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How Other Farmers Meet Problems

By J. M. WENDT, County Agent of St. Joseph County

THE slogan of many of the railroad companies and other concerns which make it a business to encourage travel and to advertise various towns, is "See America First." Many people will travel, regardless of whether the war is going on or not, and as the road to Europe is practically closed, except to soldiers, they must travel in America if they are to travel at all. And indeed, there are many more wonderful things right here in America than the most of us have ever realized. This "See America First" policy can frequently be carried out on a small scale very conveniently and profitably, as was shown recently in St. Joseph county.

On July 4, a number of people in St. Joseph, Mich., wanted some way to spend the holiday that would be really worth while, so they arranged to go with their county agent on a tour of the county. Accordingly, a number of farmers gathered in the morning at the court house at Centreville, with their automobiles and families, and started out on an observation tour. About twenty machines made the start and before noon a count was made and there were found to be thirty, with something over a hundred and fifty people who were enjoying the occasion immensely.

As it was just before harvest they had an opportunity to see everything to the best possible advantage. They visited alfalfa fields, fields of Red Rock wheat, Rosen rye, sweet clover, potatoes, a splendid orchard, and saw some excellent herds of cattle, sheep and hogs. The route also took the bunch across the Kellogg Strawberry Farm with its one hundred and forty acres of overhead irrigation. Stops were made where there might be things of special interest and at each place visited they made it a point to ask the owner the particular line of treatment that had been followed, if it was a crop he was growing, and if it was live stock they came to see, they found just how he managed to care for the herd.

At noon the company arrived at the farm of Mr. Fred Van Norsdal, who

resides in Fabius township, west of the city of Three Rivers, on the bank of the well-known Corey Lake. Mr. Van Norsdal has the distinction of owning the best apple orchard in St. Joseph county and he took particular delight in having the company there to see it and to take dinner with him on his spacious lawn. No, he didn't have

to feed the entire company, as they had been foresighted enough to bring lunch with them.

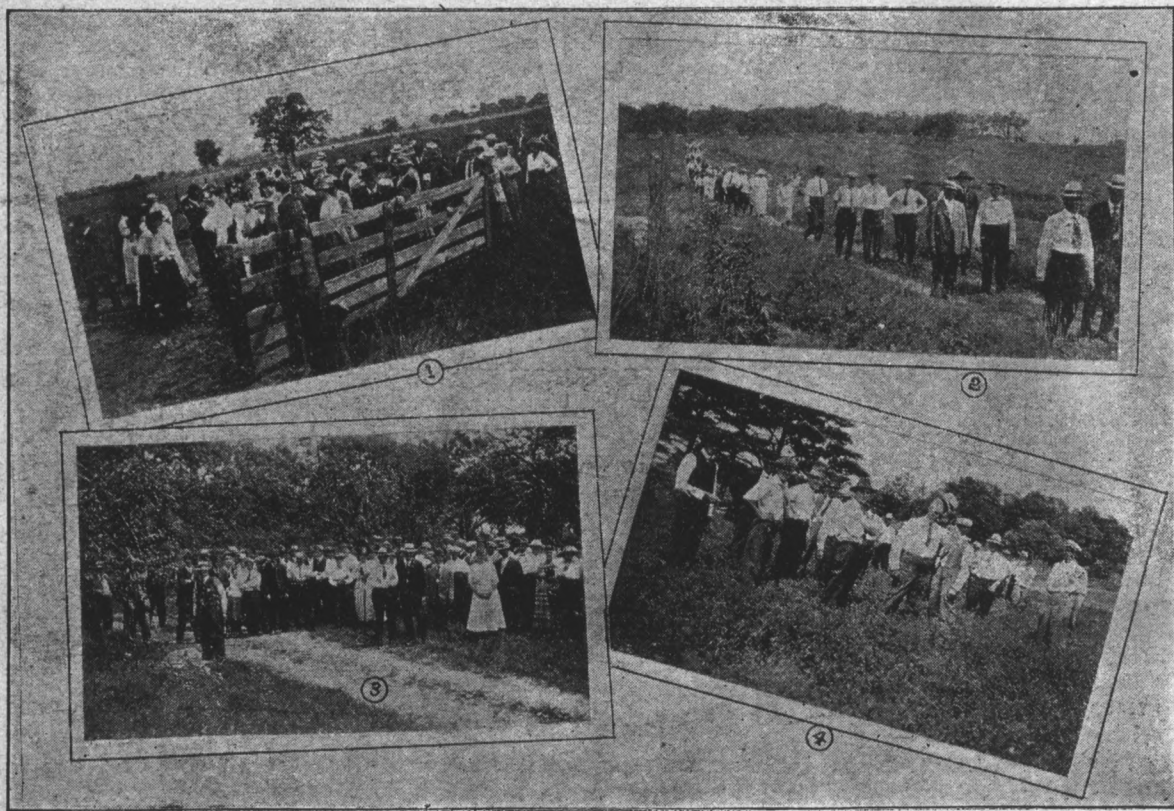
The trip was particularly worth while as nearly everyone visited farms they had never visited, (and probably never would have, except under some such circumstances). Quite a number saw a great many new things that had

been successful on the other fellow's place and which they could take home with them and apply. They were impressed with the degree of success with which alfalfa is being grown on a number of different places, finding that it is not such a difficult crop to grow and that it is dependable. They found there is really an enormous amount of Rosen Rye growing in the county and that it is so much superior to the old common rye there is no comparison. You know, St. Joseph county claims to be growing more Rosen Rye than any other county in the state and the trip of the Fourth of July showed a good substantial basis for that claim. Red Rock wheat is a pretty good variety to tie to for Southern Michigan. It is showing up much better than other varieties, wherever there is an opportunity for comparison.

The members of the party who were breeding registered live stock had a fine opportunity to compare the breeding and individuality of the animals on the other fellow's farm with the ones they had at home. The members who were keeping scrub animals had

an opportunity to compare the pure-breds with the scrubs they had at home. The value of this kind of a trip through the country was clearly brought out. In the first place it created a responsibility upon the part of the farmer whose farm we visited. He was responsible because he felt himself a part of the plan to make the day interesting to his visitors. Those of his neighbors assembled felt free to ask questions and discuss the things they saw on his farm which interested them. All manner of farm questions were open for discussion. Sometimes we would gather in an orchard, an alfalfa or grain field, or in the dairy barn or stock yards where crop growing, fruit growing and stock breeding and feeding problems were discussed. All of this served to add a community spirit to our work. In fact, most of the party expressed themselves as surprised at the progress the county was making in an agricultural way.

Let us have more of these tours, so we can see what the others are doing.



Such Demonstrations Help us Know Our Own Counties and Neighbors Better.

Growing Rye on Muck

By EZRA LEVIN

YOU can grow rye on muck. This is the answer to a question which has been asked me more than any other in the last month by county agents and muck farmers. In response to their request I will present these conclusions which are based on two years of experimentation and observation.

There are four considerations, each of which will receive a complete discussion at another time, which will make grain, eliminate the objectionable features of excess straw, lodging, winter-killing of rye on muck.

1. Roll the soil thoroughly.
2. Use acid phosphate.
3. Increase the amount of seed sown per acre.
4. Sow early.

These are given in the order of their importance.

Rolling does not pack the soil around the plant as you do when you put in a fence post to keep it from falling over. This is not the purpose of rolling muck. Rolling has the important object of repressing nitrification, of keeping the soil germs from releasing the nitrogen too rapidly, of preventing excess straw, of eliminating lodging.

If the muck is in a cultivated crop now, do not plow. Disk shallow, but thoroughly.

Use Acid Phosphate.

I have seen beautiful fields of rye with no grain on muck. Acid phosphate is essential. Our experimental plots in different parts of the state have shown conclusively that even when manure is applied in large quantities, the addition of acid phosphate

(Continued on page 134).

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CURRENT COMMENT.

The Mill Feed Situation. The basic price of wheat mill feed for Michigan as fixed by the Food Administration is, for the Detroit area, \$27.46 per ton for bran, \$28.71 for mixed feed, and \$29.46 for middling of all grades. This price varies slightly for other areas in the state, running as high as \$28.86 for bran and \$30.86 for middlings in territories less favorably situated from the standpoint of transportation.

In making sales of wheat mill feeds, wheat flour millers are permitted to add a margin of \$1.00 per ton in selling mill feeds to wholesalers in less than carlots. In selling to retailers in ton lots or more, they may add a margin of \$2.00 per ton, and in less than ton lots a margin of \$3.00 per ton to the basic price. In selling to consumers in ton lots or more a margin of \$3.00 per ton over the basic price may be taken, and in selling in less than ton lots a margin at the rate of \$4.00 per ton may be taken. No miller is entitled to a jobber's profit or any other kind of a profit in addition to these described margins, even though he may maintain a separate jobbing department.

In the box on this page will be found the regulations governing the sale of mill feeds by jobbers and wholesalers. In addition to these charges, the cost of sacks must be taken into consideration, which will average about \$6.00 per ton at the present price of sacks. The freight rate from the mill to the point of destination by the route traveled, must also be added. Where the feed is originally sold by the miller to the jobber or wholesaler a legitimate cartage charge which in large cities will be about \$1.50 per ton, is permissible. The purchaser is also entitled to the cost of hauling from the depot to his warehouse under the regulations. Only one wholesaler's or jobber's profit is permissible. Given the source of supply, the purchaser of mill feeds at retail should be able to figure out from these schedules approximately what he should pay for such feeds at retail in his home town. If he has been charged

more than a legitimate price, he should, in every case, ask for a receipted bill of his purchase and send same to State Food Administrator Prescott at Lansing, Michigan. If any Michigan Farmer reader prefers to send such information to us, we will gladly file same with the Food Administration, and publish any facts which may be developed showing where profiteering has been practiced, as it has been practiced in far too many cases in the distribution of wheat mill feeds.

Properly the farmers of Michigan should be able to secure needed mill feeds from local mills at a minimum cost of handling. But the millers, in many cases have refused to sell to farmers, claiming that there is not enough mill feed to go around and that they are obliged to distribute their product pro-rata to their regular customers, which seem to be mostly feed dealers.

This practice has compelled the purchase of practically all mill feeds by ultimate consumers at retail prices from local dealers. Owing to shortage of pastures and scarcity of other feeds the demand has been abnormal. To satisfy this demand, considerable quantities of mill feeds have been shipped in from outside the state, on which accumulated freight bills have run as high as \$8.00 per ton, and jobbers' and retailers' prices varied accordingly. At the same time it is believed that much of the mill feed produced in Michigan has been shipped out of the state.

One reason why complaints have not been even more numerous than they have, is due to the fact that farmers have feared the entering of a complaint might cut off their source of supply at the time when they could not easily secure any other feed at a reasonable price to satisfy their absolute

ing flour, and where a farmer has no other available feed to grind his rye of any grade for this purpose.

With prevailing prices, rye, barley and oats can be combined to meet the average farmer's requirements for feed, so that he need have no fear in reporting cases where he believes profiteering has been practiced in the sale of wheat mill feeds. Even under the handicap of being obliged to buy mill feeds from local dealers, Michigan farmers should be able to buy at retail bran and middlings produced in the state for \$2.25 to \$2.35 per cwt., sacks included, allowing for all legitimate charges. In every case where more than \$2.50 to \$2.60 is asked investigation is warranted.

But retail buying should not be necessary. The farmers of a community should pool their orders and buy in carlots wherever possible. If the farmers of any community are unable to buy for cash on this basis we shall be glad to turn on the searchlight of publicity to find out why.

Horticulture an Aid in Character Building.

Without regard to its attractive commercial possibilities, horticulture is entitled to more attention on Michigan farms. Our farms could be made infinitely more satisfactory and self-supporting by the presence of beautiful and useful fruit trees grouped about the farmstead, scattered along division fences, and in fields not adapted to other crops. Our appreciation of fruit as a complement to our everyday diet is not yet sufficiently developed to make us healthy and free from digestive ailments as we ought to be.

Practical farmers, as a rule, do not allow themselves to be influenced by

ness and success on the farm. For this reason beautiful and useful trees with which any farmer can easily environ his home and distinguish his farm, pay both directly and indirectly. Children reared where nature has expression in trees and luscious crops of fruit have a resource and home-loving quality in their later lives that proves the potency of horticulture in character building.

The sweetest memories of farm life are intimately associated with beautiful and useful trees. We believe that farmers in this great fruit-producing state of Michigan cannot afford to neglect the planting of fruit trees for beautification and profit.

