VETERINARY CO.
640 GRAND AVE., WAUKESHA, WIS.

WANTED:

Practical farmer capable of managing 400 acre stock farm in Wayne County. Must be thorough, married and furnish good reference. Compensation to be paid according to ability. Box W. E. 21, Michigan Farmer, Detroit, Mich.

ICE PLOWS Plows \$14.85 Up.
TOOLS Wm. H. PRAY, Mfg.
LaGrangeville, N. Y.

Wanted 200 bushels feeding barley send price and sample at once to
HERMAN SALZMAN, Baldwin, Mich.

HOGS.

O. I. C. & Chester White Swine

Strictly Big Type with QUALITY. Have a few spring pigs either sex for sale. They are of the right stamp, good enough to be shipped O. O. D.
NEWMAN'S STOCK FARM, R. 1, Marlette, Mich.

8 Large Type O. I. C. spring boars also 2 prize Jr. yr. boar Mich. State Fair 1918.
CLOVER LEAF STOCK FARM, Monroe, Mich.

O. I. C.'s big type serviceable boars. Yearling sows and gilts bred for spring farrow.
G. P. ANDREWS, Dansville, Mich.

O. I. C.'s a few 250 lb. bred gilts other lighter ones; service boars sold. I ship O. O. D. and pay express.
F. C. BURGESS, R. 3, Mason, Mich.

O. I. C. Big type April boars and bred gilts, with quality from large litters.
W. B. McQUILLAN, Howell, Mich.

O. I. C. Boar, 14 months old. Large fall pigs of either sex.
O. J. THOMPSON, Rockford, Mich.

O. I. C. Serviceable boars sold. Gilts bred for March and April farrow.
H. W. MANN, Dansville, Mich.

BIG TYPE POLAND CHINAS

Spring boar and gilts. Also fall pigs.
Hillcrest Farm, Kalamazoo, Mich.

FOR 25 YEARS

This establishment has been head quarters for Big Type Poland Chinas. We have a nice lot of boars and sows of strictly big type breeding at very low price. Let me know what you want. Bell phone.
JNO. C. BUTLER, Portland, Mich.

Large type P. C. Largest in Mich. Boars all sold. 20 Bred gilts sired by and bred to the best boars the breed can produce, with dams of equal merit, extreme size with quality, come and see them, free livery, expenses paid if not as represented. W. E. Livingston, Farms, Mich.

Big type Poland Chinas. Spring gilts of the best of breeding. With quality from 1000 lb. sire's and 800 lb. dam's. Will be bred to a great son of the noted \$6600 Gertsdale Jones. Also fall pigs.
W. BREWBAKER & SONS, R. 3, Elsie, Mich.

Big Poland Chinas with quality. Spring, summer, and fall pigs, both sex, and bred sows, for sale.
G. A. BAUMGARDNER, R. 2, Middleville, Barry Co., Mich.

Big type Poland China yearling sow bred for April farrow, also sow pigs Aug. and Sept. farrow. Certificates of registry with every hog from
LONE CEDAR FARM, Pontiac, Mich.

Big Type Poland Chinas, Breeding gilts to Bob-o-Link, by The 2nd Big Bob. S. O. B. Leghorn Cocks and Cockerels.
O. L. WRIGHT, Jonesville, Mich.

Large Type P. C. boars all sold. Spring gilts and young tried sows, bred for March and April farrow. Free livery from Augusta.
W. J. Hagelshaw, Augusta, Mich.

Michigan's Champion herd of Big Type P. C. bred sows fall pigs. Come and see them.
E. R. LEONARD, R. 3, Box 53, St. Louis, Mich.

Big type Poland China spring and fall pigs either sex. Shorthorn Bull and bull calves. Price to sell.
ROBERT NEVE, Pierson, Mich.

Big Type Poland Chinas. Spring boars for sale. Booking orders for bred gilts. Inspection invited.
L. L. CHAMBERLAIN, Marcellus, Mich.

L.T.P.C. Gilts bred for April farrow. Fall pigs of either sex; inspection invited.
A. A. FELDKAMP, Manchester, Mich.

Big type P. C. Big boned fellows from Iowa's greatest herds, special prices on spring boars and choice bred gilts.
E. J. MATHEWSON, Burr Oak, Mich.

Mammoth Poland Chinas. March, April, boars and gilts, Cholera immune, double treatment. Clyde Weaver, Mgr., Marshall, Address, Ceresco, Mich.

A FEW choice, large type P. C. Spring boars and gilts, also summer pigs.
CLYDE FISHER, R. 3, St. Louis, Mich.

L.S.P.C. Get a boar, pig sired by Smooth Jumbo the largest boned boar in the state, also by Big Defender.
H. O. Swartz, Schoolcraft, Mich.

Big Type P. C. boar and bred gilts. Choice Aug. pigs at a bargain.
A. A. WOOD & SON, Saline, Mich.

Hampshire spring boars at a bargain, bred gilts now ready to ship.
JOHN W. SNYDER, R. 4, St. Johns, Mich.

SHEEP

Hampshire

Shropshire and Oxford, either sex, send for circular and prices.
KOPE KON FARMS, Kinderhook, Mich.

Hampshires am offering for sale 10 yearling Rams also 5 ram lambs
F. A. SIMMONS, Rockford, Mich.

Additional Stock Ads. on Page 287



It pays to buy TixTon-Mix with salt the year

around keeps flock healthy and free from stomach worms and ticks. A \$5.00 box makes \$60.00 worth of medicated salt—saves you big money—A \$2.00 size box of TixTon-Mix by parcel post will medicate a barrel of salt.

Write for club offer—booklet on "Nature and Care of Sheep"

PARSONS CHEMICAL WORKS

Leona Park Experiment Station, GRAND LEDGE, MICH.



Uncle Sam's Fighting Boys Wear IRONCLAD KHAKI Twill Cloth

You men and women of his "home guard" should wear this patriotic economy cloth, too. It's fast color and wears like leather.

OVERALLS, COVERALLS, SHIRTS and PANTS

made of the genuine Ironclad Khaki (the kind Uncle Sam uses) carry the yellow "army" label, like the above. Look for it and Guarantee Bond in the garment before you buy.

Write today for free samples of Ironclad Khaki Cloth, and Miss Ironclad Khaki, the kid glove finish ladies' overall cloth.

Garments on sale by dealers—everywhere
FRANKLIN MANUFACTURING CO.
Manufacturers of Cloth Only

111 Market Place - Baltimore, Md.

Running Water and Electric Light



The Milwaukee System requires no water storage tank therefore never freezes or fouls. Fresh water direct from the well, spring or cistern—to any part of the house, barn or yard and electric lights, too, are now within the reach of every country home owner. The installation is greatly simplified by using the



in connection with the Milwaukee Electric Lighting Plant as one engine furnishes power for both. Our illustrated book tells all about it. Mailed free.

MILWAUKEE AIR POWER PUMP CO.
866 Third Street, MILWAUKEE, WIS.

"What Will the Baby be Like?"

A question every expectant mother asks a dozen times a day. Does she know that the answer largely depends on her own health, and that her own intestinal system, which is especially liable to constipation, must be kept clean or it will encourage the breeding of serious disease? There is sound medical advice to every prospective mother in a booklet called

"The Days That Go Before"
which will be sent on request, free, to any address. Write today—it may save your baby's future.

Nujol Laboratories
STANDARD OIL CO. (NEW JERSEY)
50 Broadway, New York



30 Days FREE Trial

No plumbing. Odorless. Sanitary. Endorsed by State Health Boards. Buy Direct from the Maker. **The Kawnear**. Sent fully equipped. Anybody can set it up. No daily attention. Guaranteed 10 years. Makes home up to date, comfortable, healthful, at small cost. Try a Kawnear in your own home 30 days FREE.

FREE Book Send your name and address for illustrated book and 30 days' free trial offer. No obligations to you. It's free. Write today.
Federal Sash & Door Co., Dept. 4811 Kansas City, Mo.



Beacon Lamp FREE

Lights Your Home Like Day. 100 Candle Power Incandescent pure white light from (kerosene) coal oil. Beats either gas or electricity. **COSTS ONLY 1 CENT FOR 6 HOURS**. We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to acquire a Beacon Lamp FREE. Write today. AGENTS WANTED.

HOME SUPPLY CO., 28 Home Bldg., Kansas City, Mo.

When writing to advertisers please mention the Michigan Farmer.

"To Love and to Labor is the Sum of Living"—Moore

WOMEN'S SECTION



What Are You Afraid Of?

THERE are one or two words that I should cut out of the English language if by so doing they could be removed from the consciousness of the people. One of these words is fear. Not that fear has played such a big part in the lives of English speaking people as in those of some other nations. If it had, we should not today have democracies. Certainly it was not fear that carried our boys ahead on the western front. For they did not fight either through fear of their officers or of German kultur, but from sheer love of liberty. And the spirit with which our men fought ought to show all rulers the superior value of love to fear as a compelling motive.

But while fear of some sorts is foreign to our make-up, yet there are forms of fear which play havoc with all too many of our lives. Most of us have a pet bogie of some sort, which, while it seems too silly for words to our friends, is to us a regular old man of the sea. Don't you know people with comfortable incomes who are afraid to spend a cent for fear they'll die in the poor house? And there are the mothers who won't let Johnnie go swimming for fear he'll get drowned, never seeming to see that it is the boy who knows how to swim who is usually safe. And other mothers who make Mary wear flannel summer and winter for fear she'll take cold.

There are the women who are always in a panic for fear they won't get their work done on time, though they always have pulled through. And the men who are constantly stewing for fear they'll lose their jobs, and the girls who live in a state of nervous tension for days previous to examinations for fear they won't pass. As a matter

of fact, the most surprised folks on earth would be these same calamity seekers if the things they are afraid of should come to pass. They know very well things will work out all right, but they seem to enjoy keeping in a stew.

Probably the silliest sort of fear, though, is the kind that gets us to spend money for things we can't afford for fear of what folks say. Sometimes it is simply "being a good fellow," and again it is the "good fellow's wife" who spends the money for clothes or furniture so her set won't talk about her. As a matter of fact spending the money probably occasions more gossip among friends than saving it would.



Tan velour delaine is used in this decidedly novel and smart gown. Hudson seal forms the collar and cuffs.

For friends—so-called—have a way of figuring out just what you can afford to spend and calling you a fool when you run in debt to keep up appearances keep their friendship.

I suppose this sort of fear comes from not realizing that the world is a rather large place and your own particular set only takes a tiny corner of it. If you should move into the next township the folks you have been so anxious to please would forget you over night. And you would find that your town's big man had never been heard of in your new community. So why take so much pains to stand in with people? Better stand in with your own self-respect and your conscience. It is the best way to win the respect of others.

Perhaps the most tragic fear is the fear of death. Most of us, happily, can put that off our minds but occasionally we find someone who never gets away from the thought of death. It seems to hang over them always, even though they are in the best of health. I remember one boy of fourteen and a woman of thirty who suffered in this way. They could never talk to anyone for long without referring to their horror of dying. This unnatural fear kept them from enjoying life, and incidentally gave most of their friends cold chills when they were about.

As a matter of fact, what is there to be so afraid of—living or dying. If we play the game square we need fear no one while we live, and surely there will be as little to fear when we pass beyond. Fear is another name for bondage. It has no place in the vocabulary of free men and women, so if you have been indulging in it, now is the time to cast it out.

DEBORAH.

Nursing the Sick—By Julia Ramsey Davis

THE time must come in the life of nearly every woman, when unless she is willing to shirk the most sacred of duties, she will be called upon to minister to the sick and suffering, and when those whom she loves will look to her for care and comfort.

One of the first qualifications for the position of nurse is a willingness to yield absolute obedience to the physician in charge, and to use painstaking accuracy in carrying out his directions. The patient's faith in the doctor should also be encouraged as long as that physician has charge of the case, since it has a distinct value in furthering the recovery of the patient. A tranquil mind being of the utmost importance to the patient, everything must seem to be moving smoothly and easily, no matter what difficulties the nurse may have to encounter. The invalid should not be allowed to feel any responsibility whatever about his own case.

I know you will say—"Why, everybody knows those things." But it is the little things that count in a sick-room, and though everybody knows, these simple precautions are very often neglected.

Too much stress cannot be put upon the appearance of the sick-room. It must not only be kept neat and clean, but must be as cheerful and attractive as possible, that the eyes of the pa-

tient may rest with pleasure upon his surroundings. The nurse herself must contribute to the agreeable environment. Her dress must be simple and tasteful, but above all, scrupulously neat. No food must be in sight—even medicine bottles should not be obtrusively in evidence.

Stillness has power to soothe, and aids nature's healing processes. So all grating and disturbing noises must be banished from the sick-room. The putting of coal on the fire is often accompanied by nerve-racking noises. It may be brought to the room wrapped in newspaper, and laid noiselessly on the fire, paper and all.

As fresh air is said to be the best tonic, the sick-room should be well ventilated. An open fire is a fine means of ventilation. A thermometer should be frequently used in a sick-room. A window may be opened at the top on a sunny day no matter how ill the patient may be, if in the opening a wooden frame covered with flannel is fitted. An umbrella covered with a shawl makes a good screen when the windows are open, the patient being sheltered by it as in a tent. A room a little shaded is more restful to a patient, but a little sunshine in the room makes it more cheerful.

The one in charge of a sick person should not allow visitors to stay long, even though the physician has given

permission to receive callers. Neither should the nurse talk too much herself. Often the patient is fatigued in this way. Some otherwise good nurses fail in this particular. They do not use discretion about when to talk and when to keep silent.

Unless the attendant has some little occupation to fill the odd moments of leisure, the sick one is often unpleasantly conscious of being a burden to one who may have other duties to attend to. So the nurse may occupy her hands with some bit of work that may be readily picked up and laid down. Don't read, unless the patient is asleep. That is too absorbing in appearance, and the patient often hesitates to interrupt.

Making the bed properly is one of the necessary requisites of a good nurse. Stretch the under sheet tightly over the mattress and tuck it in firmly, and much discomfort will be avoided. In order to change the sheets while the patient is in bed, the under one is rolled lengthwise from the edge of the bed to where the person lies. The clean sheet rolled in like manner, is tucked in at one side, and unrolled over the space from which the first was taken, until the two rolls are side by side. The patient may then turn or be lifted over the rolls to the clean sheet, the soiled one is removed, and the rest of the clean one unrolled. The

upper sheet may be changed by freeing all the clothes at the foot of the bed, and spreading a clean sheet over all. Over this sheet a blanket is laid. The clean clothes should then be tucked in securely at the foot, and the soiled set slipped from under. Blankets are the better for frequent airing. Pillows may be comfortably arranged by placing a large one under the back and shoulders, and a small one under the head, drawing the lower corners of the latter well down so as to fit into the nape of the neck, thus giving support to the head.

To raise a person in bed to a sitting posture, when too weak to help himself, have the patient put his right arm around the nurse's neck while her right arm supports his shoulders. The nurse then leaning backward need make but little effort, and with practice can raise the patient with ease.

Frequent bathing is refreshing, and acts as both cure and antidote for feverish conditions. The water should be tepid for face and hands, and warmer for the rest of the body. The patient should be uncovered only a little at a time, and allowed to make no exertion himself. A foot bath may be given under the clothes to one in bed and often induces sleep when all else fails. In illness no detail is unimportant that can add in the least to the comfort of the sufferer.

LONG DAYS FOR HENS.

OFFICIALS of Purdue University are experimenting with electric lights mornings and evenings, thus lengthening the days, in order to keep egg production at the maximum. The following account of the experiments during November is given by T. R. Johnston:

"Two pens of thirty-five White Leghorn hens are being fed the same ration. The chickens are as near alike as possible and have practically equal laying abilities. One lot keeps good hours, arising and going to roost with other chickens on the university farm. The other lot is being 'kidded along' with an electric light which burns from six o'clock in the morning until all the light the day is going to bring is on hand. The lights are turned on again about four o'clock and allowed to run until about nine o'clock in the evening.

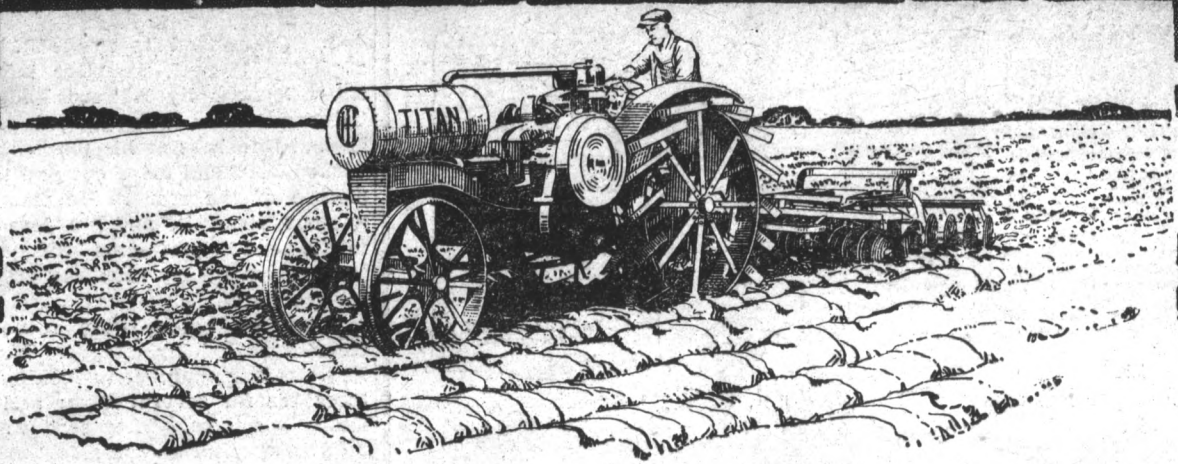
"This causes the chickens to arise earlier and work later. The experiment started November 1 and in the first thirty days, birds in the lighted pen produced 503 eggs, while the short day advocates laid only 352. Thanksgiving day the lighted pen yielded twenty-eight eggs and the unlighted only sixteen.

"A pen of twenty-five Barred Rocks responded to the electric lights within ten days. They were started November 18, laying only five eggs that day. On November 27 they produced twenty eggs, and have been going at that pace since.

"The other evening I was at the farm and saw those in the lighted pens still outside the house scratching in the ground at 5:30 while the other birds had been in bed an hour," said one of the men in the poultry department.

"The lighting costs six and a half cents a day per pen, or \$1.95 for November. The increased egg production for that time, figuring the eggs worth five cents each, meant \$7.55, a profit of \$5.60 for the one month alone."

"Manual of Tree Diseases," by H. Howard Rankin, Assistant Professor of Plant Pathology of Cornell University. Here will be found practical information on the identification and control of diseases common to our trees together with a lot of valuable suggestions on woodlot sanitation and tree surgery. The volume contains nearly 400 pages, is well illustrated and is published by the Macmillan Company, of New York, for \$2.50 per volume.



The Tractor to Buy

ARE you one of the many farmers who need more power to handle the farm work properly? Do you have to work with less help than you need?

If so, you need an International kerosene tractor. The size that gives you power for your heaviest load will handle all the work. Internationals use only as much fuel as the load requires. They are made to work with farm machines—the kind you are now using—and special hitchers are provided for all kinds of field and road work. Their belt pulleys are large enough to prevent slippage, run at correct speed, and are set high enough to keep the belt off the ground. They all use kerosene or other low-grade fuels which means a big saving in operating expense.

come back some day and sell you some other machines in the long list you see in this advertisement. In every sale we try to build for the future.

Tractor Service Whenever Needed

In line with this policy, we have developed a service organization which now consists of 89 branch houses and many thousands of loyal local dealers, wide awake and attentive to the needs of their customers. Service is a very essential part of any tractor sale. When you buy an International kerosene tractor you buy with it the assistance of an organization that brings a well stocked branch house or a live, local dealer within telephone call, fully equipped to keep your tractor working steadily.

The Company to Buy From

You know that we have supplied farmers with high-grade machines for nearly 83 years. You know that our tractors have furnished satisfactory farm power for more than 12 years. We have far too much at stake to market machines of any but the highest standards of quality. We expect to

International Tractor Sizes

International tractors, all using kerosene for fuel, are made in 8-16, 10-20, and 15-30 H. P. sizes. A line to the address below will bring you full information about all our tractors and about any other machines you mention in the list shown in this advertisement.

The Full Line of International Harvester Quality Machines

Grain Harvesting Machines
Binders Push Binders
Headers Rice Binders
Harvester-Threshers
Reapers Threshers

Tillage Implements
Disk Harrows Cultivators
Tractor Harrows
Spring-Tooth Harrows
Furrow Harrows
Orchard Harrows

Planting & Seeding Machines
Corn Planters Corn Drills
Grain Drills
Broadcast Seeders
Alfalfa & Grass Seed Drills
Fertilizer & Lime Sowers

Haying Machines
Mowers Tedders
Side Delivery Rakes
Loaders (All Types)
Rakes
Combination Side Rakes
and Tedders
Sweep Rakes Stackers
Combination Sweep Rakes
and Stackers
Baling Presses
Bunchers

Belt Machines
Ensilage Cutters
Huskers and Shredders
Corn Shellers Threshers
Hay Presses
Stone Burr Mills

Belt Machines—Cont.
Cream Separators
Feed Grinders

Power Machines
Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Corn Machines
Planters Cultivators Drills
Motor Cultivators
Binders Pickers
Ensilage Cutters
Shellers
Huskers and Shredders

Dairy Equipment

Cream Separators
(Hand)
Cream Separators
(Belted)
Kerosene Engines
Gasoline Engines
Motor Trucks

Other Farm Equipment

Manure Spreaders
Straw Spreading Attach.
Farm Wagons
Farm Trucks
Stalk Cutters
Knife Grinders
Tractor Hitchers
Binder Twine

International Harvester Company of America

CHICAGO

(Incorporated)

U S A

Save Half on Nursery Stock!