The present estimated The Highway Problem.

the United States approximates 2,750,000 miles. Between the years 1909 to 1915 approximately 67,000 miles of public road had been re-surfaced, or an average of about 15,000 miles per annum. During the same period it is estimated that new roads have been opened up approximating an annual additional mileage of 50,000 miles. It will thus be seen that while the improvement of our public highways by re-surfacing in a durable manner has been considerable, the addition of new highways is annually three times as great.

If it should be considered that twenty per cent of the total road mileage should be improved to give the country an adequate highway system, at the annual rate of improvement heretofore made it would take a generation to bring about the improvement of this fifth of the total road mileage. Under present conditions of construction and maintenance, many of these improved roads would be totally worn out long before the last of the twenty per cent were finally improved.

The progress which has been made in permanent road improvement is a matter for special congratulation at this time, due to the use which is being made of these improved roads in the transportation of war equipment to the seaboard. This traffic, however, will increase rather than decrease the problem of road improvement, due to the fact that it will shorten the life of the improved roads so used very materially. These facts emphasize the need of a comprehensive system of national aid in road improvement. Perhaps the plan already in force may prove to be well adapted to the needs of the country. Traffic conditions are, however, changing rapidly, and with the increased use of heavy trucks on improved highways for the marketing of farm produce, helping out in other freight transportation, some permanent types of roads will be required. While considerable progress has been made in the solution of the road problem, much yet remains to be worked out, in order that the vast amount of money used in this public work may be expended to the best advantage.

Perhaps the economic factor needing first consideration in our own state is the proper maintenance of improved roads after their construction. In too many cases our improved highways are not given the care which they should receive to maintain their efficiency over a maximum period of time. County and local highway officers should be chosen for their particular fitness for this work, rather than on personal grounds, and the more efficient ones should be kept on the job, regardless of political exigencies. Public spirited citizens everywhere should give this matter consideration at the coming primaries where county road officials are to be nominated.

Lincoln's pronouncement on slavery seems manifest on a tremendously magnified scale in our present great conflict, for the world now well realizes that it cannot exist half slave and half free.

Rules Governing Sales of Wheat Mill Feeds

Jobbers and Wholesalers

No jobber or wholesaler shall sell any wheat mill feeds at an advance over the bulk price at mill in excess of the following:

1. Shipment from mill or in transit, payment cash, demand draft or sight draft, \$1.00 per ton.
2. Shipment from mill or in transit, sale on arrival draft terms, \$1.50 per ton.
3. Sale ex-jobber's warehouse, payment cash, sight draft or demand draft, \$2.50 per ton.
4. Sale ex-jobber's warehouse, upon arrival, draft terms, \$3.00 per ton.
5. In making sales on credit not to exceed \$1.00 per ton may be added to the margin which could be charged if sold on arrival draft terms.

Retailers

1. Where one or more farmers purchase in advance of delivery full carloads, take delivery at car and pay for it on delivery, \$1.50 per ton, plus demurrage, if any.
2. Where a farmer purchases and takes delivery at car, and pays for it on delivery, in ton lots or more, but less than carlots, \$2.00 per ton.
3. Where a farmer purchases and takes delivery at car, and pays for it on delivery, in lots less than one ton, \$2.50 per ton.
4. Sales ex-warehouse in lots of one ton or more, \$4.00 per ton.
5. Sales ex-warehouse in lots of less than one ton, \$5.00 per ton.
6. In making a credit sale you may add a charge at the rate of one per cent a month.
7. In making a delivery you are entitled to make a reasonable delivery charge. Your cost price of feeds is determined by taking the invoice price, adding the freight, if paid by you, and adding the actual cost of cartage from the railroad to your place of business.

needs. This crisis has, however, passed for the present, due to the fact that the threshing season has now begun and home-grown feeds will be obtainable for use.

Notwithstanding the published statements to the effect that the grinding of barley has been restricted, there has been no official order to this effect, and any farmer who has barley can have same ground for feeding purposes. The State Food Administrator is also issuing a general permit to millers to grind for feeding purposes, any rye which may not be of a grade suitable for mill-

artistic values, or such small things as producing food for the home-table, contending that they cannot afford to spend their time fooling with anything unless it pays in immediate cash returns. Nevertheless, almost everyone of them invariably craves delicious fruits and appreciates natural beauty in all its simpler forms. It is not book education that causes men and women to love trees and attractive surroundings. It is the passion of the inner-life for harmonious outward relationships. This emotion and love of the beautiful and useful has much to do with happi-

Getting Before the Court of Public Opinion

WHEN the railway men wanted a raise in pay they had a national organization to speak for them as a united body; and through this body they threatened to paralyze the transportation of the country if their demands were not granted, and they conducted an advertising campaign, comparing their wages with the most favored trades, to show that they were not getting enough. They got what they were after.

When a federal commission, after investigating the meat packers, reported that they were making inordinate profits out of the war necessities of the country, they bought space by the page in all the public prints, and began arguing their case to the public; and they will get away with it.

When the urban population began crying "play fair, Mr. Farmer, play fair," the farmers had no organization to make answer, nor even to learn what the city sentiment is and how it is working against them; and not a word has been said to correct the false notions. Every day we hear such expressions as: "The farmers are certainly making a killing these days; why, when I was a kid on the farm, dad was tickled to get \$5 for his hogs, and now they are quoted at \$18 and better." The tenderfoot who shouts this sort of thing sometimes rushes out

Prof. Rood of the University of Michigan Tells How Other Interests Get Before this High Court and Why the Farmers Fail

into the country to join in the killing; but he usually sneaks back to town on a side street after the first round or two, and keeps so blamed quiet about farming forever after that his comrades never learn the facts from him.

It is the failure of the farmer to take his case to the high court of public opinion that has caused the prices of his products to him to be set below the cost of production. If he had a national organization to inform the public of the facts, his patriotism in raising needed crops regardless of cost or loss, because the national crisis needed them, would not be thrown in his face as answer sufficient to his request for a living price.

The national chamber of agriculture the organization of which is now being urged by a number of public-spirited men, could well act as the farmer's mouth-piece in such cases and matters. It could both gather the needed facts and give them the necessary publicity; and its word would count for something. No private individual can do these things for himself. He can't afford it. His word would not count. No more valuable service has been done

the farmer recently than the investigations and reports of the milk commission, based on the data collected by Professor Anderson, of M. A. C., and others. The results of that publication are well known.

Naturally we all have a mild curious interest to know whether we are making or losing in any line of farming; but frequently the margin is wide enough that we need no book-keeper to tell us the harrowing details, and it don't hurt quite so bad if the facts are never absolutely known and the known forgotten as soon as possible. But we do very much want, and are vitally interested in having other people know, what production costs. We want other farmers to know what it costs, and we want the consumer to know.

We want other farmers to know, because no form of competition is so discouraging as the competition of the man who insists and persists in producing and selling at a loss. In most business this sort of competition would be short, and it would be in farming but for the fact that many farmers do not have to pay any wages nor interest. They own the equipment, do the

work themselves, and live on about half of the going rate of interest on their capital. Most of the men doing this do not realize what they are doing, and would quit if convinced of the facts, and leave the field to those so situated that they can produce at a lower cost; and it would be better for the community and for the persons so quitting that they should engage in some occupation in which they can earn a living profit.

Secondly, we want the consumer to know what the cost of production is, so that he will not think he is being robbed when he pays a living price. If he knows that the price is fair he will pay it ungrudgingly; though he dislikes to part with the money; whereas, he would be spiteful and bitter, if he thought he were overcharged; and by his opposition he might, nay usually does, avoid payment, prevent the price being obtained, curtail consumption, etc.

Let us have an organization to find the cost of production as well as to help market the goods, and to give proper publicity to the facts. Let us have more cost accounts and surveys published. First let the farmer know; secondly, inform the consumer of these facts. A National Chamber of Agriculture could accomplish the desired results.

Breeding, Feeding and Weeding the Dairy Herd

THE systematic breeding of the dairy cow is a subject that should be of considerable interest to the general farmer. The high prices received for butter and cheese during the past season, and the prospect that the business will be equally prosperous for another year, should be an incentive to use every available means for increasing the profits. This does not necessarily mean that we should increase the number of cows in our herds. In fact, it would more often be found wiser to dispose of several. The chief function of a good dairy cow is to produce economically, large quantities of milk and when she ceases or fails to do this, her usefulness as a source of profit is gone. It will not perhaps, be untimely to discuss in brief several points in connection with this question, submitting conclusions from personal experience and observation. In order to get the best results out of dairy cattle there are three essential features which may be concisely stated: Breed, feed and weed. Usually if one is to procure a herd of good paying cows he must breed them himself, as only in very rare instances will he be able to purchase such from his neighbors. In almost any herd there are a number of good individuals which may serve as a foundation. By using good judgment in the selection of a bull of the proper dairy type and sticking to the same breed a few years will show considerable progress. In selecting a sire particular attention should be paid to his dam. Provided, as an individual he is satisfactory, and has good breeding, based on performance, he is almost certain to get good calves. If it were only more generally realized, how true is the adage that, the bull is half the herd, there would be more attention paid to the principles of breeding and their application.

No cow is capable of doing her best without proper food. The feed must largely depend on the surrounding conditions, such as the adaptability of the land to produce the necessary crops, or the price at which they can be bought to advantage in the market. Whichever method may be pursued, there are certain principles of feeding that should serve as a guide

Mr. J. P. Fletcher of New York Explains Three of the Fundamentals of Profitable Dairy Herd Management.



Canary Mercedes Pieterje Aaggie. Seven-day Butter Record of 29.42 Pounds; Milk 689.1. An excellent Example of what Breeding, Feeding and Weeding has Accomplished on the Farm of A. F. Loomis, of Owosso, Michigan.

in compounding a ration, judgment being used in applying them to suit individual requirements. All fodders are composed chiefly of protein, carbohydrates and fat. The first of these nutrients goes to form the hide, hair, hoofs, horns and muscle, and also enters largely into the formation of milk. The other two go to produce heat, energy and fat. It has been found by experiment that about one part of protein to six of carbohydrates and fat gives the best results in feeding. This relation is as the nutritive ratio. Thus by referring to a chart giving the com-

position of the various feeding materials, it is a simple operation to figure out what proportion of the different food stuffs at hand are required to make up a balanced ration. Having gone this far, we must consider the age of the animals we are feeding. Young animals require food richer in protein than older animals, as they are building up new bone and muscle. A dairy animal should be so fed from birth to maturity, as to encourage a rapid growth without acquiring a tendency to put on fat. To grade up a herd successfully it is necessary to

keep a record of the yield of each cow.

Not only are we able to weed out unprofitable ones by so doing, but the utility of such records are of great importance as a guide to the feeder. By their aid one is able to tell what any particular cow is doing and thus judge the ration for each accordingly. This will often result in feeding more economically. The writer's experience in this connection has been very satisfactory. By using the scales we have been able to increase or decrease the ration, as circumstances might warrant. It is sometimes urged that such a system of keeping records entails too much trouble, and is unnecessary to ascertain the best milkers. This may in a measure be true, but when weighing is practiced in connection with a systematic use of the Babcock test, and in sections where patrons are paid according to the butter-fat content of their milk the testing of individual cows is of no little importance. Not infrequently, the cow that yields the smallest quantity of milk in a herd will be discovered by the test to be as profitable as, or more profitable, than some of the heavy milkers. But the objections in regard to time, labor, etc., have never, to our knowledge, been made by any person who has given the system a fair trial.

A spring balance is placed in a convenient place in the stable, as are also the record sheets. When a cow is milked it only takes a few seconds to hang the pail on the spring balance, which instantly denotes the weight of the milk plus the pail which, of course, has to be deducted before the record is made. Another feature that should not be overlooked is the interest it creates in those engaged in the work, hence better care and more comfort to the cows. In short, we find it a most important factor in building up and maintaining a dairy herd.

The farmers of Macomb county have had the hearty cooperation of the city people in the eradication of the Barber. In a recent trip over the county it was found that with very few exceptions everyone is more than willing to "swat the prickly hun."