Buy Hardy, High-Grade Trees and Ornamentals Direct from Nursery. Save agent's commission. Big, new, handsome 1919 Catalog describes the best stock grown. Many specialties. All Guaranteed. Start an Orchard this year. Order early for spring planting. To be sure of spring supply write today—a postal will do. Catalog FREE.

CELERY CITY NURSERIES, Box 18 Kalamazoo, Michigan

Catalog FREE



Yes, Sir!
You CAN
Save Money!

—Del Dane
"The Old Stove
Master"

Forget "high prices." Send me a postal and get this book, I am smashing

prices this year on Kalamazoo Stoves, Ranges, Furnaces, Gas Ranges and Kitchen Cabinets.

Write Today

that's the way to get the whole story. Save a smashing big lot of money.

Ask for Catalog No. 113

Kalamazoo Stove Co.

Manufacturers

Kalamazoo Mich.

A Kalamazoo

Direct to You



19.95 American Cream Separator

On Trial. Easy running, easily cleaned. Skims warm or cold milk. Whether dairy is large or small, get handsome catalogue and easy monthly payment offer. Address AMERICAN SEPARATOR CO., Box 5061 Bainbridge, N.Y.

STRAWBERRY PLANTS

Send for our FREE OFFER, and 1919 catalogue which fully describes all small fruit plants such as Strawberries, Raspberries, Blackberries, Currants, Grapes, etc. BRIDGMAN NURSERY CO. Bridgman, Mich.

For Sale: 1918 Belladonna Seed. Strictly first class, \$1.00 per ounce. M. H. BIRD, Lansing, Mich., R. F. D. 6

POULTRY

Cockerels. Ten fine S. C. Buff Orpington cockerels, each. Weight over seven pounds. \$3.00 each. ROY SALWAY, Jonesville, Mich.

S. C. Rhode Island Cockerels pure bred, fine large dark red birds, will improve your flock. \$3 each, two for \$5.00. Alfred Delehmann, R. 3, Pigeon, Mich.

Barred Plymouth Rock Cockerels, fullblood \$4 and \$5 each according to size and quality. J. A. BARNUM, Union City, Mich.

Baby Chickens Bred-to-lay S.C.W. Leghorns. The high best of feed we have culled our breeders closely, saving the best; therefore, we will have to advance the price to 15c each for March and April. Book orders early. Sunnybrook Farm, Hillsdale, Mich.

Barred Rock Cockerels, bred from prize winners, single birds \$4.20 or more three dollars each. A. A. WOOD & SON, Saline, Mich.

BUFF LEGHORNS. 50 nice breeding cockerels, one to three dollars apiece. Dr. WILLIAM SMITH, Petersburg, Mich.

Cockerels: R. and S. C. R. I. Reds and R. I. Whites. \$2.50 up, good stock, satisfaction guaranteed. O. E. HAWLEY, Ludington, Mich.

Chicks. We ship thousands, orders booked now for spring delivery, booklet. FREEPORT HATCHERY, Box 12, Freeport, Mich.

Fowlers Buff Rocks Cockerels, hens and pullets. White Holland Toms, each. R. B. FOWLER, Hartford, Mich.

JOHN'S Big Beautiful Barred Rocks are hen hatched quick growers, good layers, sold on approval \$4 to \$8. Circulars photos. John Northon, Clare, Mich.

Pine Crest White Orpington greatest egg producers—hens and young stock, buy now for next winter. Mrs. WILLIS HOUGH, Pine Crest, Royal Oak, Mich.

ROSE COMB BROWN LEGHORNS from winners at the largest shows in America. Mrs. CLAUDIA BETTS, Hillsdale, Mich.

R. I. Red Cockerels, Both Combs. Write for prices. We sell more Reds than any other breeder in Michigan. INTERLAKE FARM, Box 39, Lawrence, Mich.

R. C. RHODE ISLAND REDS cockerels, large, thrifty; pure bred; \$2.50 to \$5.00. BIDWELL STOCK FARM, Tecumseh, Mich.

Rhode Island Reds. R. C. large fancy cockerels at three dollars each. BURT SEASON, Imlay City, Mich.

SILVER, Golden and White Wyandottes, good breeding stock after Oct. 1st, fine lot of cockerels \$3 to \$5 each. C. W. BROWNING, R. 2, Portland, Mich.

S. C. B. Minorcas a few choice cockerels and cock birds for sale. Satisfaction guaranteed. R. W. MILLS, Saline, Mich.

White Wyandotte eggs for hatching also baby-chicks out of choice stock; send for a 1918 circular. DAVID RAY, 703 Norris St., Kalamazoo, Mich.

FOR SALE, Giant Bronze turkeys, hens and toms, 1 Pekin ducks. Golden Glow seed corn in ear. Wolverine and Worthy seed oats. One extra good Reg. English Berkshire spring boar. ROBT. F. REAVEY and SON, R. D. 1, Caro, Mich.

FOR SALE MAMMOTH BRONZE TOMS 20 to 25 lbs \$10 and \$15. WALTER DILLMAN, R. 1, Dowagiac, Mich.



Feed That Will Make Hens Lay

THE high prices on poultry and eggs right now are sufficient to encourage poultry raisers to strive for big production. The essential item for big production is the right kind of feed.

WELLMAN'S QUALITEED POULTRY FEED

is a ready-made solution of the feeding problem. His Poultry Scratch Feed contains no weed seeds, and is a clean, properly balanced feed that will make mongrel hens lay high priced eggs. Wellman's QUALITEED Chick Feed contains just the right elements to develop chicks at a rapid pace. These feeds are low in price by all standards of comparison. See the guaranteed analysis on bags here illustrated.

ORDER YOUR SUPPLY NOW—Feed will be scarce. Extraordinary demands have caused a shortage. See your dealer and tell him how many tons you will need. Give him time to order a car. We can ship him in the same car QUALITEED Dairy, Hog and Horse feeds. If your dealer cannot supply you, write to us direct.

E. L. WELLMAN, Grand Rapids, Michigan

BOOK ON
DOG DISEASES
And How to Feed
Mailed free to any address by the Author—
H. CLAY GLOVER CO., Inc.
118 West 31st Street, New York

64 BREEDS Most Profitable Chickens, ducks, geese and turkeys. Choice, pure-bred, northern raised. America's greatest poultry farm. 26th year. Valuable new 112 page book and catalog free.
R.F. NEUBERT Co., Box 817 Mankato, Minn.

POULTRY HOMESTEAD FARMS

A Federation of Interests

Day Old Chicks We are now at the beginning of another hatching season. Our new poultry catalog, with illustration and full description of each breed, is about ready for distribution.

If you want to buy Day Old Chicks this spring, write to us so that you may learn something of our Pure Breed Practical Poultry; each breed in a colony entirely separate from every other colony, a free farm-range stock.

Breeds for the season are:
Barred Plymouth Rocks
White Plymouth Rocks
Buff Plymouth Rocks
R. O. Rhode Island Reds
S. C. Rhode Island Reds
White Wyandottes
Silver Laced Wyandottes
Sicilian Butter Orps
S. C. Black Minorcas
S. C. White Leghorns
R. O. White Leghorns
S. C. Buff Leghorns
S. C. Brown Leghorns
R. O. Brown Leghorns
S. C. Anconas

Bourbon Red and White Holland Turkeys; Gray Toulouse and White Embden Geese; White Pekin Ducks; Guinea; Belgian Hares.

Eggs for Hatching Eggs from the foregoing breeds in quantities for incubators and also in single sittings. We would appreciate correspondence with any person who will need incubator eggs this spring. Eggs for early broilers also in quantities and at lower prices.

Cockerels A few Cockerels of nearly all the foregoing breeds.

We will send illustrated catalogue and price list; ready about January 5th.

BLOOMINGDALE FARMS, Bloomingdale, 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.**

Additional Poultry Ads on Page 27

\$10.95 Buys 140-Egg
Champion
Belle City Incubator
Hot-Water, Copper Tank, Double
Walls, Fibre Board, Self-Regulating, With \$6.35
Hot-Water 140-Chick Brooder—both only \$15.95.
Freight Prepaid. East of
Rockies. Made of
California Redwood.
My Special Offers provide ways to
earn extra money. Order Now, or
write for book "Hatching Eggs."
It's Free and tells all. Jim Nolan Pres.
Belle City Incubator Co., Box 14, Racine, Wis.

130 Egg Incubator \$14
and Brooder Both for
If Ordered Together, Freight Paid
East of Rockies. Hot water
copper tanks, double walls,
dead air space, double glass
doors, all set up complete, or
160 Egg Incubator and Brooder \$17.25
FREE Catalogue describing them. Send
for it TODAY or order direct. (2)
Wisconsin Incubator Co., Box 72, Racine, Wis.

150 EGG INCUBATOR
CHICK BROODER Both for \$14.75
Both are made of
Calif. Redwood.
Incubator is covered
with asbestos and gal-
vanized iron; has triple
walls, copper tank, pure-
ary, egg tester, thermometer, ready to
use. 30 DAYS TRIAL—money back if
not O.K. Write for FREE Catalog Now.
Ironclad Incubator Co. Box 97, Racine, Wis.

Chickens Sick or Not Doing Well?

An Extraordinary Offer: Germoxone is a stand-
where for chicken troubles, roup, colds, cholera, swelled head,
bowel complaint, chicken pox, canker, not doing well, non-
laying, etc. Now our proposition: If no dealer there handling
Germoxone and you will agree to use it and pay if sat-
isfied, we will send you a 75c package without a cent in ad-
vance. No pay if not satisfied. Can we do more? And we
will send free 5 poultry booklets. Write today.
Local dealers handling Germoxone will do the same.

GEO. H. LEE CO., Dept. 426 OMAHA, NEB.

Poultry Book Latest and best yet: 144
pages, 215 beautiful pictures,
hatching, rearing, feeding and disease information.
Describes busy Poultry Farm handling 63 pure-bred
varieties and BABY CHICKS. Tells how to choose
fowls, eggs, incubators, sprouters. Mailed for 10 cents.
Berry's Poultry Farm, Box 136, Clarinda, Iowa

62 BREEDS Most Profitable
Pure-Bred Chick-
ens, Geese, Ducks,
Turkeys, Hardy fowls, eggs, and incubat-
ors at lowest prices. America's Pioneer Poultry Farm.
Write for valuable Poultry Book FREE.
F.A. NEUBERT, Box 346 Mankato, Minn.

Saving What We Raise

(Continued from page 7).

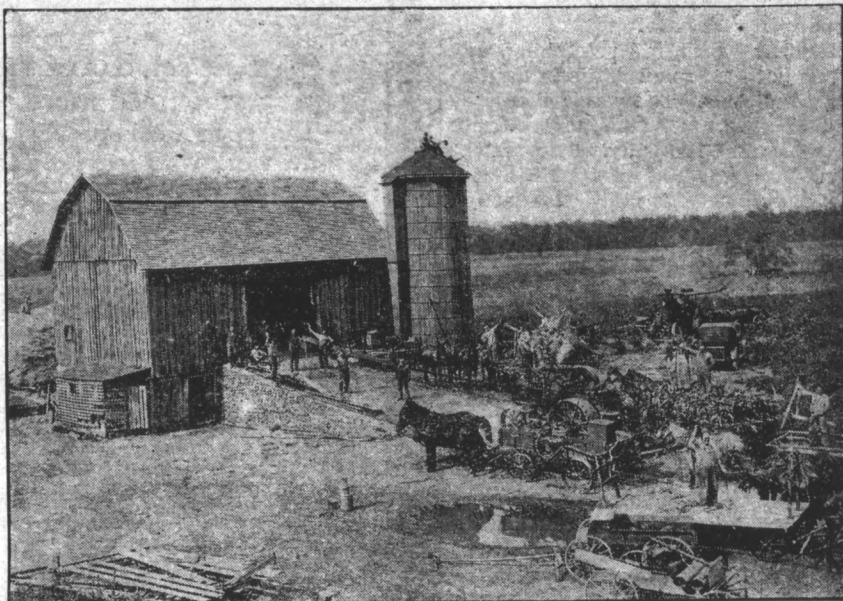
one afternoon by Edward Badger, a Calhoun farmer, who 'phoned us that he had threshers at his place, and he wished he would drive out and take a picture of the scene. He was quite anxious about it, and we feared he might need help of some kind. So we took an emergency kit along prepared for the worst.

When we reached the scene our fears were quickly allayed. Mr. and Mrs. Badger had been looking for threshers for several days; and they finally got them. They saw a smoke up over the hill and in a few minutes a regiment came along. The major

pitchfork as the separator began to hum once more.

The other man with his hat on felt above all the rest of the bunch, but that was not the reason he kept his old felt hat pulled down tight over his cranium. He was not an aviator, but a farmer devotedly attached to the soil. High elevations on his part were very brief stunts, and so he froze to the silo roof peak for fear his native soil might fly up and hit him.

Really, this is a very unusual picture. There are precious few farmers in Michigan who ever entertained or saw two complete thresher gangs around the same farm barn at the same time. One gang is threshing wheat in



Two Complete Threshing Outfits on One Farm at the Same Time.

was at the head giving physical orders to a steam tractor in place of a tank. One company turned in toward the barn and saluted the double roller doors. The password was "Open Sesame." The doors rolled aside and a big threshing separator was backed in on the double quick. The second company wheeled to the right, broke ranks and shoved the eating end of a big corn shredder right up against the butt end of the silo.

And so it came to pass that Mr. and Mrs. Badger had threshers at last. And Mrs. Badger is one of the farmers' wives of Michigan who has had the honor and the big job of furnishing dinner to two complete sets of threshers at the same time and getting away with it. The threshers also managed to get away, and they agreed it was one of the best dinners they ever put inside to carry outside of any farm home dining-room in all their born days.

The accompanying picture shows just what we saw when we reached the scene. We drove our car up between the two outfits, while a long extension ladder was raised, as we directed, up and over the house roof. While two men steadied the ladder we climbed to the top with our camera. We shouted to the men to raise their hats and cheer for Liberty, and shot them on the job. And you will notice the picture is proof that nearly every last one of these threshers are patriots of the first water and would fight clear over the top of the last ditch into No-Man's Land at the drop of the hat.

The one man sitting down in the barn doorway is no slacker, as may appear to the casual observer. The reason he did not stand up and whoop it up with his hat held high, was that he had been pitching 5,872 wheat bundles per hour for the last thirty-seven days, more or less, and this was his first chance to sit down since the last change of the moon. He was almost asleep 'agin the barn door when we took aim and fired. As we came down the long ladder he had just rose to salute, and quickly rallied around his

the barn, while the other is threshing corn and filling the silo. And these two pictures fully illustrate ways and means of threshing sorghum, wheat and corn.

POULTRY NOTES.

It pays to band the hens that are to be held over for breeders so that the next year they can be distinguished from the pullets. Otherwise good pullets may be marketed for old hens and some of the old hens may be retained for a year longer than it is profitable to keep them on the farm.

If you are raising pure-bred poultry and have a surplus to sell in the fall, do not market them hastily with the local butcher but find out if the neighbors need good foundation stock of your particular breed. Very frequently many of the year-old hens can be sold as breeders near home at a price twice as high as they will bring on the market. A sign by the side of the road will be profitable. If there is a large flock to sell, advertising in local papers and farm journals will be profitable. When developing a poultry business it pays to study the local demands and supply them whenever it is possible.

A price of \$10 is not too much to pay for a cockerel of a fine exhibition or bred-to-lay strain. The farmer who makes such a purchase is not only buying one bird but all the skill that the breeder has used in producing it, and also all of the improvement which can be made in the home flock during the next two or three years.

Farmers buying fine cockerels for breeding purposes should strive to save the best of the year-old hens to use in the next spring's matings. Too much emphasis cannot be placed on the value of a good male but at the same time it is the hens that lay the eggs and they should be vigorous birds of excellent producing ability. It hardly pays to buy a good cockerel and use it with hens lacking in vigor. It is so much better to give the male the best possible chance to produce good results and thus it is necessary to use care in selecting the hens.

The Michigan Live Stock Insurance Company

A Michigan organization to afford protection to Michigan live stock owners. We have paid over \$17,000 in death losses since we began business July 5th, 1917.

Is there any stronger argument for this class of insurance than \$17,000 of losses on \$1,500,000 of business?

Your animals are well and sound today but tomorrow some of them are dead. Insure them before it is too late.

We indemnify owners of live stock—horses, cattle, sheep and hogs, for loss by accident and disease.

See our agent in your vicinity.

Colon C. Lillie, Pres.

319 Widdicomb Bldg., Grand Rapids, Mich.

Harmon J. Wells, Sec.-Treas.

Craebner Bldg., Saginaw, W. S., Mich.

Another "Black" International



Aberdeen-Angus won Grand Championships over all breeds on SINGLE STEER, Steer HERD, CARCASS and BOYS' and GIRLS' Calf, losing only Fat Carlot (first time since 1909). The interbreed Grand Championship standing of the world's greatest show is now 11 out of 17 for Single Steer, 12 out of 15 for Steer Herd, 13 out of 17 for Fat Carlot, and 16 out of 17 for Carcass, in favor of the Aberdeen-Angus. Write for "Results of Internationals."

ABERDEEN-ANGUS: First in War, First in Peace, First in Reconstruction!

AMERICAN ABERDEEN-ANGUS BREEDERS' ASSOCIATION
817 Exchange Ave., CHICAGO

BREEDERS' DIRECTORY.

Change of Copy or Cancellations must reach us Ten Days before date of publication.

CATTLE.

Wildwood Farms

Breeders of Best Strains of
Aberdeen Angus Cattle
and **Duroc Jersey Hogs**

Several young bull calves on hand, three of which are of serviceable age, out of Black Monarch III, three times Grand Champion, Michigan State Fair. Also several AI Brood sows. Will be glad to correspond with you by letter regarding stock. Write

SIDNEY SMITH, Supt.

Wildwood Farms, Orion, Michigan
W. E. SCRIPPS, Proprietor.

WOODCOTE ANGUS

TRAJANERIOAS & BLACKBIRDS (BLACKCAPS) only. The most fashionable strains of the breed. Great care given to matings and pedigrees. Every animal BRED IN THE PURPLE. Breeders and feeders of many INTERNATIONAL WINNERS. WOODCOTE STOCK FARM, Ionia, Mich.

Cloverly Angus Good quality bulls of serviceable age and younger. Inspection invited. Geo. Hathaway and Son, Ovid, Mich.

Pure Bred Aberdeen Angus Bulls of Serviceable age; inspection invited. ANDREW EITEL, Vermontville, Mich.

GET GUERNSEYS

If you want to increase your dairy profits you need to know about the cows whose average production, under tests supervised by State Agricultural Colleges, is three times as great as the average of all dairy cows in the United States. Ask for "The Story of the Guernsey."

THE AMERICAN GUERNSEY CATTLE CLUB, Box 1, Petersboro, N. H.

MAY ROSE BULLS

A few choice young bulls, 4 to 10 months old, grandsons of Don Davalos of Linda Vista, greatest bull of the Guernsey breed. Tuberculin tested and free from disease. BALLARD BROS., R. 4, Niles, Mich.

GUERNSEYS must reduce herd, so offer a few choice females of Glenwood breeding also bulls, all stock of A. R. breeding, herd tuberculin tested. T. V. HICKS, Battle Creek, 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 \$1350 each. His bull calves are booked ahead at reasonable prices. Avondale Stock Farm, Wayne, Mich.

GUERNSEYS—REGISTERED BULL CALVES Containing blood of world champions. HICKS' GUERNSEY FARM, Saginaw, W. S. Mich.

For Sale Registered Guernsey Cattle and Berkshire Swine. JOHN EBELS, R. 2, Holland, Mich.

GUERNSEYS Registered bulls two years old and under grade heifers all ages, write your requirements. WALTER PHIPPS FARM, 80 Alfred St., Detroit.

Guernsey Bull For sale, 15 mo. old, right in every way. Write for particulars. C. A. HENNESEY, Watervliet, Mich.

GUERNSEY BULL FOR SALE Avondale Independence, No. 39776, Two years old. Sire: Halcion Sequel, No. 22326; Dam: Imp. Violet II of the Spurs No. 25672. If interested write ANSON S. BECHTEL, Caledonia, Mich.

One 4 Year Old

Choice Reg. Guernsey Heifer, will freshen inside 60 days right in every way. J. M. WILLIAMS, North Adams, Mich.