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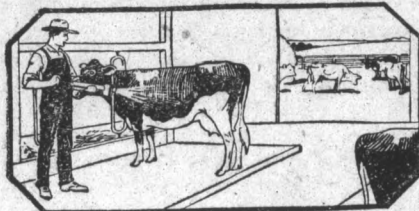
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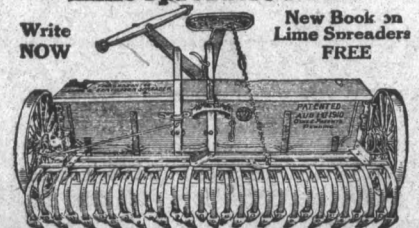
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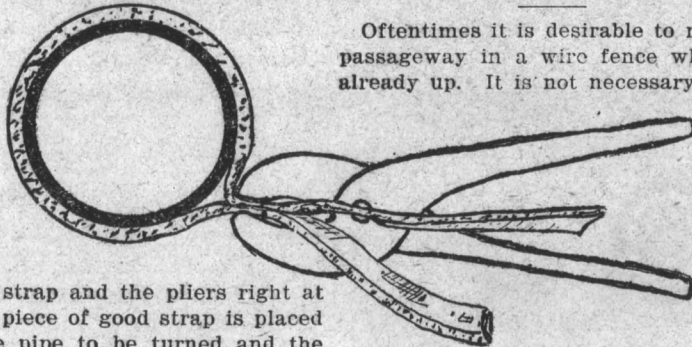
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Suggestions for Busy Farmers

A HOME-MADE PIPE WRENCH.

A short while ago there appeared on the suggestion page of your periodical an illustrated description of how one can improvise a pipe wrench with a strap and a piece of tough wood. Here is a suggestion that will prove even more simple and convenient to the average farmer for he is most certain to



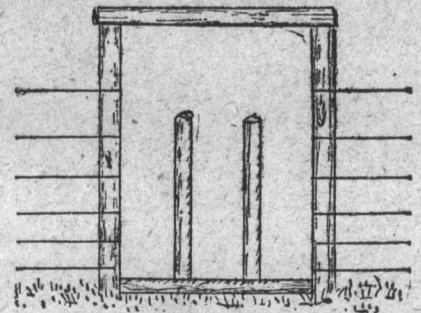
have the strap and the pliers right at hand. A piece of good strap is placed about the pipe to be turned and the two ends of the strap are gripped close to the pipe with pliers, as shown in the illustration. By turning the pl-

ers in the direction the pipe is to be twisted one of the jaws presses hard against the strap and prevents it from slipping, while the other end pulls on the pipe. This is a very valuable thing to understand, especially for the farmer as he has so many troubles to deal with in the course of his work.—S.

A CHEAP GATE.

Oftentimes it is desirable to make a passageway in a wire fence which is already up. It is not necessary to go

be avoided. The pieces across the top and bottom of the long posts are all the braces necessary and the two short



posts allow the easy passage of humans but keep out animals.—L. S.

If you have a big horse on one end of the doubletree and a colt or a light horse on the other end, it is often advisable to give the little fellow an advantage.

More is accomplished by keeping the team going steadily than by rushing for a few hours and idling in the fence corner for half an hour now and then.

Dairymen Approaching a Crisis

By Field Secretary Reed

SO many questions are coming to us concerning this important subject, that it would seem that some suggestion or advice might be given that would be of value to the dairymen, but upon closer analysis we find ourselves completely enshrouded in a haze of questions and problems which we are absolutely unable to solve.

I think that the great majority of our people desire to be patriotic. We will do all that we have done and then infinitely more, in our endeavor to preserve our nation and to supply food. We do not propose to be slackers or unpatriotic while the future of the nation hangs in the balance.

We appreciate the fact that the price of milk to the producer has been increased very much within the last twelve months. We appreciate, also, that this price has been obtained without bringing upon us the odium of prosecution, imprisonment or fines. We are thankful for the recognition that is given the Michigan Milk Producers' Association and the Michigan Milk Commission from every part of the nation.

A Step Forward.

That the milk price in the Detroit Area is greatly increased over what it would have been had different methods been used, is conceded by all and yet this price does not keep pace with the increase in the cost of production. It is also evident that milk today furnishes the cheapest food nutrients of all animal food products. More than this, milk is most vital to the growth and development of the human body.

This brings up the question of the physical, mental and moral effect of the American people. We have before us not only the emergency of the world war, but the thought concerning the effort of our people which must be the inspiring and dominating influence. We must supply this food on terms that will meet the demands of commercial industries.

We had hoped for a bountiful harvest that would lower feed costs, so that the increase in the cost of labor would not make the balance entirely on the wrong side at the end of a year's production. But the frosts and present drought reminds us most forcefully that this is something we cannot expect this year. Feeds from \$50 to \$60 per ton, and the prospect of \$40 hay, causes us to question the sanity of reasoning when we think of our earnest desire to supply our peo-

ple with sufficient milk. More than this, we are admonished by the history of the past that milk production is not sufficiently stabilized so but that the market, in certain seasons of the year, is flushed with an over-supply, and at other seasons there is a dearth that tends to disquiet and unstabilize the market.

The first thing that should be done is to have a supply of this product that will meet the demands of the trade when a commensurate price can be obtained. We should also endeavor to avoid an over-supply at any season.

With present conditions it seems a part of wisdom to eliminate from our herds every unprofitable animal; every cow that will not turn a profit. If this was done it would lessen the cost of feeds and increase production. This in itself would be one of the greatest steps forward that the dairy industry has ever taken.

Method and Courage.

This requires both method and courage. Many farmers do not know which cows are not profitable, and lack the courage to go into the herd and take out every unprofitable animal. But this should be done within the next two months if present conditions only are to be considered. But what of the future?

We are doing much that should have been done years ago. The organized movement; the study of the food value of dairy products; the advertising campaign, the constructive effort, and the effort to eliminate the dishonest men within our own ranks—all these are steps in the right direction, and we wonder now why we did not begin our campaign many years ago. All of these agencies, though but a short time in use, are tending to stabilize the dairy industry and put it on a commercial basis.

One reason for last winter's serious congestion in milk products was the fact that the government could not furnish space for the transportation of the dairy products across the water, and we found ourselves with a great surplus on hand while our allies were actually starving for them. The government has contended that it required too much space in the shipping to transport dairy products across the water, and your association has been trying to impress upon the powers that be, the fact that more food could be gotten in a certain space in condensed products than in any other

foods. We have, at the present time, a splendid array of facts worked out under Professor Anderson's direction, and your association is now asking the manufacturing plants of Michigan, who have had heavy storage or surplus products ever since last winter—mounting at the present time to approximately thirty-seven million cases of condensed milk, to cooperate with us in an endeavor to get the release and shipment of condensed milk and cheese across the water. It is our plan to go before the Federal Food Board at Washington in the near future and lay this data, which has been so carefully compiled, before them. We shall be glad indeed if we may be the first in this as we have in so many other efforts for the betterment of the dairy industry. As soon as a realization of these facts is brought to the "powers that be" we believe there will be the greatest shipment of these products across the water that the world has ever known. This fact, with the fact that these are the cheapest food nutrients obtainable, ought to bring a marked change in price and conditions surrounding the dairy industry.

When the War is Over.

When the war is over we believe that the demand for dairy cattle of the United States will be the greatest that has ever been known. With less than one-half of the live stock of the warring nations in existence and with the things our boys are going to do when they get over on German soil, the man who has courage and patriotism to hold on to live stock—even at a present loss—will be the winner in the long run.

This I want to impress upon your minds with a greater emphasis than ever that no one not thoroughly conversant with conditions can appreciate the value of organized effort. We find it in every other industry; the government is urging it; the industry and good sense demand it, and any individual who makes an effort, either by his dishonesty or infidelity, to disrupt any agricultural movement, is a traitor to his government and to the best interests of humanity.

Price.

The price of milk, as fixed by the Detroit Area Milk Commission, is \$3.10 for the month of August and \$3.40 for the month of September. This is for 3.5 per cent milk in the so-called fifteen-cent zone, with four cents per point above or below.

A Five-Member Silo Ring

By J. L. JUSTICE

WITH the thousands of new silos being put up this year there will be formed many new silage rings or associations, for this has been found to be the best plan of handling the corn, and is about the only means of meeting the labor shortage. The plan of one association may not be the best for another, but most of them have merits which may be copied by others with good results.

When our ring was first formed it consisted of five members, and as there were few silos in the immediate neighborhood it was necessary to go nearly three miles to secure two of the members. This makes a pretty long jaunt for a team of horses both morning and evening, necessitating a very early morning start to work. But at the same time it was found more practicable to have these two extra men to carry on the work efficiently.

One ring I know of has nine members, another twelve, and some of the members complain that this is too

tons of corn an hour. It was thought advisable to get this large size cutter, which has proven a great advantage in pushing the work along at a rapid rate with the force at hand.

The plan of operation has worked out like this: There are to be four teams hauling in the corn where the distance is not greater than thirty or forty rods; this keeps the cutter going pretty steady. Usually the members grow their corn in a field near the silo to shorten the haul. If the distance is greater an extra team is used. The member who is filling uses his team on the corn binder to cut corn. He also hires any extra men needed in the field or in tramping the silage.

The association provides ten men to the ring, each member providing two men with one team. This gives an excellent working force with the boys on the farm. The boys usually prefer hauling in the corn, and as the corn is all bound a sixteen-year-old boy can handle it well. Low-wheeled wagons



Well Developed Heifers Make More Profitable Dairy Cows.

many. Every man wants to put up his silage as soon as the corn is in the right stage, which in a neighborhood does not extend over many days, especially if heavy frosts come during this time. It requires nearly a day to fill the smaller-sized silos and move to the next job, so that a man in a ten-member ring might have to wait at least ten days after his corn was ready to fill the silo; with Sundays, possible bad weather and breaking of machinery it might be twice that long. The best silage is made when the corn is just at the right stage.

In our five-member ring the silos can be filled in a period of one week, and we have all been able to get the corn in in prime shape. This plan makes a good division of labor. The first to fill one year is the last the next, although if one man wishes to fill earlier or later than others he may do so.

We own our own outfit of cutter and corn binder, so that it is unnecessary to wait on a custom outfit as some do. This has an added advantage: As each man owns an interest in the outfit he takes a vital interest in its operation and up-keep. It is also more economical than hiring an outfit, the first cost, repairs, interest and depreciation over a period of five years amounting to but \$20.35 a year for each man, and as the cutter will last for probably ten years the amount will be less than that.

Each member owns one-fifth share of the outfit and stands the same proportion of its operation and up-keep, except the hiring of an engine. Each one pays for the engine-time at his place. The outfit is never rented or hired out as these farmers are too busy to undertake it; it is for our exclusive use. The cutter has a six-inch throat, and driven by a twenty-horse tractor will cut from fifteen to twenty

with ladders that are the same height of the cutter table are used, which greatly facilitates the handling of the bundles.

HAIRY VETCH AS A HAY CROP.

Does hairy vetch sowed in August make hay the next June, or will it make hay at any time? I wish someone that has raised the hairy vetch would write an article in regard to vetch as a hay crop.

Hairy vetch sown in August on land in St. Joseph county that has never grown vetch will not make a crop of hay unless the soil is very fertile and well supplied with lime. To grow vetch satisfactorily on St. Joseph county soils, it will be necessary to sow two years in succession and probably apply some manure and, in many cases, lime also.

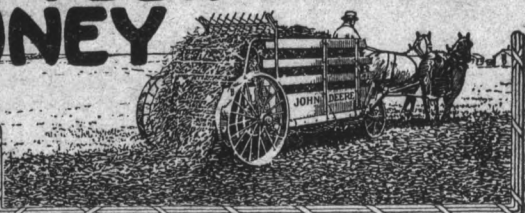
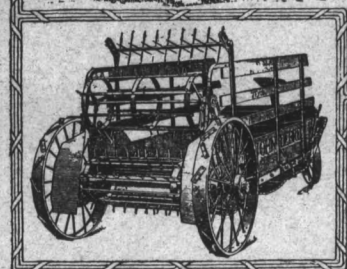
The use of sandy vetch has not proved to be profitable on the sandy loam plains of St. Joseph and Kalamazoo counties, although it can be grown. It is not, however, the agency which can be used to build up the soil in the locality mentioned, that it is in western Van Buren and Allegan counties and farther north.

NEWS NOTES.

The Cooperative Stock Shippers' Association at Portland, Ionia county, has made its first shipment, including three cars of hogs, calves and cattle, with satisfactory returns.

Farmers of Van Buren county met at Lawrence and formed a Shorthorn Breeders' Association, with the following officers: President, Frank Bailey, Hartford; secretary, George Rich, Lawrence. The breeders will hold their annual meeting on the fair grounds at Hartford, October 2.

CONVERT YOUR STRAW INTO MONEY



Straw, properly spread on winter crops, is protection that pays big returns. It protects against loss from winter-killing or soil-blowing. It makes a mulch that conserves moisture and promotes early spring growth. In every case it increases crop yields. Its plant food value is nearly equal to that of manure.

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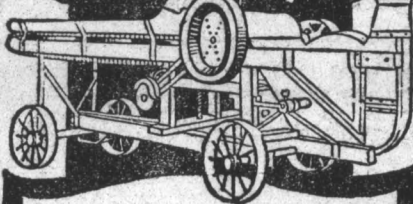
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Seeds Wanted

Red Rock Wheat
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Canada Thistle Seeds Grow

By BERTHA A. HOLLISTER, State Seed Analyst

THERE is a rather widespread impression in the state that Canada thistle seeds will not germinate. This impression is unfortunately upheld by some people of influence among farmers. In order to prove the matter to the satisfaction of everybody concerned, some Canada thistle seeds were placed in the germinator in the State Seed Laboratory this summer. These were given only ordinary care, and in less than a week showed a germination of six and two-thirds per cent. To be sure, that is only a small percentage, but when one realizes the great number of seeds that may be produced by one plant, the number is not at all negligible. The accompanying photograph shows Canada thistle seed sprouting. Within a day or two the cotyledone would have emerged



Sprouted Canada Thistle Seeds.

entirely from the seed coat, but at the time the photograph was made the seed coat was nearly intact, and showed all of the characteristics of the species.

Canada thistle plants are of two kinds, those producing staminate or male flowers, and those producing pistillate or female flowers. It often happens that a single seed dropped in a

field will grow into a plant producing staminate flowers. In that case, all of the plants resulting from the spread of that one plant by its underground stems would be male plants and would produce no true seeds. Again, a clump of thistles arising from another seed might all produce pistillate flowers, and if there were no staminate plants near, the flowers would not become pollinated, and the seeds would not reach their full development, although they might have the same appearance as the fertile seeds.

The flower heads of the two kinds of plants can be distinguished, as the staminate plants show a large purple head with a short down (or pappus), while the pistillate plants have a smaller, rather inconspicuous head while in flower, but a very long pappus after the flowers have withered. There is also a difference in the shape of the receptacles or cups of the flowers. The cup of the staminate head is globular in shape, while that of the pistillate head is longer and bell-shaped.

It is only when plants of both sexes are rather near each other that fertile seeds will be formed in the heads of the female (pistillate) plants. Even then it often happens that only part of the seeds in such a head will be plump and firm when pinched, the remainder being empty or shriveled. The male plants have small seed-like structures in their heads, but these, like the imperfect or unfertilized seed of the female plants, will not grow. It is because they are so much more abundant than the fertile seed that the belief has grown up that the seeds of this weed will not grow.

The danger of this fallacious idea is at once clear, if one stops to think. The result of such a belief would be a disregard of the presence of Canada thistle seed, in seed one bought or sold or planted, and an ultimate further distribution of this pestiferous weed.

Growing Rye on Muck

(Continued from first page).

is by far the best paying commercial fertilizer on muck. Commercial fertilizers containing nitrogen do not pay on muck when applied to grains. Acid phosphate used alone without manure will pay well, but the best combination in view of our present situation is about five spreadersful of manure to the acre, supplemented with two hundred and fifty pounds of acid phosphate. That, by the way, is what I would consider an ideal general fertilizer for extensive muck crops.

Increase the Amount of Seed Sown Per Acre.

Extensive experimentation, which has been conducted on the farm of Charles Severance, Allegan county, prove that one of the best ways to keep down the height of the straw and increase the grain yield is to crowd the seed. Three bushels to the acre is not too much if the soil has been properly fertilized. The fundamental idea behind the success of excessive amounts of seed lies in the fact that in a well drained soil with an abundance of water, thick planting will not cause the plants to suffer for lack of water, and will, when the root systems become sufficiently well developed, produce grain on a shorter stalk and earlier, assuming that the plant nutrients are present in sufficient quantity.

Sow Early.

Results have indicated that this is also the procedure to follow on high land, but it seems particularly important on muck. If the grain makes a heavy growth, it has the effect of being able to resist the excessive expan-

sion and contraction which soils of such a high organic content, as muck soil, are subject to. The early growth also has the effect of what is known as making the soil "alive," which means that it responds quickly and the seeding in the spring will take hold better. The seedlings which have been shown to be successful on muck are usually alsike clover and timothy. Sow in the spring crossways to the grain.

So little has been written about muck and the practices to follow in farming muck (which are so completely different from highland), that it is difficult to take up apparently simple matters without going into detail. We particularly solicit questions from muck farmers, and the names of muck farmers to place on our mailing list so that we can keep them informed concerning the developments of Michigan's greatest resource, her swamp lands.

REPORT ARMY WORM IN BERRIEN COUNTY.

The army worm, which four years ago overran Michigan farms in such numbers as to bring consternation to thousands of Michigan agriculturists, has reappeared in the vicinity of Niles, in Berrien county. Entomologists at M. A. C. are inclined to believe that there is little danger of the pest becoming serious this season. In the event that the worms should become numerous the college is asking farmers to inform their county agricultural agents, or to wire or write at once to the Department of Entomology at M. A. C., so that remedial measures can be adopted.

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Is a new variety that will pay you well to grow. Out-yields common Rye 10 to 20 bushels per acre. Nice long heads well filled with large kernels. Ordinary yield 30 to 40 bushels.

Clover, Timothy, Vetch, and all dependable seeds for fall planting.

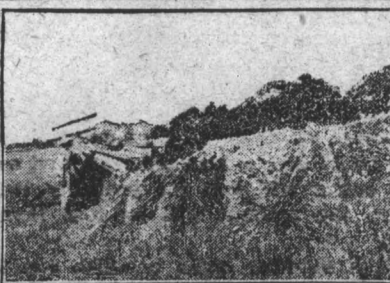
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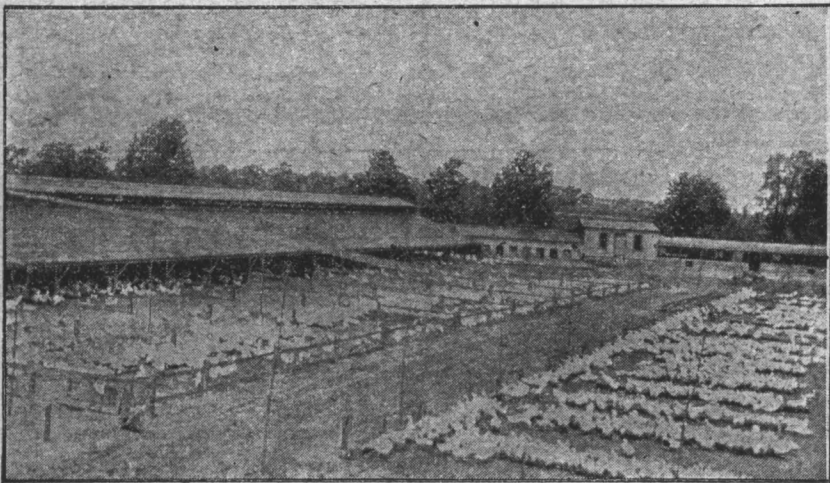
By C. B. FORD

Many farmers who have invested thousands of dollars in fine stock of house is built, seven and one-half barns and convenient feed lots have feet in front will be sufficient and it neglected to give the women folks a square deal by providing convenient houses and yards for the farm poultry. Too high a house will be Keeping poultry in misfit houses and cold and one too low will be extremely with few modern conveniences for annoying to those who work inside. Whether the house has concrete, wood making the work easy is likely to or natural ground floors it is always prove such a discouraging task that better to fill in the floors with several the hens will not be given the atten- inches of earth in order to make the tion which is necessary in order to inside surface higher than the outside have them give a good account of level and prevent dampness from ac- themselves. First of all, locate the cumulating underneath the building. houses within easy distance of the Dry feeding in hoppers has greatly kitchen door and not back of the barns simplified the feeding problem. There are many styles of hoppers on the mar- and feed lots where the women will ket, most of them so arranged that have to travel through mud and ma- they may be hung on the walls. Many nure and open and close several big of these hoppers will hold enough gates every time they go out to feed grain for a week or more. The nest the hens or gather the eggs. boxes may be made so that they may

The house should be high enough so that the attendant can stand upright when working in it, with a door wide enough so that the litter can be re- moved without difficulty, with windows that work easily and with nests, roosts and feed hoppers that can be removed, cleaned and disinfected with but very little effort. In no other way can the house be kept free from the lice and mites, well ventilated and sanitary.

Such a house need not be high enough in all parts to permit a person

to stand upright. If a shed roof type of house is built, seven and one-half feet in front will be sufficient and it may drop to five and one-half feet in the rear. Too high a house will be cold and one too low will be extremely annoying to those who work inside. Whether the house has concrete, wood or natural ground floors it is always better to fill in the floors with several inches of earth in order to make the inside surface higher than the outside level and prevent dampness from accumulating underneath the building. Dry feeding in hoppers has greatly simplified the feeding problem. There are many styles of hoppers on the market, most of them so arranged that they may be hung on the walls. Many of these hoppers will hold enough grain for a week or more. The nest boxes may be made so that they may be taken down and cleaned any time it is desired. An orange crate makes a good double nest for the small breeds. By providing convenient houses and yards in close proximity to the house and giving the women folks a willing hand for a few hours once a month much of the drudgery connected with caring for the poultry may be avoided and the increased income will more than pay the additional expense of providing these conveniences.



A Commercial Poultry Plant.

Crate Fattening Poultry

Practical experience has shown that crate fattening is not only the most satisfactory but the most economical method of finishing poultry for market. The saving in the amount of feed required to produce each pound of gain is a great object these days, and the feeder is enabled by this method to observe to better advantage the progress being made by the various fowls. He can fatten the fowls in shorter time, thus causing them to attain their maximum weight and having them ready for sale with less expense for labor and feed.

The fattening crate which we have had greatest success with is six feet long, twenty inches high, sixteen inches wide. It is divided into three equal parts by means of two tight wooden partitions. The material used in the frame is two inches wide by seven-eighths inch thick. The frame is covered with slats which run lengthwise on the top, back and bottom and vertical on the front and are made of material seven-eighths of an inch wide, and five-eighths thick.

The slats are placed two inches apart on the top and front, one and one-half on the back, and from one-half to three-fourths on the bottom. Care is taken to have the outer slats on the bottom at least half an inch from the frame in order to provide for cleaning. The top slats are cut through at each partition and connected by

two-inch strips, nailed underneath. By hinging these strips to the rear frame piece, three doors are made. A light V-shaped trough two and a half inches wide is placed in front of each crate, and is carried on two brackets nailed to the ends of the crate. The bottom of this is four inches above the bottom of the crate, and the upper inside edge two inches from the front of the crate.

In crate feeding the best results can be secured only from the use of strong, healthy, vigorous stock, of the general-purpose breeds, and the greatest gains are obtained on birds that weigh from three and a half to four and a half pounds when they are ready to be placed in the crates. They should have attained this weight in from four to five months. Leghorns, Hamburgs, and other light weight stock do not make suitable stock for the crate feeding method. All birds should be thoroughly dusted with insect powder, or common yellow sulphur before being placed in the crates, and again at the end of the first week.

The object in crate feeding is not only to increase the amount of fat and lean meat on the body, but also to soften the tissues and muscles that have been hardened through constant exercise on free range. The duration of the feeding period varies from fourteen to twenty-one days, depending entirely upon the thriftiness of the birds.

(Continued on page 136).

Save Coal Save Many Extra Shovels Full of Coal THIS WINTER

Save Coal! That is exactly what you will do if you install a Hummer Pipeless Furnace in your home, because the warm air from the furnace goes directly into the rooms that are to be heated—the heat goes where it is needed and where it will do you the most good. You get full benefit from all the fuel used.

And besides saving fuel, you also do away for all time with the disagreeable job of carrying coal into the best rooms of your house and taking the ashes out. You banish from the home forever the dirt, soot, ashes and gases which are always present when the old fashioned heating methods are employed.

Instead of work, worry, trouble and dirt, you may have a perfectly heated home, well ventilated rooms and real comfort even in severe weather.

And these comforts may be yours for such a small outlay of money, that you will not deny yourself the thing you have always wanted—a home in which all of the rooms may be enjoyed during the Winter months.