For Sale Holstein-Friesian Bull Calf 4 white, large, straight a Beauty born Dec. 7. Sire a 300 lb. bull. Dam A. R. O. nearly 15 lbs. at 25 months, now 5 years old and will weigh 1400 lbs. a beautiful cow. Price \$50.00 all papers. WALNUT STOCK FARMS, R. 1, Box 26, Ohio, 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. OLARKE, Vassar, Mich.



Holstein Veal

No Kind or Quality of veal is so much in demand as that of the Holstein-Friesian breed. It is an important source of revenue to Holstein dairymen, adding an important item to the credit side of the dairy farmer's account. Holstein calves weigh 100 to 135 lbs. at birth.

If interested in
HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

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.

"Winwood Herd"

REGISTERED
Holstein-Friesian Cattle

Sire in Service
FLINT MAPLECREST BOY

His sire is Maplecrest Korndyke Hengerveld. His three nearest dams each over 30 lbs. of butter in 7 days. His dam and granddam both made over 1232 lbs. of butter in one year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vassar Bull, 30.57 lbs. of butter in 7 days and 121 lbs. in 30 days. Her butter fat test is 6.27. This looks about right to the man who goes to the creamery. We have bull calves from 2 weeks to 12 months old. From A. R. O. dams and sired by Flint Maplecrest Boy, which we will sell at a dairy farmers price—breeding considered. Just think 40 more cows to freshen which means more bull calves. Let us know your wants. We will make terms on approved notes.

JOHN H. WINN, Inc., Roscommon Mich.
Lock Box 249, Reference Roscommon State Bank.

The Pontiac Herd

"Where the Champions come from"

Offer Bull Calves sired by sons of Pontiac Korndyke, Hengerveld DeKol, Pontiac Dutchland, or Admiral Walker Pieterje.

Do you want a Pontiac in your herd?

Pontiac State Hospital, Pontiac, Mich.

The Traverse Herd

We have what you want in BULL CALVES, the large fine growthy type, guaranteed right in every way. They are from high producing A.R. O. ancestors. Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL, Traverse City, Mich.

THE HOLSTEINS

At Maple Avenue Stock Farm are under Government supervision. The entire herd have just been tuberculin tested and not one reactor. A good place to buy that bull you are looking for, and I have two very fine, richly bred, and splendid individuals ready for any amount of service. I want to answer any question you may ask about them.

L. E. CONNELL, Fayette, Ohio.

Reg. Holstein Bull Calves, calfship affine one at \$50 Reg. and Del. also one yr. at \$75.00. J. ROBT. HICKS, St. Johns, 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.

DISPERSAL

10 A. R. O. Holstein Cows, 4 to 6 years old, records up to 26 lbs. in 7 days, 3 Heifers 2 to 3 years old, 4 yearling Heifers from A. R. O. Dams, 5 Heifer calves.

*Cows all fresh since October save one, due this winter. All under Government supervision for control of tuberculosis. Herd located at Fabius Station near Three Rivers, Michigan.

Peaceland Stock Farm: Three Rivers, Mich. Chas. Peters, Herdsman. For breeding and prices Write C. L. BRODY, Port Huron, Michigan

For Sale six registered Holstein females 3 and 4 years. Due 1st of year. Good type and right. Also 1 bull ready for heavy service, mostly white, \$1000. Liberty Bond takes him. J. L. ROCHE & SON, Pinckney, Mich.

For Sale at a bargain. A few young bull calves from high producing stock. Buy one of these fine calves and raise a bull for next fall. A. F. LOOMIS, Owosso, Mich.

\$75 gets 1 mos. old grandson of all four D.D. Aitkens Maplecrest Korn. Heng. 26 lb. dam of Johan Heng. Lad; 20 lb. son DeKol. Butter Boy 3rd, 19 lb. 2 yr. M. L. McLAULIN, Redford, Mich.

HOLSTEINS of quality. Bull calves from dams with records high as 31 lbs. in 7 days. Also collie puppies. E. A. HARDY, Rochester, Mich.

Reg. Holstein Bull three mo. old, also some fertility producing stock. Buy one of these fine calves and raise a bull for next fall. O. R. O. breeding. VERNOR CLOUGH, Parma, 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.

Reg. Holstein bull calf born June 18-18, extra choice individual, very choice breeding price \$100 reg. and del. J. ROBERT HICKS, St. Johns, Mich.

Two high grade unregistered Holstein heifers past 2 yr. old, one fresh other fresh now. Price \$100 each. B. B. REAVEY, Akron, Mich.

BROOKWATER FARM

2 Bulls

Ready for Service

Sired by butter bred bulls and out of high testing dams.

The Producing Kind

with Jersey type and capacity. Prices reasonable. Also a few bred gilts (Durocs) and boars.

Brookwater Farm.

Herbert W. Mumford, Owner.
J. Bruce Henderson, Mgr.
Ann Arbor, Mich.
R. 7.

REGISTER OF MERIT JERSEYS

Maple Lane R. of M. Jersey Herd. Bulls, bull calves and heifer calves sired by one of the best grandsons of Pops 99th of Hood Farm and out of R. of M. dams. IRVIN FOX, Allegan, Mich.

For Sale. Choice bulls from R. of M. dams by Majesty's Oxford Fox, average profit per head on entire milking herd \$92.58 over cost of feed for cream alone tuberculin tested, and free from abortion. ALVIN BALDEN, Capac, Mich.

Hillside Farm Jerseys, offer 3 yearling bulls, backed by tested dams, and sired by a double grandson of Royal Majesty, first prize & junior champion at Mich. State Fair, good individuals. C. & O. Deane, Ypsilanti, Mich.

BUTTER BRED JERSEY BULLS FOR SALE CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.

JERSEY BULLS Ready for service FOR SALE WATERMAN & WATERMAN, Ann Arbor, Mich.

Polled Jersey Cattle Breeders' names, sale dates and other information of CHAS. S. HATFIELD, Box 57, R. 4, Springfield, Ohio

Meridale Interested Owl No. 111311 heads my herd. Bull calves from this great sire and out of R. of M. dams for sale. C. B. WEHNER, Allegan, Mich.

For Sale Registered Jersey Cattle of both sex. Smith & Parker, R. 4, Howell, Mich.

LILLIE Farmstead Jerseys. Young bulls ready for service from R. of M. cows. A few bred heifers and cows. COLON C. LILLIE, Coopersville, Mich.

FOR SALE Reg. Jersey bull 14 months old St. Lambert breeding. J. E. MORRIS, Farmington, Mich.

Herefords

5 Bulls 9 to 14 months old Prince Donald, Farmer and Perfection Fairfax breeding.

ALLEN BROS., Paw Paw, Mich.

Herefords Polled and Horned blood lines embrace Fairfax. Polled Perfection and Prime Lad 9th breeding. Prices reasonable. COLE & GARDNER, Hudson, Mich.

Herefords Bob Fairfax 494027 at head of herd. Stock for sale, either sex, polled or horned, any age. Priced right. EARL C. McCARTY, Sec'y. H. B. Ass'n. Bad Axe, 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.

Shorthorn Cattle of both Sex for Sale W. W. KNAPP, Howell, Michigan.

WILL sell for quick sale at \$125, bull calf Experience 68277 Registered Shorthorn, calved April 23, 1918, dam Lucy 22878 out of Woodland's choice 46203. If you want quality and lots of it with some real breeding do not lose this chance. Write THE JENNINGS FARMS, Bailey, Mich.

Shorthorn Seven Scotch and Scotch Topped bulls for sale. Price reasonable. W. B. McQUILLAN, R. 7, Howell, Mich.

BIDWELL SHORTHORNS

For Beef and Milk.

Registered bulls, cows and heifers—Good Scotch and Scotch Topped for sale. In prime condition. Modern sanitary equipment. Farm 30 minutes from N. Y. C. depot, 1 hour from Toledo, Ohio. Automobile meets all trains. Write

BIDWELL STOCK FARM,
Box B, Tecumseh, Mich.

Richland Farm Shorthorns

Sires in Service: Fair Acres Goods and IMP. Lorne-Michigans Grand Champion Bull. The largest Herd of Scotch cattle in the State. Every animal Tuberculin Tested by the Sanitary Commission. Special offer on two extra good white bulls. The kind that produce roan calves.

C. H. PRESCOTT & SON,
Herd at Prescott, Mich. Office at Tawas City, Mich.

For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archers Hope, Avondale, Maxwellton Sulton and White Hall Sulton by the Oscola Co. Shorthorn Breeders Ass. JOHN SCHMIDT, Sec. Reed City, Mich.

Shorthorn Bulls ready for service of the choicest breeding. Write me your wants. A. A. PATTULLO, R. 4, Deckerville, Mich.

For Sale Shorthorn Bulls of the choicest breeding and ready for service. LUD HASTINGS, Napoleon, Mich.

Shorthorns 100 head to select from. Write me your wants, price reasonable. Wm. J. BELL, Rose City, Mich.

The Kent Co. Shorthorn Breeders have both males and females for sale. Ask about them. L. H. LEONARD Sec., Caledonia, Mich.

For Sale Best Bates Shorthorns; cows, heifers and young bulls at reasonable prices. CLARE RIGGS, R. 4, Mason, Mich.

Oakwood Shorthorns. Three bulls sired by Gloster Boy 469661, 9 to 12 months old. COLLAR BROS., R. 4, Conklin, Mich.

Milking Shorthorns of most noted families either all ages, write OSCAR SKINNER, Pres. Central Mich. Shorthorn Ass'n., Gowen, Mich.

Scotch Shorthorn. A fine lot of young bulls for sale. Phone Orion Exchange JOHN LESSITERS (SONS), R. 1, Clarkston, Mich.

Scotch Shorthorn Bulls including a roan yearling prospective herd header a grandson of Imp. Villagr. LAWRENCE P. OTTO, Charlotte, Mich.

For Sale Roan Shorthorn Bull 1 yr. old, also calves good milking strain. CHAS. WARNER, Jr., Imlay City, Mich.

Stockers & Feeders For Sale

130 Shorthorn Steers ave. 1065 lbs.
170 Hereford Steers ave. 950 lbs.
2 cars of yearling Hereford's ave. 750 lbs.
These steers are dehorned and in good flesh. Wapello Co. Ia. is noted for its good cattle. Write JOHN CARROW, R. 3, Ottumwa, Ia.

HOGS

For Sale Reg. Berkshire Sows & Boars all ages. Priced to sell. RUSSELL BROS., R. 3, Merrill, Mich.

Duroc Boars, Gilts, Big, Long, Tall, 200 lb. April 1, boars and gilts of the choicest breeding. Also an A.R.O. 1 yr. Holstein bull. F. E. EAGER & SON, Howell, Mich.

DUROC JERSEYS

Bred sows and gilts and big growthy fall boars. Pairs not related. Special price on a bred sow and fall boar not akin. NEWTON BARNHART, St. Johns, Mich.