HUMMER PIPELESS FURNACE

\$56⁷⁰ AND UP

The Hummer Pipeless Furnace can be installed in your house—whether it is old or new—at less expense, less trouble and less muss than any other type of heating plant. Only a small space is required for installation. If you do not have a basement under your entire house, a hole can be dug large enough for the furnace which will enable you to have an effective heating plant in every way. The only tools needed for actual installation are a saw and a hammer. Many of the users installed their furnace in less than a day.

It is very simple in construction and operation. There is nothing complicated—nothing to get out of order with the Hummer Pipeless Furnace.

Send for circular 75M70 which explains these furnace in detail.



Sears Roebuck and Co.
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Corn Weather!

Your corn will send roots deeper, get more nourishment from the soil and produce more bushels to the acre if your land is drained with American Vitrified Salt-Glazed Tile.

Write for folder, "Add More Acres to your Farm," and name of dealer near you.

American Sewer Pipe Co. Michigan Branch, Jackson, Michigan.
Drain Tile, Building Blocks, Sewer Pipe, Vitrified Tile Silos

Unadilla Silos Ready to Ship!

You can be sure of your new silo before the corn harvest, if you order a Unadilla. The Unadilla factory is the largest in the East; centrally located to facilitate shipping; amply stocked with the best materials in Spruce, White Pine and Oregon Fir, to be rapidly made up into trustworthy Unadilla Silos of any size.

Before Prices Advance

again this season, and they certainly must be advanced before Fall, protect your milk and meat profits with a Unadilla Silo.

Corn Silage is the best defence against soaring grain prices.

Learn more about the wonderful Unadilla. Our big 1918 Catalog is free—but investigate at once.

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High or low wheels—steel or wood—wide or narrow tires. Wagon parts of all kinds. Wheels to fit any running gear. Catalog illustrated in colors free. Electric Wheel Co., 35 Elm St., Quincy, Ill.

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Kharkov, Red Rock, Harvest Queen and other high yielding varieties. Have Rosen Rye, Timothy, Alfalfa, Clover and all Field and Grass Seeds. Sold direct to you under our strong Money Back Guarantee. Buy your seed in Chicago where you get low prices and quick service. Write today for Free Bulletin and samples of the seed you need.
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Automobile Factories will turn into Munition Plants

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January 1st, 1919,

MR. AUTO OWNER:

To be protected you should repair, rebuild, and repaint your car and keep it insured against fire, theft, and liability.

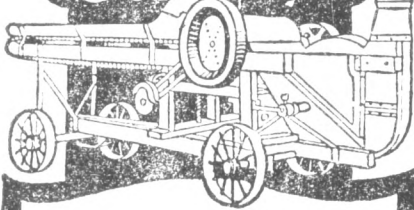
When the committee calls on you to purchase War Savings Stamps or Liberty Bonds or to contribute to the Red Cross, you should not make the excuse that you have had your car burned or stolen, or lost money through a lawsuit against you on account of an auto accident, when you can keep protected against these losses for a few dollars, and keep prepared to do your bit. Do not wait until you purchase a new car, but insure today in a company with a membership of over 35,000, and a surplus of about \$70,000, also a fire-proof building in which to keep your records, with up-to-date equipment with which to give you service.

This is no time to insure in a small company without surplus. Insure in a safe company that was organized and developed before the war.

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PERFECTLY cut silage prevents air pockets and the result is less spoilage. Purchase a Rowell Automatic Cutter and get perfect service. STRONG, EASY RUNNING, no danger, made in seven sizes. Investigate before you buy. Free Illustrated Catalog.

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Is Your Tire Pump Complete

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With a SCHRADER UNIVERSAL PUMP CONNECTION

attached to your tire pump, you are saved the labor of pumping your tires up beyond the required pressure. It permits the measuring of the inflation without disconnecting the pump and the tire.

A. SCHRADER'S SON, INC.
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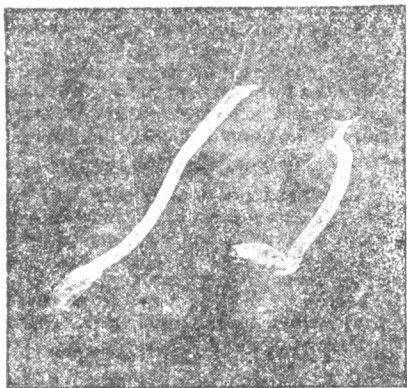
Seeds Wanted

Red Rock Wheat
Sand or Winter Vetch
Red Clover Seed (Both kinds)
Edw. E. Evans, West Branch, Mich.

Canada Thistle Seeds Grow

By BERTHA A. HOLLISTER, State Seed Analyst

THERE is a rather widespread impression in the state that Canada thistle seeds will not germinate. This impression is unfortunately upheld by some people of influence among farmers. In order to prove the matter to the satisfaction of everybody concerned, some Canada thistle seeds were placed in the germinator in the State Seed Laboratory this summer. These were given only ordinary care, and in less than a week showed a germination of six and two-thirds per cent. To be sure, that is only a small percentage, but when one realizes the great number of seeds that may be produced by one plant, the number is not at all negligible. The accompanying photograph shows Canada thistle seed sprouting. Within a day or two the cotyledone would have emerged



Sprouted Canada Thistle Seeds.

entirely from the seed coat, but at the time the photograph was made the seed coat was nearly intact, and showed all of the characteristics of the species.

Canada thistle plants are of two kinds, those producing staminate or male flowers, and those producing pistillate or female flowers. It often happens that a single seed dropped in a

field will grow into a plant producing staminate flowers. In that case, all of the plants resulting from the spread of that one plant by its underground stems would be male plants and would produce no true seeds. Again, a clump of thistles arising from another seed might all produce pistillate flowers, and if there were no staminate plants near, the flowers would not become pollinated, and the seeds would not reach their full development, although they might have the same appearance as the fertile seeds.

The flower heads of the two kinds of plants can be distinguished, as the staminate plants show a large purple head with a short down (or pappus), while the pistillate plants have a smaller, rather inconspicuous head while in flower, but a very long pappus after the flowers have withered. There is also a difference in the shape of the receptacles or cups of the flowers. The cup of the staminate head is globular in shape, while that of the pistillate head is longer and bell-shaped.

It is only when plants of both sexes are rather near each other that fertile seeds will be formed in the heads of the female (pistillate) plants. Even then it often happens that only part of the seeds in such a head will be plump and firm when pinched, the remainder being empty or shriveled. The male plants have small seed-like structures in their heads, but these, like the imperfect or unfertilized seed of the female plants, will not grow. It is because they are so much more abundant than the fertile seed that the belief has grown up that the seeds of this weed will not grow.

The danger of this fallacious idea is at once clear, if one stops to think. The result of such a belief would be a disregard of the presence of Canada thistle seed, in seed one bought or sold or planted, and an ultimate further distribution of this pestiferous weed.

Growing Rye on Muck

(Continued from first page).

is by far the best paying commercial fertilizer on muck. Commercial fertilizers containing nitrogen do not pay on muck when applied to grains. Acid phosphate used alone without manure will pay well, but the best combination in view of our present situation is about five spreadersful of manure to the acre, supplemented with two hundred and fifty pounds of acid phosphate. That, by the way, is what I would consider an ideal general fertilizer for extensive muck crops.

Increase the Amount of Seed Sown Per Acre.

Extensive experimentation, which has been conducted on the farm of Charles Severance, Allegan county, prove that one of the best ways to keep down the height of the straw and increase the grain yield is to crowd the seed. Three bushels to the acre is not too much if the soil has been properly fertilized. The fundamental idea behind the success of excessive amounts of seed lies in the fact that in a well drained soil with an abundance of water, thick planting will not cause the plants to suffer for lack of water, and will, when the root systems become sufficiently well developed, produce grain on a shorter stalk and earlier, assuming that the plant nutrients are present in sufficient quantity.

Sow Early.

Results have indicated that this is also the procedure to follow on high land, but it seems particularly important on muck. If the grain makes a heavy growth, it has the effect of being able to resist the excessive expan-

sion and contraction which soils of such a high organic content, as muck soil, are subject to. The early growth also has the effect of what is known as making the soil "alive," which means that it responds quickly and the seeding in the spring will take hold better. The seedlings which have been shown to be successful on muck are usually alsike clover and timothy. Sow in the spring crossways to the grain.

So little has been written about muck and the practices to follow in farming muck (which are so completely different from highland), that it is difficult to take up apparently simple matters without going into detail. We particularly solicit questions from muck farmers, and the names of muck farmers to place on our mailing list so that we can keep them informed concerning the developments of Michigan's greatest resource, her swamp lands.

REPORT ARMY WORM IN BERRIEN COUNTY.

The army worm, which four years ago overran Michigan farms in such numbers as to bring consternation to thousands of Michigan agriculturists, has reappeared in the vicinity of Niles, in Berrien county. Entomologists at M. A. C. are inclined to believe that there is little danger of the pest becoming serious this season. In the event that the worms should become numerous the college is asking farmers to inform their county agricultural agents, or to wire or write at once to the Department of Entomology at M. A. C., so that remedial measures can be adopted.

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Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

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Over
the Top

into any Silo is the guarantee that goes with every Papec—large or small. You, doubtless, will not need to take advantage of the full elevating power of the Papec, but you have the satisfaction of knowing it's there—in reserve.

There are four sizes of Papecs. A gas engine, 3 or 4 H. P., will operate the smallest size. Our 1918 catalogue explains how a Papec will pay for itself in one season. Write for your copy today—it's free.

Papec filling 108 foot Silo at Salona, Pa.

PAPEC MACHINE CO.
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The Hardest and Heaviest Yielding
Winter Wheat

For Michigan and the northern states. Has yielded 37 bushels average per acre at the Michigan Experimental Station. Record yield of nearly fifty bushels per acre.

Rosen Rye

Is a new variety that will pay you well to grow. Out-yields common Rye 10 to 20 bushels per acre. Nice long heads well filled with large kernels. Ordinary yield 30 to 40 bushels. Clover, Timothy, Vetch, and all dependable seeds for fall planting. Write for free samples and fair price list.

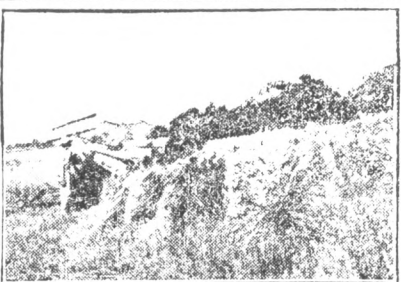
Fall Bulbs

Beautiful new Darwin Tulips, Hyacinths, Narcissus, Lilies, Crocus, etc. Plant these bulbs this fall for winter and spring blooming. Isbell's Fall Catalog Free gives full information. Write for it today.

S. M. ISBELL & CO.

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F. C. Hambleton, President Howard Irish, Secretary
Coopersville Crop Improvement Association
Coopersville, Michigan
Growers of Michigan Pedigreed Grains
RED ROCK WHEAT ROSEN RYE
WINTER BARLEY

We are in the market for Seed Wheat.
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Farmers Elev. & Pro. Company, Bad Axe, Mich.

DOGS
Scotch Collie Pups For Sale. Pure bred stock, prices reasonable.
O. E. Hawley, Rt. 3, Ludington, Mich.

A Square Deal for Women

By C. B. FORD

Many farmers who have invested thousands of dollars in fine stock barns and convenient feed lots have neglected to give the women folks a square deal by providing convenient houses and yards for the farm poultry. Keeping poultry in misfit houses and with few modern conveniences for making the work easy is likely to prove such a discouraging task that the hens will not be given the attention which is necessary in order to have them give a good account of themselves. First of all, locate the houses within easy distance of the kitchen door and not back of the barns and feed lots where the women will have to travel through mud and manure and open and close several big gates every time they go out to feed the hens or gather the eggs.