Duroc Gilts and fall pigs sired by E. D's Defender Col. from King The Coy dams. E. D. HEYDENBERG, Wayland, Mich.

DUROC JERSEYS Nothing but spring pigs for sale. CAREY U. EDMONDS, Hastings, Mich.

Duroc bred gilts for March and April farrow with quality and size. Fall pigs both sexes not akin. W. C. TAYLOR, Milan, Mich.

BIG TYPE DUROCS

Unrelated Trios of fall pigs for \$80.00, single pig \$21.00 Best of breeding. A few excellent Bull Plymouth Rock Cockerels at \$5.00 each. RUSH BROS., Romeo, Mich.

Duroc Jerseys Large heavy-boned gilts, bred to Junior Champion boar for March and April farrow; prices reasonable. Come and see them, free livery expenses paid if not as represented. F. J. DRODT, R. 1, Monroe, 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

AST fall gilts all sold, have a good lot of last spring L pigs from 3 sires good growthy stock. Farm 1/2 mile west of depot, Citizens Phone 124. OTTO B. SCHULZE, Nashville, Mich.

Chesters I have some splendid March gilts of the broad heavy hamed kind bred for March farrow; priced right. F. W. ALEXANDER, Vassar, Mich.

Chester Whites Open spring gilts priced to sell also White Embden granders. DIKE C. MILLER, Dryden, Mich.

THE WORLD'S CHAMPION big type O.T.C's. Stock of all ages for sale. Herd headed by Calloway Edd, the World's Champion O. T. C. boar assisted by C. C. Schoelmaster, Grand Champion boar of Michigan, New York and Tennessee state fairs. Also, C. C. Giant Buster, undefeated Senior boar pig wherever shown and Grand Champion of Oklahoma state fair. Get our catalogue of Orandell's prize hogs, Cass City, Michigan.

SERVICEABLE BOARS Shipped C. O. D. and Express Paid J. C. RALPH JEWETT, Mason, Mich.

Additional Stock Ads. on Page 25

Markets.

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, January 2.

WHEAT.

Receipts of wheat at primary markets have been unusually large of late. On Saturday last these aggregated 1,748,000 bushels compared with 446,000 bushels on the same day a year ago. Northwestern receipts were 1,109 cars on the same day, and 201 on the same day a year ago. In spite of this movement of wheat from the farms, prices hold steady at recent advances. Wheat seems to be a good product to own, as the demand for it is very general. One year ago the local price for No. 2 red wheat was \$2.17 per bushel. Present Detroit prices are:

No. 2 red	\$2.30
No. 2 mixed	2.28
No. 2 white	2.28

CORN.

Opinions are very much mixed on the future of the corn deal. This situation is probably due largely to a lack of information regarding the present and near future position of the farmers. Bad roads and other obstacles in the way of marketing at country elevators are certain to aid prices in an upward trend, while good roads will come to the assistance of the bears. Dealers who had sold short on this grain were quite largely responsible for the stronger tone prevailing on the closing days of the old year. One year ago No. 3 corn sold here at \$1.95 per bushel. Present prices are:

No. 3 corn	\$1.50
No. 3 yellow	1.55
No. 4 yellow	1.50
No. 5 yellow	1.44
No. 6 yellow	1.38
No. 3 white	1.55

Chicago.—At Chicago the bears were obliged to give way for a fraction, with January quoted at \$1.43 and May at \$1.36%.

OATS.

Owners of this cereal are looking to the demand from this country to support the trade, as foreigners appear to be out of the market. The domestic consumption is large and of late has given this grain independent strength. One year ago standard oats sold on the local market at 83½¢ per bushel. Present prices here are:

Standard	72
No. 3 white	71½
No. 4 white	70

RYE.

Dealers are disregarding this market and consequently nothing has happened to change the almost nominal quotations. At Detroit No. 2 cash is quoted at \$1.62 per bushel.

BEANS.

The usual holiday dullness prevails in the terminal markets for this product. No changes in prices have been reported. At New York Michigan pea beans are quoted at \$10.25@10.50 per cwt., with the market rather easy. The Detroit price remains unchanged at \$9 for immediate and prompt shipment, this being the quotation at shipping points. The situation in Chicago is the same as elsewhere, excepting that dealers are looking forward to an improved demand as soon as the country has resumed regular business. Pea beans, hand-picked, choice to fancy are quoted there at \$9@9.25, and the best red kidneys at \$12@12.50.

SEEDS.

Values are unchanged in this department, with prime spot clover quoted on the local market at \$25; March at \$25.25; alsike \$19.25; timothy \$5.10.

FEEDS.

The advance noted in mill feeds last week is held. Other feeds have advanced the past week. Detroit quotations to jobbers for feed in 100-pound sacks are: Bran \$47; middlings \$50; coarse corn meal \$63; cracked corn \$64; corn and oat chop \$52.50.

FLOUR.

On the local market straight winter wheat flour is selling in paper sacks at \$10.80 per barrel, and spring wheat flour at \$10.90.

EGGS.

The markets for eggs are steady to firm. At some points advances have been recorded since last week. On the

Detroit market extra firsts in new cases, candled, are now quoted at 62c, while firsts in new cases are held at 59½¢, storage eggs 50@52c. Our reports from Chicago show the market there to continue unchanged at 59@60c for firsts and 56@57c for ordinary firsts. The New York market is maintaining a firm front, with nearby western stock selling at 70@85c a dozen.

HAY.

A steady feeling prevails in the trade. Moderate supplies are on hand and the demand is fairly good. Quotations are as follows:

No. 1 timothy	\$28.50@29.00
Standard timothy	27.50@28.00
No. 1 mixed	25.50@26.00
No. 1 clover	24.50@25.00

Pittsburgh.—The volume of business is small with the demand fairly active. Dealers anticipate an advance following the holiday. Present quotations are as follows:

No. 1 timothy	\$30.00@30.50
No. 1 light mixed	27.50@28.50
No. 1 clover mxd	27.50@28.50
No. 1 clover	26.50@27.50

BUTTER.

The receipts of butter are light and the demand is good considering the high prices. On the Detroit market fresh creamery firsts are quoted at 63@64c per pound, a decline from last week's quotations. Last week Chicago's market declined but later recovered all but a fraction of the loss. Prices there are from 55@66c for creamery offerings. The New York trade is easy, with creameries ranging from 63½¢ to 68½¢ per pound.

POULTRY.

The local poultry market was entirely cleaned up and the current demand is sufficient to take care of the small receipts that are now coming in. Prices for live are: Springs 25@29c; hens 22@26c; ducks 34@35c; geese 26@28c; turkeys 35@36c; dressed hens 26@28c; turkeys 35@36c; dressed

28@30c; springs 30@34c; turkeys 42@45c per pound.

CHEESE.

Supplies of cheese are showing some increases due largely to the lack of business during the holiday week. Receipts at Chicago are a little larger than a year ago. Daisies are selling there at 36c and young Americas at 37c. In New York the trade is firm with whole milk flats at 37@37½¢ for fresh specials and 35@36½¢ for do. average run.

POTATOES.

During the past week round white potatoes advanced 10c at Michigan and Wisconsin shipping points, the price going up to \$1.70@1.75 f. o. b. carloads. At Chicago there was also strength shown with Michigan round whites, bulk, U. S. Grade No. 1 going to jobbers at \$1.80@1.85 per cwt. The Indianapolis trade paid \$1.90@2 for the same grade; Cincinnati \$1.90@2; Pittsburgh \$2@2.10; Philadelphia \$2@2.10; Cleveland \$2; Buffalo \$2@2.15. On the Detroit market supplies are moderate with the demand and movement slow. The trade here is paying \$2.75 for the best round and long whites per 150-lb. sack.

APPLES.

New York apples from cold storage are selling on the Detroit market at \$5@6.25 for Baldwins and \$6.25@6.50 for A 2½-inch Spies. At Chicago A 2½-inch Baldwins and Greenings are selling at \$6@6.50; do. Northern Spies \$6.75@7.25.

DETROIT CITY MARKET

There was a large falling off in the amount of business on the city markets following the Christmas holiday. Apples are now selling at from \$1.50@2.25; potatoes \$1.10@1.15; turnips 60@1.25; cabbage 3@10c per head and \$1.25 per bushel; onions 60c@1.40; squash 75@90c per bushel; dressed pigs 30c; butter 75c; eggs 75@80c.

Live Stock Market Service

Reports for Thursday, January 2nd

DETROIT

Receipts 2,273. All grades strong and 50c higher than last week.

Best heavy steers	\$13.00@16.00
Best handy wt bu steers	10.00@12.50
Mixed steers and heifers	10.00@11.50
Handy light butchers	9.00@10.00
Light butchers	7.00@8.50
Best cows	9.00@10.00
Butcher cows	7.55@8.50
Cutters	7.25@7.50
Canners	6.25@7.00
Best heavy bulls	9.50@11.00
Bologna bulls	8.50@9.50
Stock bulls	6.50@7.50
Feeders	9.00@10.50
Stockers	7.50@9.00
Milkers and springers	65@125

Veal Calves.

Receipts 1,708. Market strong.

Best	\$18.50@19.00
Others	8.00@17.00

Sheep and Lambs.

Receipts 7,203. Market steady.	
Best lambs	\$16.00
Fair lambs	14.00@15.00
Light to common	11.00@13.00
Fair to good sheep	8.00@8.50
Culls and common	5.00@7.50

Hogs.

Receipts 14,104. Market strong.

Pigs	\$17.00
Mixed hogs, steady	17.50

BUFFALO.

Our live stock market was steady to slow with all grades of hogs selling at \$17.85. Lambs did not move freely and the top price was \$17.25. Calves sold up to \$22. The cattle trade shows no change in quotations.

CHICAGO.

Cattle.

Receipts 14,000. Beef and butcher cattle strong and 15@25c higher. Calves 25c higher.

Good to prime choice steers \$16.25@19.75; common and medium butchers \$9.75@16.25; heifers \$8.50@14.50; cows \$8.40@13.75; bologna bulls \$7.50@12.50; canners and cutters \$7.50@8.40; stockers and feeders, good \$10.50@13.75; do medium \$7.50@10.50.

Hogs.

Receipts 38,000. The market opened strong to a shade higher and closed steady. Tops \$18; bulk of sales \$17.55@17.95; heavy \$17.85@18; mixed and light \$17.75@17.95; packers' hogs at \$16.85@17.50; medium and heavy at \$17.45@17.70; light bacon hogs \$17@17.90; pigs, good to choice \$14.50@15.50; roughs \$15.75@16.90.

Sheep and Lambs.

Receipts 16,000. Market strong to 25c higher. Choice to prime lambs at

\$16.45@16.75; medium and good lambs \$15@16.40; culls \$11@13.50; medium good and choice feeders \$13.50@14.65; medium and good yearlings \$11.50@13.85; choice yearlings \$13.85@14.25; wethers, medium and good \$10.40@11.65.

GROWERS' MARKET BULLETIN.

The first bulletin of the daily municipal market reporting service of the United States Department of Agriculture, Bureau of Markets, was issued December 23. Dolph Berli, in charge of the service, explains the bulletin is issued for the benefit of growers in Wayne county and the territory depending on Detroit as a market for home-grown fruits and vegetables.

The bulletin will be issued each market day and is intended as a guide to the grower to inform him of the ruling prices at which produce sold at the previous day's markets; also to indicate which articles are abundant and which are scarce.

The bureau also expects within a few days to establish a reporting service for the benefit of the consumer. The bulletins will be mailed to growers free of charge on application to the Bureau of Markets, 314 Hammond Building, Detroit, Mich.

"Manual of Vegetable-Garden Insects," by Cyrus Richard Crosby and Mortimer Demarest Leonard, both of the New York State College of Agriculture at Cornell University. Here is a practical treatise on the principal insects that attack truck and vegetable crops. The life history and habits of the insects are given, their injuries described and methods of control set forth. This well-printed book of 390 pages is thoroughly illustrated and can be had of the Macmillan Company, New York, at \$2.50 per copy.

Plant varieties that have done well in your locality. It is not the safest plan to put our faith all in one kind of fruit.

SHEEP

Shropshire Rams Yearlings and Ram B.D.KELLY & SON, Ypsilanti, Mich.

FOR SALE SHROPSHIRE LAMBS, ewes or rams, ARMSTRONG BROS. R3 Fowlerville, Mich.

OXFORD Down Ram lambs, also a few ewe lambs. Berkshire both sexes. Booking orders for fall pigs. CHASE STOCK FARM, R. 1, Mariette, Mich.

For Sale Registered Oxford Down ram and ewes; can be seen at FAIRVIEW STOCK FARM, Fred Wolfe, Snover, Mich.

Field Seeds

when you buy



you get more for your money

BECAUSE

they are all northern grown—just the right kind of seeds for Michigan soil and climate. Tested for purity and germination by experts. Backed by Michigan's largest exclusive field seed house—with a reputation of over 25 years of square dealing. Decide now to sow Apex Brand Seeds—the results will make you glad you did. If your dealer doesn't handle them—write direct and send his name.

Caughy-Jossman Co.

Department M. F.

Detroit,

Michigan

Dairy and Hog Feed

Farmers are paying \$60.00 to \$80.00 ton for prepared 20% protein feeds. Why this waste and loss?

Our best grade cull beans analyze Moisture 8.60%, Protein 23.35%, Crude Fat 1.38, Crude Fiber 4.82%.

Cull Bean Pickings	\$42.00 ton
Cull Bean Millings	40.00 "

Sacks included, f. o. b. Port Huron, Mich. Ten cents each allowed on returned sacks.

You can produce a pound of pork cheaper on cull beans than any other feed.

Mix hundred pounds middlings with hundred pounds cooked cull beans and reduce your feed per cow, including ensilage cost, to around 40c per day, and increase your milk production from ten to forty per cent.

Other prices as follows:

Corn and Oat Chop Feed	\$58.00 ton
Gluten Feed	60.00 "
Old Process Oil Meal	60.00 "
Cluck Cluck Scratch Feed	70.00 "
Oyster Shells	25.00 "

Sacks included, f. o. b. shipping point. Send us your order for cull beans and other feeds. We save you money.

Cull Beans For Sale Carlots or bag lots. YOUNG-RANDOLPH SEED CO. Owosso, Mich.

Wanted position on a farm by married man, by month or year, between Howard City and Traverse City; farm experienced. EDW. SCHARF, R. 2, Box 104, Sturgis, Mich.

PORT HURON STORAGE & BEAN CO. Port Huron, Michigan

HORSES

Horses Will Be Horses Soon

We have on hand at all times a choice selection of young Percheron Stallions. Also have a few good work horses that we are offering to exchange for young stallions.

PALMER BROS. Belding, Mich. R.R. Orleans,

Percherons, Shorthorns and Duroc Jersey Hogs. J. M. HICKS & SONS, R. 2, Williamston, Mich.

Percherons, Holsteins, Angus, Shropshires, Durocs DORR D. BUELL, Elmira, Michigan.

Percheron Stallions and mares of reasonable prices; inspection invited. F. L. KING & SON, Charlotte, Mich.

For Sale Reg. Black Percheron 3 yr. old Stallion and a number of good sound grade draft colts. CHAS. BRAY, Okemos, Mich.

TEAM of horses white with black spots a good circus team or for city advertisement, sound, 5 and 6 years, mare and stallion. Sam Bueschler, Bay Port, Mich.

Must Sell Imported Percheron Stallion, color black, age 7, good weight, price right. Address O. V. REAMS, Buchanan, Michigan

Prof. Mumford's Sale

PROF. HERBERT W. MUMFORD'S Duroc Jersey sale, held at Chicago on December 3 under the auspices of the American Duroc Jersey Swine Breeders' Association made an average of \$428 for fifty-six head, which is a record for a bred sow sale, of the breed and emphasizes the commanding position in the country of one of Michigan's famous herds of Duroc Jersey swine.

Brookwater Lass D, the grand champion Duroc Jersey sow at the recent International Live Stock Exposition, was included in the sale offerings and realized \$2,225—the record price for an open sow. She was purchased by Mr. Thomas Johnson, Columbus, Ohio.

Brookwater Lass D is by Panama Special, the sire whose get won first at the National Swine Show this year, and out of a dam whose produce won the blue ribbon at the same show. Every individual in the sale was bred and developed at Brookwater Farm, Ann Arbor, Mich. Bidders from four-



Brookwater Lass D, Grand Champion Duroc Jersey Sow at International.

teen states divided the offerings at the following prices:

Thos. Johnson, Columbus, O.	\$2,225
Peacock & Hodgs, Elko Ga.	555
Charles W. Wampler, Harrisonburg, Va.	280
P. J. Sexton, Waukegan, Ill.	275
Lugibihl Bros., Pandora, Ohio	495
P. J. Sexton, Waukegan, Ill.	340
Duntreath Farms, Forest Hill, Tennessee	380
Edw. Dimig, Atlantic, Iowa	325
Johnstone Bros., Bloomington, Ill.	260
P. J. Sexton, Waukegan, Ill.	380
H. L. White, Columbia, Miss.	465
P. J. Sexton, Waukegan, Ill.	265
O. E. Wilcox, Deep River, Iowa	350
W. M. Putman, Tecumseh, Neb.	500
P. J. Sexton, Waukegan, Ill.	375
O. L. Reddish, Waveland, Ind.	450
P. J. Sexton, Waukegan, Ill.	300
P. J. Sexton, Waukegan, Ill.	310
Ortell Lininger, Fairfax, Mo.	460
H. E. Labart, Overton, Neb.	500
Ames Bros., Weaver, Minn.	525
M. McCarty, Council Bluffs, Ia.	370
D. D. Clifton, La Rue, Ohio	500
John Sugg, Morganfield, Ky.	400
Peacock & Hodge, Cochran, Ga.	400
Silas Willard, Princeville, Ill.	1,000
P. J. Sexton, Waukegan, Ill.	595
John Hartle & Son, Owatonna, Minn.	430
Edw. Dimig, Atlantic, Iowa	390
Everett & McDowell, Streator, Illinois	450
Duntreath Farm, Forest Hill, Tenn.	525
L. F. Atwater, Bangor, Wis.	430
Clarence Croft, Fennimore, Wis.	310
W. H. Putman, Tecumseh, Neb.	340
F. J. Moser, Goff Kansas	400
Duntreath Farms, Forest Hill, Tenn.	600
W. M. Putman, Tecumseh, Neb.	455
P. J. Sexton, Waukegan, Ill.	205
P. J. Sexton, Waukegan, Ill.	275
W. M. Putman, Tecumseh, Neb.	375
Coldstream Farm, Lexington, Ky.	485
L. F. Atwater, Bangor, Wis.	440
McKee Bros., Versailles, Ky.	400
James Hackett, Sycamore, Ill.	300
John Hartle & Sons, Owatonna, Minn.	240
Carl Trough, Danville, Ill.	280
John Hartle & Sons, Owatonna, Minn.	255
P. J. Sexton, Waukegan, Ill.	500
P. J. Sexton, Waukegan, Ill.	330
W. H. Garber, Washington, Ill.	400
P. J. Sexton, Waukegan, Ill.	255
Christopher Herbert, Rock Rapids, Iowa	350
P. J. Sexton, Waukegan, Ill.	255
Johnstone Bros., Bloomington, Ill.	255
P. J. Sexton, Waukegan, Ill.	245
Grunenwald Bros., Livingston, Wisconsin	400



Successful Farmers

like Unicorn Dairy Ration because it brings out all the milk the cow can make. Just the feed to use with your home grown grain or alone.

During the cold, harsh, trying winter months every cow needs the best nourishing feed. She must maintain her bodily vigor as well as her bountiful flow of milk.

Every Unicorn feeder is a permanent Unicorn buyer.

Unicorn Dairy Ration is manufactured by

CHAPIN & CO., Dept. M, CHICAGO

Buy Your
Feed Early

Keep Track of Your Money

**Farm Account
BOOK FREE**

KNOW exactly how much you spend for what you buy and exactly how much you take in for what you sell. Keep track of every account easily with Bickmore's Farm Account Book. Enables you to file accurate income tax and helps you guard your profits. With the book we will send you a trial size lot of

Bickmore's Gall Cure

—standard remedy for bruises, cuts, rope burns or any wounds on horses or cattle. Cures collar and saddle galls while the horse works—no lost time! Fine for chapped hands on cows. Heals sprains and other skin diseases. Note the work-horse trademark. Send a letter now for Farm Account Book and Trial Size of Bickmore's Gall Cure. Please enclose 10c to help pay for postage and packing. Address,

THE BICKMORE CO., Box 151 Old Town, Maine.

SPECIAL FEATURES
The book shows you how to keep crop costs by lots; labor charges against crop; crop rotation records. Contains also a table to keep accurate record of your breeding dates, etc. Also a Workman's Time Sheet and Wage Table—saves a world of bother. Also pages for inventory; table of standard weights of all farm products. Also directions as to how to measure land; corn on cob in cobs; hay in different style stacks, etc., etc.



BEANS & SEED

Send us your samples. Particulars of wet and off grade beans. Clover seed and seed screenings wanted. Cull beans for sale.

W. L. IRELAND & CO.,

Grand Ledge, Mich.