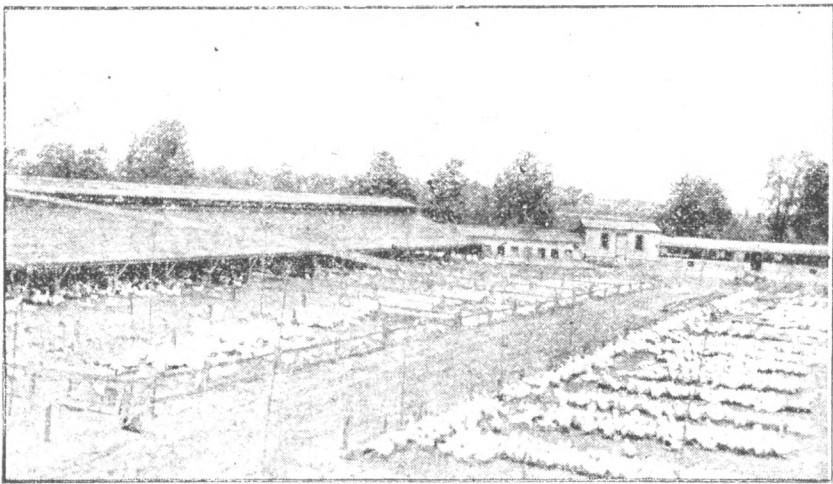
The house should be high enough so that the attendant can stand upright when working in it, with a door wide enough so that the litter can be removed without difficulty, with windows that work easily and with nests, roosts and feed hoppers that can be removed, cleaned and disinfected with but very little effort. In no other way can the house be kept free from the lice and mites, well ventilated and sanitary.

Such a house need not be high enough in all parts to permit a person

to stand upright. If a shed roof type of house is built, seven and one-half feet in front will be sufficient and it may drop to five and one-half feet in the rear. Too high a house will be cold and one too low will be extremely annoying to those who work inside. Whether the house has concrete, wood or natural ground floors it is always better to fill in the floors with several inches of earth in order to make the inside surface higher than the outside level and prevent dampness from accumulating underneath the building.

Dry feeding in hoppers has greatly simplified the feeding problem. There are many styles of hoppers on the market, most of them so arranged that they may be hung on the walls. Many of these hoppers will hold enough grain for a week or more. The nest boxes may be made so that they may be taken down and cleaned any time it is desired. An orange crate makes a good double nest for the small breeds.

By providing convenient houses and yards in close proximity to the house and giving the women folks a willing hand for a few hours once a month much of the drudgery connected with caring for the poultry may be avoided and the increased income will more than pay the additional expense of providing these conveniences.



A Commercial Poultry Plant.

Crate Fattening Poultry

Practical experience has shown that crate fattening is not only the most satisfactory but the most economical method of finishing poultry for market. The saving in the amount of feed required to produce each pound of gain is a great object these days, and the feeder is enabled by this method to observe to better advantage the progress being made by the various fowls. He can fatten the fowls in shorter time, thus causing them to attain their maximum weight and having them ready for sale with less expense for labor and feed.

The fattening crate which we have had greatest success with is six feet long, twenty inches high, sixteen inches wide. It is divided into three equal parts by means of two tight wooden partitions. The material used in the frame is two inches wide by seven-eighths inch thick. The frame is covered with slats which run lengthwise on the top, back and bottom and vertical on the front and are made of material seven-eighths of an inch wide, and five-eighths thick.

The slats are placed two inches apart on the top and front, one and one-half on the back, and from one-half to three-fourths on the bottom. Care is taken to have the outer slats on the bottom at least half an inch from the frame in order to provide for cleaning. The top slats are cut through at each partition and connected by

two-inch strips, nailed underneath. By hinging these strips to the rear frame piece, three doors are made. A light V-shaped trough two and a half inches wide is placed in front of each crate, and is carried on two brackets nailed to the ends of the crate. The bottom of this is four inches above the bottom of the crate, and the upper inside edge two inches from the front of the crate.

In crate feeding the best results can be secured only from the use of strong, healthy, vigorous stock, of the general-purpose breeds, and the greatest gains are obtained on birds that weigh from three and a half to four and a half pounds when they are ready to be placed in the crates. They should have attained this weight in from four to five months. Leghorns, Hamburgs, and other light weight stock do not make suitable stock for the crate feeding method. All birds should be thoroughly dusted with insect powder, or common yellow sulphur before being placed in the crates, and again at the end of the first week.

The object in crate feeding is not only to increase the amount of fat and lean meat on the body, but also to soften the tissues and muscles that have been hardened through constant exercise on free range. The duration of the feeding period varies from fourteen to twenty-one days, depending entirely upon the thriftiness of the birds.

(Continued on page 136).

Save Coal Save Many Extra Shovels Full of Coal THIS WINTER

Save Coal! That is exactly what you will do if you install a Hummer Pipeless Furnace in your home, because the warm air from the furnace goes directly into the rooms that are to be heated—the heat goes where it is needed and where it will do you the most good. You get full benefit from all the fuel used.

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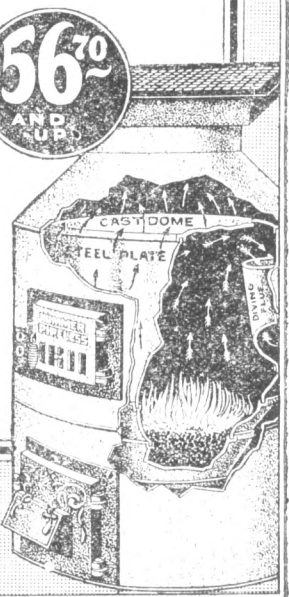
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Sears, Roebuck and Co.
Chicago



Corn Weather!

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Write for folder, "Add More Acres to your Farm," and name of dealer near you.

American Sewer Pipe Co. Michigan Branch, Jackson, Michigan.
Drain Tile, Building Blocks, Sewer Pipe, Vitrified Tile Silos

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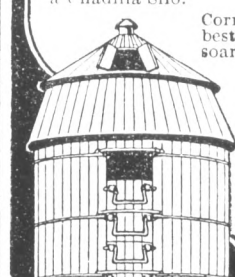
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Learn more about the wonderful Unadilla. Our big 1918 Catalog is free—but invests at once.

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The Michigan Farmer,
Detroit, Michigan

Some birds, given judicious feeding and good care continue to make satisfactory gains for even longer periods than three weeks.

Birds placed in the crates with crops full should not be fed for the first twelve or eighteen hours in order that they may become more quickly accustomed to the change in diet. Many feeders practice giving three light feeds per day for the first three days, then two feeds a day for the remainder of the fattening period. The birds should not be given more feed at one time than they will eat up clean in twenty minutes. After this the troughs should be taken away or turned upside down in the supports, so that nothing is left to be picked at between meals.

The following five meal mixtures, in the order of their merit, have been found satisfactory for crate feeding. It should be remembered that ground corn fed in excess will produce yellow flesh of inferior quality, and that ground peas impart a hardness of flesh: 1. Two parts of finely ground

oats, one part ground buckwheat, one part cornmeal. 2. Equal parts finely ground oats, buckwheat and barley. 3. Equal parts finely ground oats, barley and shorts. 4. Two parts finely ground oats, one part of cornmeal, one part shorts. 5. Two parts barley, two parts low-grade flour or shorts, one part of wheat bran. The husks should be sifted from the oats, barley or buckwheat.

These proportions should be measured by weight and mixed to a thin porridge with thick sour milk, or buttermilk. On the average ten pounds of meal requires from fifteen to seventeen pounds of milk. If the fowls appear constipated at any time, carefully mix and dissolve a small quantity of epsom salts in one feed, add a little charcoal to one feed. Give grit and green food twice a week. All food should be mixed twelve hours before feeding and a very small quantity of fine table salt added, not more than one-quarter of one per cent. Before being killed the fowls should be starved for twenty-four hours, water only being given. E. W. GAGE.

Drainage Questions Answered

The following reply to the drainage problems presented by Mr. Gilbert in the last issue of the Michigan Farmer, has been prepared by Professor O. E. Robey, Drainage Specialist at M. A. C.

MR. GILBERT'S drainage problem is exactly similar to thousands of other farmer's in the state. It just happens that I have been on Mr. Gilbert's farm and know what he is up against. However, he sees the necessity of drainage and has set out in a very practical way to bring it about by putting in tile.

One of the most serious agricultural handicaps in Michigan today is an aggregation of a great number of similar drainage problems to Mr. Gilbert's. The drainage problem which is affecting crop production today is not so much the draining of vast areas of unimproved swamp or low-lying land, but the draining of holes and water soaked soil on land where we are actually trying to raise crops.

Upon this type of land we very often expend our valuable time, seed and fertilizer with the expectation of a crop, but due to an unfavorable season we may get only partial or no returns. A wet acre or two in a field, or a field which is partially waterlogged so as to cut down production may seemingly represent a small loss, but very often just these small amounts are necessary to put an attractive balance on the right side of the ledger. Take the fourteen-acre field mentioned above, the three and a half acres of partially productive land represents twenty-five per cent of the total area and probably now it is drained is worth nearly double that amount somewhere else in the field.

It would be better to put in a tile drain along the road to connect up the two drains. As to the township's share of this expense this would depend upon whether the tile drain would be of more benefit to the road than an ordinary gutter. If it would the tile drain would represent a permanent improvement which should receive some consideration from the township.

It would be hard to estimate the cost of such a ditch without knowing full particulars. If horses can be used, the ground is not too hard and the right of way does not have to be cleared the cost would run around four dollars per rod.

There is no provision in our Michigan laws governing the flow of water from one farm to another. Such cases are decided upon common law. Each case must be decided upon its own merits. In brief, the result of these decisions are as follows:

1. Owners of high land have the right to discharge water on or across the

neighboring lowlands through natural water courses or depressions.

2. Streams of this kind cannot be damned to the injury of others or the water utilized for other than domestic purposes. The water must be passed on to the neighbor below.

3. Natural water (water unconfined) may run from high land to low land without creating a liability for damages. It may also be prevented from flowing onto the low land by the owner of the low land by erecting dykes, etc.

4. Natural water, if collected and discharged onto a neighbor's land in an unusual manner might be grounds for a damage suit.

PROTEIN SUBSTITUTES.

Recent experiments conducted at some of the leading stations indicate that other feeds may be used successfully to take the place of dried beef scraps in poultry rations. At present prices for beef scraps the use of the cheaper forms of protein will effect a big saving on many poultry farms. Cottonseed meal, soy bean meal and pea nut meal, fed in combination with the beef scraps, have produced fairly satisfactory results. Such feeds as cut alfalfa and clover hay, steamed and fed in a wet mash will effect a still further saving of protein concentrates in the ration, and may be used to good advantage during the season when green feeds are scarce. Sprouted oats are very beneficial to the health of the fowls and enable them to make more efficient use of the protein concentrates in the ration. Waste fruits and vegetables promote the health of the fowls and reduce the cost of higher-priced feeds. The feeding of these succulent feeds, however, must be tempered with judgment, for there is always danger of digestive ailments if too large a portion of the ration consists of green foods. This trouble is sure to develop more frequently during cold weather, when the birds exercise less freely, than is the case during the spring, summer and fall months.

Kent Co.

C. B. FORD.

(Since this reply came to hand we have received from Mr. Gilbert a letter stating that his township officials had kindly allowed a bill for the tile required along the highway.—Eds.)

Imitation is no crime, provided you imitate the best farmer in your community.



For Better Grain Crops

DRILL planting saves seed, gives the crop a better start, increases yields, and produces grain of better quality than any other known method of planting. These are the years when every acre of small grain must produce every possible bushel and these are the drills to plant with.

If you are growing small grain, and are not using an Empire Jr., Hoosier, or Kentucky drill for planting, you are losing money and the world is losing grain. Buy the right drill from your local dealer who has in stock, or can get for you, the drill best suited to your soil and crops.

The dealer will show you all about feeds, furrow openers, bearings, attachments, the regulation of quantities, and all the other things you will want to know. Talk this over with him or write to us, and we will send you complete information about the Empire Jr., Hoosier, or Kentucky drill that is best for you to buy.

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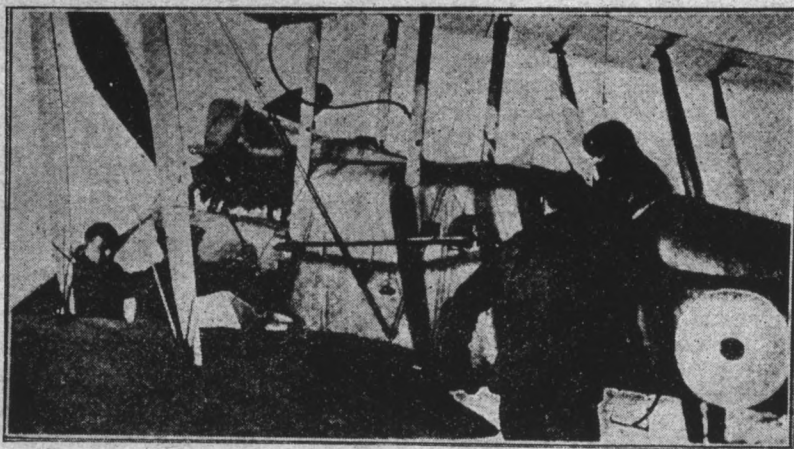
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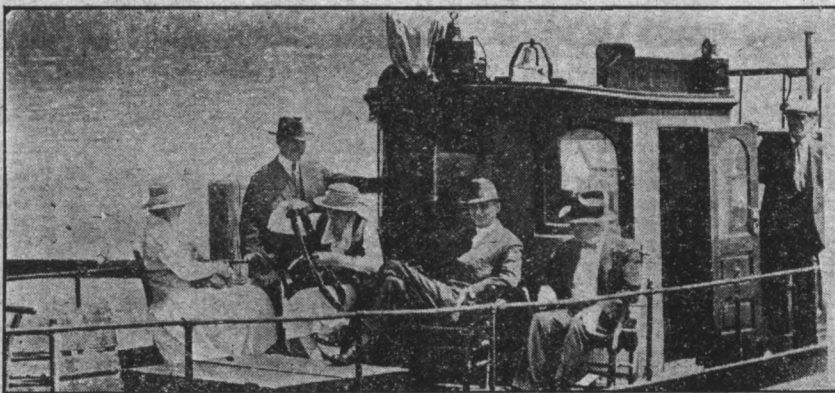
Rabbi Wise Works as a Laborer to Help Win the War.



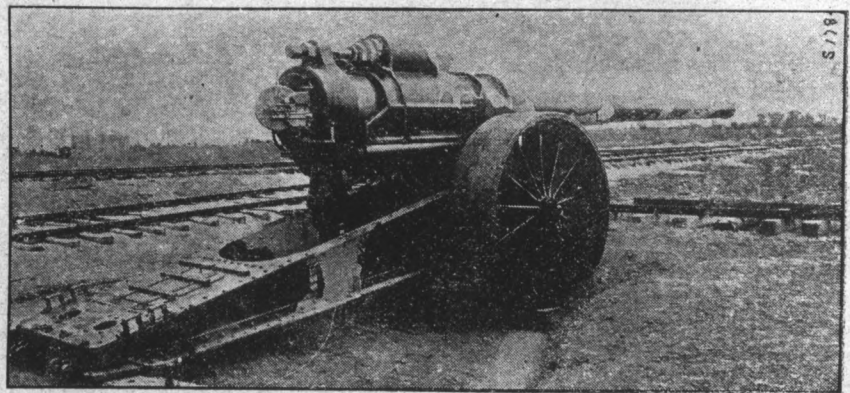
The Above Picture Shows Lieut. E. M. Roberts Preparing for a Flight Over the Hun Lines on the Western Front. Lieut. Roberts is the Author of "A Flying Fighter," Our Serial Story which Has Been Running Since Early in May.



Dora Thompson, Head of the Army Nurse Corps, Going Abroad.



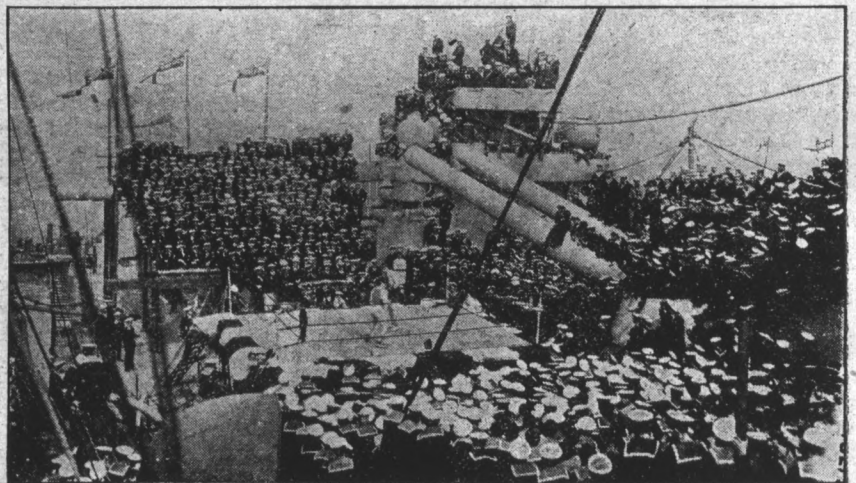
William McAdoo Enjoys a Boat Ride and Gets a Moment's Rest.



Trained to Speak a Language that the Kaiser Does Not Care to Understand.



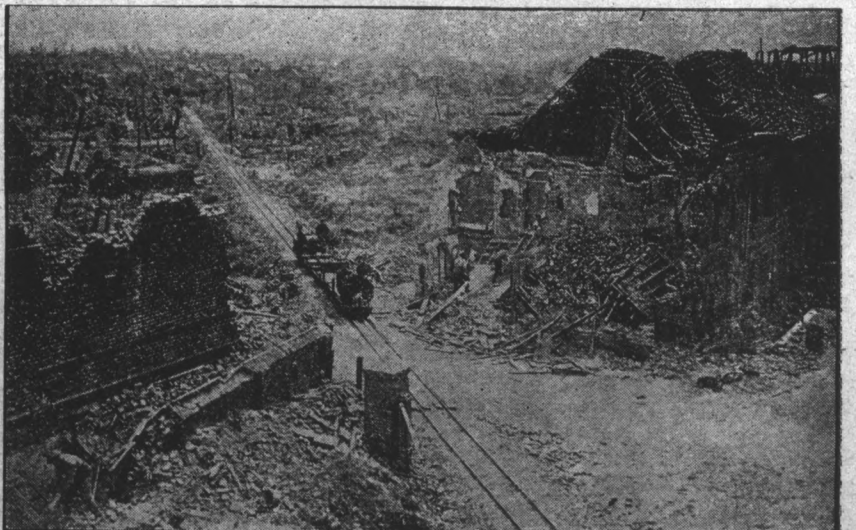
They Loan their Steel Helmets to the Kiddies and Carry them out of Danger.



Sport Aboard a British Battleship. This How the Jackies Keep Fit.



Where the Fighting Men in France Find Recreation—a Beach Scene Along the Coast.



The Huns' Destruction and the Allies Construction, a Canadian Tramway, through a Ruined Village in France.



But Copper, as the Irishman was known on account of the color of his hair, could not be found. I was wondering what had happened to Copper when an orderly rushed into my room of a sudden and said that somebody wanted to speak on the telephone to the instructor who had gone after Copper. I went to answer the telephone.

"Hello, who's this?" I shouted into the receiver.

"This is the commander of destroyer so and so," came the reply.

"I want to inform you," he went on, "that I picked up a man out at sea flying machine No. 2464-A. I found him ten miles out. He says he is known in the camp as Copper."

"Is he hurt?" I asked.

"No, he's thawing out down in the engine room. You had better send transportation for him and his machine. Good-bye."

Meanwhile Copper's instructor had come down and I told him what had happened. We had to send transportation to Copper, and when the commander of the destroyer was finally relieved of his unexpected company he found he missed Copper's Irish wit very much.

On the following day Copper turned up. His instructor gave him a rather warm reception.

"What in the name of blazes were you trying out at sea, anyway?" he asked.

"Well," said Copper, "once I got up I forgot what you told me, and when I tried to turn the darn thing I landed in the sea."

"What did you go out to sea for?"

"Well," remarked Copper, "I thought that in case I did come down it would be a softer place to land, and the only mistake I made was that I went out too far before trying to turn."

The Scotchman, in trying to have a look at his native land while up in the air, had his first landing in the Scotch hills owing to engine failure. He called us up on the telephone and I was sent out to get his machine. I took a lorry, knowing the funny things these Huns of ours hit, having been one myself, and when I got up to that machine it was just hanging between two trees which kept it from falling over a cliff.

Two hundred feet below that cliff was a waste of rocks, and yet the Scotchman had the nerve to tell the commanding officer that he had made a good landing. It was a good landing, all right. I had to dismantle the bus and carry it home on the lorry.

Oh, we had some merry times in that squadron. One of the instructors used to go out over the town every morning and loop over a monument in the main street. It never occurred to him that this might give the townspeople heart failure; however, he had to have his fun.

Before getting off on this particular morning, the machine of the instructor while taxiing across the ground, had picked up considerable mud and grass with its tail skid. The mud stayed there all right and while the instructor was making his customary loop it fell off, crashed through the skylight of a large store and caused much consternation. The funny part of it was that the owner of the store thought the flyer had done it on purpose. He made a report to the government and we received an order not to fly over that town unless it was absolutely necessary.

Our friend Copper did honor to his name one day by coming in over the sheds too low and putting his tail skid

through one of our skylights. In doing that he broke the glass of the skylights and it fell on two buses and cut them up considerably. Not satisfied with that, Copper took away the flagpole, carried off the flag, and smashed his prop doing it. Then he landed, calmly got out of the bus, picked up the flag and flagpole, and walked up to an orderly whom he ordered to put the things back in place.

Scottie was flying along the railroad one day, chasing the Scotch Express, which was traveling at the rate of sixty miles an hour. He was trying to put the wind up the back of the engineer by swooping over the engine. That was all right, but the trouble was that Scottie forgot there were telegraph wires on the other side of the track. He slam-banged into them and wrecked this line of communication for three days. As a result of this fine exploit more drastic orders about low flying were issued.

After that we went further away from the 'drome when we wanted to do stunts. Not far from the aerodrome were a number of shooting estates. We would picket men with shotguns on the edge of the 'drome and one of us would fly over the ground and woods to scare up game, which consisted for the greater part of pheasants, partridges and hares. The snipers would do the rest. It was good fun until Robinson, a young pilot, had engine trouble and landed in the middle of a little wood on the estate. We had to cut a road through the trees to get the machine out. It cost the government real money to get that machine back.

After that the men higher up put their foot down and stopped our little hunt. But being full of spirit the boys had a lot of fun anyway crashing around in the atmosphere. Some of them used to leave camp with the statement that they were going to tea somewhere, and then we would not see them for two days. Ham and I went up quite a number of times to see a friend of ours, who was running a little government saw-mill in the hills. That boy had the finest and most expert taste for good Scotch ever given any man. At first we visited him occasionally only, then we called upon him once a day, and later we saw him twice a day. The reason for our trips into the hills we kept secret for a long while, until we met our friend in town one night. We were careless enough to introduce him to some of the boys and in the course of the conversation they learned why we were so fond of the government saw-mill.

Before long it was difficult to find an airplane in the aerodrome. In fact, we were seriously considering transferring the establishment to the saw-mill. Then the commanding officer was permitted to share our secret and another diversion of ours had to be abandoned.

One by one the little stunts that used to make life on the training aerodrome so very interesting were lopped off. A general order came forbidding any pilot to do stunts at elevations of less than two thousand feet. But we made up for that in other ways.

It was on a Sunday afternoon when I was called to the orderly room of the commanding officer's office. I was told that I was to leave next morning by the 11:30 train for Glasgow, Scotland, whence I would proceed to a little town just outside and receive a machine of the type known as BE2E. I was to fly that machine to a point in the south of England and was to take with me on my trip a chap named At-

wood, known in the aerodrome by everybody as "At."

We caught the train, changed at Edinburgh, and found that we had some time to spare before we could get the train for Glasgow. The two of us decided that we would have a look at the town, and we did so. We found the place quite interesting and were walking down Princess street when of a sudden we heard a roar, and, looking up, we beheld an aeroplane known as a Rumpy type, flying at about fifty feet above the ground. It was flying over the street, but I don't know yet what the couple of British Huns in it were trying to do. The machine in question is large and slow and flies steadily enough. At one end of the street there is a square and in that square stands a monument. The Rumpy "zoomed" over it and missed its top by a few inches. Then it went on. We learned afterwards that the machine had landed somewhere further down the street. Cold shivers ran down my back while I was looking at the foolhardy stunts of the men in the machine, but the people looking on were impressed only by the daring of these bold British birdmen.

Arriving at Glasgow that night we called up the aerodrome and let the commanding officer know that we had arrived. Next morning an automobile called for us and we were taken to the

aerodrome, which lies near the factory where these machines are made.

"At" and I got into the machine we were to take south, though neither of us liked the looks of the weather. A storm was coming up, but rather than lose time we decided to go over the tops of the clouds.