CORN CARLOADS

Carpenter Grain Co.
Battle Creek, Michigan

Mr. POULTRY FARMER:

We make a specialty of White Henery Eggs and have created a profitable market for your eggs the year around. We pay the highest premium for your Henery Whites—We remit same day shipments arrive.

Ship Often—Ship by Express

GEO. R. ELDRIDGE CO.

494-18th Street, Detroit, Mich.

Remember! We guarantee you satisfaction with every shipment.

CULOTTA & JULL

Eastern Market, Detroit, Mich.

We need your shipments of Poultry, Veal, Dressed Hogs, Live Roasting Figs, Eggs, Live Rabbits and Game. Highest prices possible obtained on arrival. We can handle your Potatoes, Onions, Apples, Cabbage and root crops, carlots or less. Your shipments will be appreciated and have our best care and attention, and you don't have to wait for your money.

Reference Peninsular State Bank.

Holmes, Stuve Co., 445 Riopelle St.

Commission Merchants. Dressed Beef, Hogs, calves, Poultry, Live & Dressed, Provisions, etc. Correspondence Solicited. Ref. Wayne County & Home Savings Bank, Bradstreet, Detroit, Mich. Cad. 2878.

HAY

Ship To The Old Reliable House

Daniel McCaffrey's Sons,

623-625 Walnut Bldg., Pittsburgh Pa.

Write for our Illustrated Circular

"SHIP EGGS WITHOUT BREAKING"

Tells how to get more for your selected eggs.

DIAMOND BOX MFG. CO., Minneapolis, Minn.

50 good Belgian Hares, and other large Rabbits, also some fox and Rabbit hounds

enclose stamp. W. E. Lecky, Holmesville, O.

Farms and Farm Lands For Sale

Valley View Farm 136 Acres Equipped \$14,000

Show your wife the picture of the beautiful 2-story, 3-room residence and she will want it for her home. Picture of big modern basement barn, silo, henery piggery, etc. will please you too. Electric lights, hot water heat, bath, telephone. 12-room tenant house. On improved road, only 1/4 mile to depot town, high school, library, bank, Borden's Fertilizer, loam soil that has out 3 tons clover hay to acre and grown 55 bu. oats and 60 bu. shelled corn. This money-maker, in pink of condition, is offered for immediate sale by aged owner. If taken soon he includes 18 cows, 12 heifers and calves, bulls, (17 are registered Holsteins) pair horses, poultry, hogs, tools, wagons, machinery, potatoes, oats, hay, straw, ensilage, etc., etc. \$14,000 is the low price, part down. Pictures and details page 34 "Strout's Bargain Catalogue" 17 states. Write for copy. Dept. 101, E. A. STROUT FARM AGENCY, Ford Bldg., Detroit, Mich.

Sheep or Cattle Ranch For Sale

1622 acres, 210 acres cleared, seven miles from county seat, Clare Co., Mich. Two sets buildings; sheep 190x 45; elevated tank; wind mill, water piped inside barn. Well at house furnishes water for both dwellings; stock scales and sorting pens in Frost twp. all fenced with some cross fences, free access to lake water in summer, 353 acres in Hayes twp. half under fences. Very best of land, sandy and clay loam. Terms reasonable price \$20,500. J. M. CUMMINS, R. 2, Harrison, Mich.

Beautiful modern home, steam heat, 3 lots, extensive shrubbery, fruit and shade, block from CENTRAL MICHIGAN NORMAL COLLEGE, will sell or trade for small farm, or stock general merchandise. Cooper, Gover & Francis, Mt. Pleasant, Mich.

FLORIDA WINTER HOMES

1000 acre ranch \$7000. 10 acres \$250, or 40 acres \$800. 25% cash. T. J. Youmans, Roberts block, Tampa, Florida

U. G. REYNOLDS

Sells Gladwin County Farms, Stock Ranches, Unimproved lands. Many choice bargains at this time.

GLADWIN, MICHIGAN

WANTED to hear from owner of good farm for sale.

State cash price, full particulars.

D. F. Bush, Minneapolis, Minn.

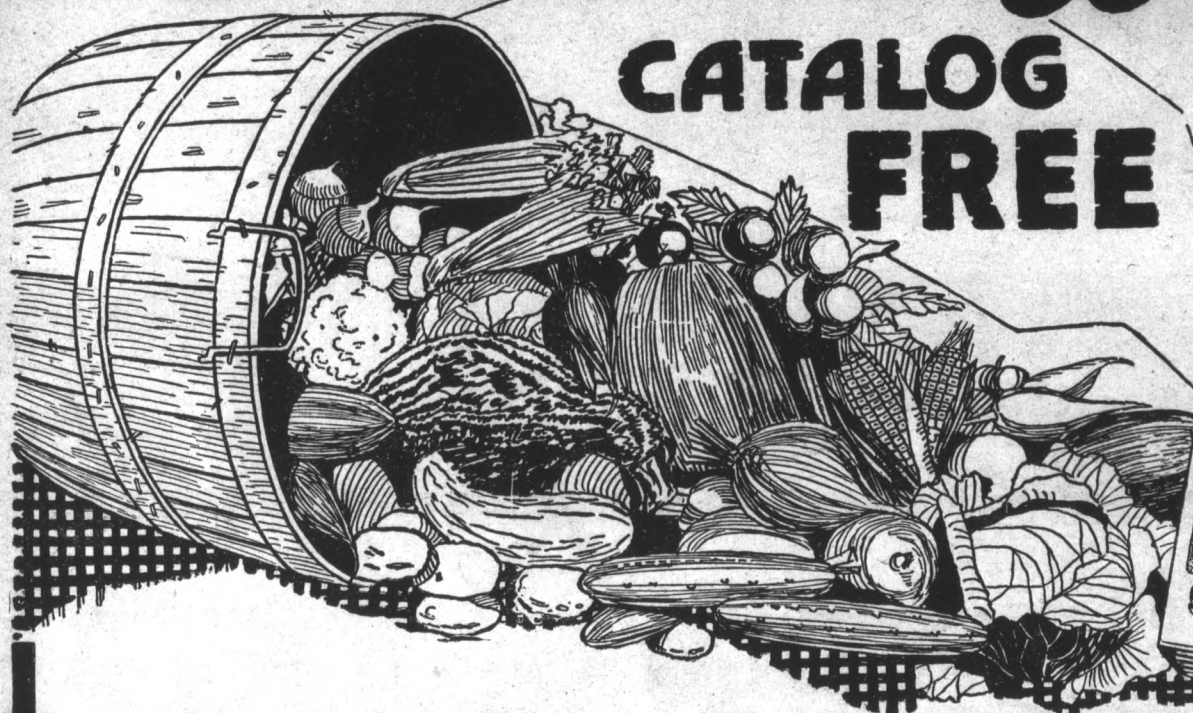
FEEDING CORN

Car lots or less.

YOUNG-RANDOLPH SEED CO., Owosso, Mich.

Now For a Bigger Crop!

CATALOG FREE



Prepare With Good Seeds For The Victory Harvest

With the coming of Victory America needs great crops. Millions of hungry mouths in war-torn Europe look to America to feed them. It means American Farmers must produce the biggest crops in history, and big crops mean many extra dollars in profit for the grower. He will get high prices and labor will be plentiful. There must be no "Slacker Acres", no crop failures, if human effort can prevent it. Good seed is of first importance—proper planting and proper care next. To be sure of the seed you plant—get

ISBELL'S VICTORY SPECIALTIES

Here are a few of the special Isbell varieties. Hundreds of Isbell customers have given these popular specialties place in their gardens and farms. Isbell's 1919 Seed Annual will tell you about these varieties and many more equally as good.



Isbell's Earlibell Tomato

Without the ideal climate of Michigan and our long experience in growing vegetables for seed only, we could not have produced this wonderful variety. It is the earliest in cultivation, brings high market prices and a heavy yielder. Good size fruit, very smooth. Ripens uniformly into a deep, glossy scarlet. See 1919 Annual for remarkable facts concerning this variety.

Isbell's Wonder Wax Beans

The earliest wax-podded bean. Practically rust-proof and stringless. Bears for a long season. Big yielder. Stands unusual conditions. Ideal bean for home and market—always brings top prices. Get more facts in new catalog. Send today.

"Bell Brand" Farm Seeds

Produced in Michigan, the best seed growing section in the world. Only the finest quality, fully tested, guaranteed Grass, Clover, Alfalfa, and in fact all farm seeds are sold under Isbell's Trade Mark—"Bell Brand".

Ask for Samples, Catalog and Current Farm Seed Price List
Try Wolverine Oats This Year



They give you the very best that money can buy at prices that save you money. 40 years' experience goes into Isbell's Seeds. Ceaseless experiments, careful selection and testing has produced the most hardy, big-yielding varieties. Only the cleanest, purest seed ever reaches an Isbell customer—seeds you can "bank on" being good, full of life and will grow. **Every ounce is guaranteed.** You can have your money back if your own tests do not prove satisfactory. This fair and square Isbell policy has made more than 250,000 satisfied buyers of Isbell's seeds.

It's Money in Your Pocket to Investigate

It means money saved to buy at Isbell's fair prices and money made by growing and better crops. Never has care in the selection of seed been more important. Isbell's modern methods of preparing seeds for market in its new modern plant and Isbell's "proven value," Michigan grown varieties are as near crop-insurance as you can get.

Isbell's 1919 Seed Annual Now Ready

It's a true guide for growing a Victory Crop. It's the biggest and best book that Isbell's ever published. Shows how quality seeds are selected, cleaned and tested. It's written by men who have years of experience, and shows how to take the guesswork out of planting. With this book we'll send you your choice of any field seeds you may want to test. Simply mail the coupon—the book and sample seeds are Free. Do it today, so you can order early and be sure of big crops.



FREE Samples

To give you an idea of Isbell quality we will send you Free Samples, with our 1919 Seed Annual, of any farm seeds, and when you open the bag you buy you'll find the seed as good as the sample. Simply check the coupon and we send samples of the best varieties suited to your locality. All Isbell field seeds are carefully grown and carefully cleaned by the most modern methods—tested and sold with the understanding that they are all we say or you can have your money back.

Plant Isbell's Seeds

Get Our Samples
and Catalog—Don't
Wait—Now While this
is Handy—Send Coupon

FREE Samples and Catalog Coupon

S. M. ISBELL & CO.
1100 Mechanic Street
JACKSON, MICH.

Gentlemen:—

Send me 1919 Seed Annual and Free Samples of the following Isbell's field seeds:

Corn _____ Barley _____ Oats _____
Alfalfa _____ Clover _____ Timothy _____

Name _____

Address _____

S. M. ISBELL & COMPANY

1100 Mechanic Street

Jackson, Michigan