Before we had gotten beyond the clouds we were up ten thousand feet and it certainly was cold up there. After that we headed for the hills in the south and we had to go up a little more in order to have enough gliding room in case something should happen to the machine. I have always found it the best policy to fly as high as possible when using a machine whose knacks and tricks I am not familiar with. The prospect of landing in those snow-covered hills did not appeal to us.

I froze a toe and part of my nose, but aside from that nothing happened. The machine was safely delivered at our aerodrome. We had lunch and got thawed out, and then started up again to take the buses on to their destination. We had gone quite a way south when more trouble came. We ran into a fog. Ground fogs are the worst enemy of the aviator. In addition to blotting out the marks by which he steers, they also make it impossible for him to find suitable landing places in case of necessity. No pilot likes to

(Continued on page 141).



Wednesday, August 7.

Conditions on the battle front along the Vesle river between Soissons and Rheims remain unchanged and there have been no developments of importance on the line running from the region of Montdidier and the English channel. In both regions, however, there is a tenseness which seems to forecast a big battle.

Casualties in the army and navy made known today aggregated 963. Killed in action 112, twenty-two dead from wounds, and 781 are injured.

Mercury reaches point of 116 above zero in Detroit.

Two men were stranded on a scow near the brink of Niagara Falls. They were rescued early this morning.

General Foch has been elevated to the rank of Marshal of France.

Thursday, August 8.

On five different sectors the Allies made important gains today. At two points in the battle front between Soissons and Rheims important headway was made. Other advances were made further north. Haig's men gain about a mile on a five-mile front in Flanders.

The heat wave was apparently broken last night. Wednesday's high temperature was 110 in Detroit.

Miss Alice Wilson, the President's niece, was married August 7 to Rev. Dr. Isaac McElroy.

The United States is to seize all coal above the country's needs. All excess steel manufactured will also be appropriated by the government.

Friday, August 9.

Haig's army opens an offensive on a twenty-mile front after a short artillery preparation and sweeps forward for ten miles into the foe lines east of Amiens. Every goal is won and the Allies smash on with the enemy in flight. One hundred guns and over 7,000 prisoners have been taken. The victory will destroy the Kaiser's "Paris front." The Montdidier and Aisne sectors are also threatened.

Finland asks United States aid to relieve famine. The appeal is sent by Norway, Sweden and Denmark.

Crowder gives orders for 130,207 draft registrants to entrain for camp; 5,257 of these will come from Michigan.

Tax body cuts levy on autos, rating same according to horse power. Tobacco tax is to be doubled.

Canada may call all previously exempt men.

Saturday, August 10.

Foch's counter offensive has passed beyond the frame of a local blow and now the whole western German battle line is threatened with collapse. Aero observers report streams of transports and men fleeing east. Many towns and

between two and three hundred guns have been captured. In fact, the Germans are yielding on every vital line from Ypres to the Marne.

The United States Industrial Board rules that auto plants must be converted by January 1 into 100 per cent war works.

Rules are liberal under new draft. Marriage is to be grounds for deferred calling.

Sunday, August 10.

The eighty-fifth division, which was organized of Michigan, Wisconsin and Illinois selects and trained at Camp Custer, has arrived safely overseas. This division was organized at Camp Custer last fall and trained there until it left for the seaboard in July.

Senator James Hamilton Lewis, of Illinois, democratic whip, has gone to France on an important secret mission for the government. He left hurriedly after a long conference with the President and barely had time to catch the steamship upon which he was to sail. It is the general opinion of officials that Senator Lewis' mission has to do with the informal discussion with the ministers of the French, English and Italian governments of their attitude towards peace offers or proposals from any one or all of the Central powers.

Monday, August 12.

Several fishing schooners were reported sunk off the coast of Massachusetts by a German U-boat.

A delegation of Michigan manufacturers, headed by J. J. Crowley, of the Detroit Board of Commerce, and State Fuel Administrator Prudden, left Sunday for Washington where they will appeal to the chairman of the war industries board for more anthracite coal to heat the homes of Detroit.

Tuesday, August 13.

Announcement is made that the employees of the Western Union Telegraph Company have been granted an increase of wages. The advance is subject to the approval of Postmaster-General Burleson, now in charge of telegraph and telephone lines under proclamation of the President.

Anna Held, the noted French actress succumbs to pneumonia in her apartments at the Hotel Savoy, New York City.

All along the battle lines in France the Germans are fighting hard to organize a defence that will enable them to hold their lines until they have time to reorganize their badly battered forces.

Gas from oil, discharged on the water by the German submarine operating off the Atlantic Coast, overcame six men in the coast guard station and lighthouse on Smith's Island, N. C., Saturday evening.

"By the Way"

PASS THE HAT.

A couple of Chinese were induced by a mission worker to attend Sunday school. The teacher passed a collection box.

For several Sundays the Chinamen contributed their nickels. At last one of them looked up when the box again came his way and asked: "What-a matter? God bloke allee time?"—The Country Gentleman.

NO SENSE IN IT.

"Does your husband worry about the grocery bill?"

"No, he says there's no sense in both himself and the grocer worrying over the same bills."

An egotist is a man who insists on telling you things about himself that you want to tell about yourself.

A weary rookie marched mile after mile on a training hike and his toe kept getting sorer and sorer. Finally he took off his shoe and the sock that some woman had knitted for him and found that the source of irritation was a small bit of crumpled up paper. On it was some writing, and the rookie read this, "God bless your poor tired feet."

Polly—What's Freddie crying for?

Dolly—Because he dug a hole in the garden and mother wouldn't let him bring it into the house.

Mrs. Quackness—"Am yo' daughter happily mar'd, Sistah Sagg?"

Mrs. Saggs—"She shuah am? Bless goodness, she done got a husband dat's skeered to death of her."

SOME SHOT.

Captain—"Do you see that captain on the bridge five miles away?"

Tar—"Aye, aye, sir."

"Let him have one of these twelve-inch shells in the eye."

"Which eye, sir?"

SOMETHING HE ALMOST MISSED.

An editor in the far west dropped in to church for the first time for many years. The minister was in the very heart of the sermon. The editor listened for awhile and then rushed to his office.

"What are you fellows doing? How about the news from the seat of war?"

"What news?"

"Why, all this about the Egyptian army being drowned in the Red Sea. The minister up at the church knows all about it, and you have not a word of it in our latest. Hustle 'round, you fellows, and get out an extra special edition."

HUSH! HUNS ARE SEVEN MILES AWAY.

An American Colonel, newly arrived in France, on his first tour of inspection, approached a sentinel squatting behind a hedge and started to question him.

The Yankee shot back a reply in a husky whisper. Immediately the colonel flattened out on the ground with more haste than dignity.

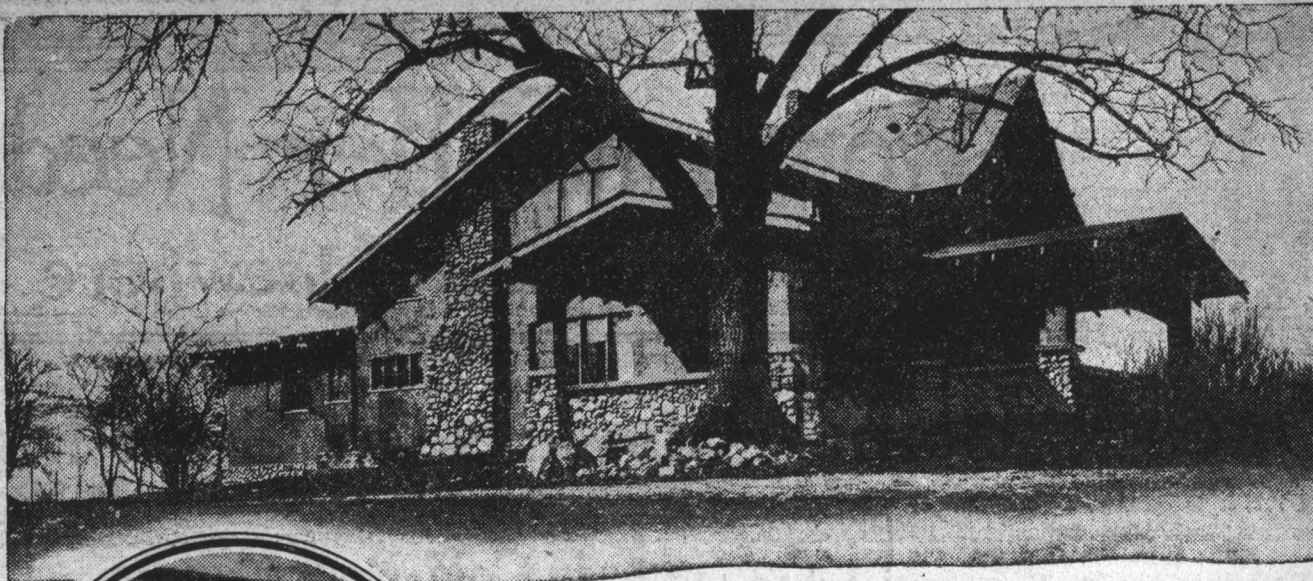
After exchanging a few breathless whispers with the sentinel, the colonel whispered:

"How far are the Huns from here?"

"About seven miles," the sentinel whispered back.

"Then why the — are you whispering?" the officer stormed.

"Been like this for weegs; godda heluva cold," replied the soldier, wiping his nose.



City Comforts in This Farm Home

On R. F. D. No. 10 out of Peru, Indiana, lives Walter Shinn, an up-to-date farmer who has every convenience in his attractive home. Mr. Shinn uses electric lights, has a complete water works system and a thoroughly equipped farm. He drove up in his car while we were waiting for him and told us:

"Two years ago I put in a No. 48 Caloric Furnace. I must confess that I was not altogether sure that it would heat my house because of its irregular shape, but the dealer was confident and I allowed him to persuade me. Now I wouldn't take that furnace out if I couldn't get another for twice what it cost me. The five rooms downstairs, the stairs, the hall and the bathroom are comfortable in the coldest kind of weather, and you know that in northern Indiana we have a severe winter climate."

"Lightened the Household Work" you know that in northern Indiana we have a severe winter climate. "My wife says the Caloric has very much lightened the household work. Its cleanliness and convenience have made it much easier for her, and we have real comfort all the time in our home."

"It has not cost us much, either. We started this furnace in September and kept it burning clear through March with about ten tons of Indiana coal, and you know we did not get the best Indiana coal this last winter. Eight tons will run us an ordinary winter. But this winter we used ten owing to the severe weather. I do not believe it cost me any more to heat my entire house with the Caloric than it did to heat only a few rooms with stoves."

Perfectly Satisfied

"Yes, I am perfectly satisfied with the Caloric Furnace in every way."

As is evident from the picture, Mr. Shinn has a home that anyone could be proud of. His water works system is possible only because he can keep his entire house warm. His comforts, which are equal to any city home, are due largely to the furnace, and, as will be seen by what he says, he has solved the heating problem.

You, too, perhaps are worried with a like problem. You will find the solution as Mr. Shinn did—in the Caloric Pipeless Furnace. Over 50,000 other people have added this comfort to their homes, all under a guarantee of satisfaction.

See the Caloric dealer. Let him tell you why we can guarantee your satisfaction. Or write to us and let us send you our free catalog, which describes the revolutionary principles on which the Caloric Furnace is built, and which tells you why it succeeds wherever it is installed. With this book we will send you the names of a number of people in your section who have added to their home comforts through the purchase of this furnace. Write us today.

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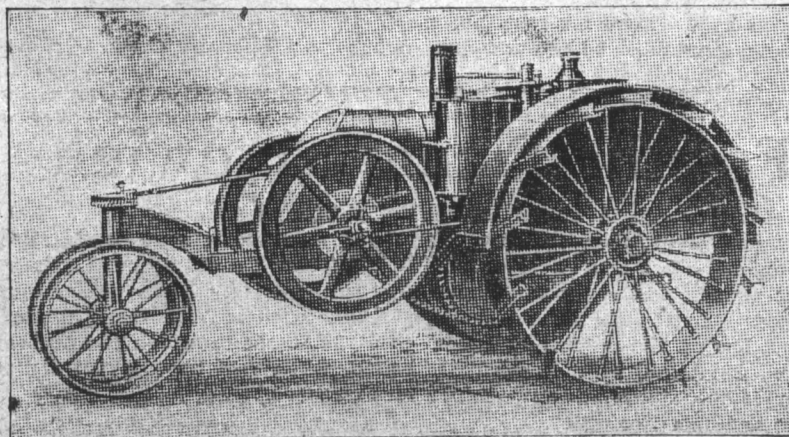
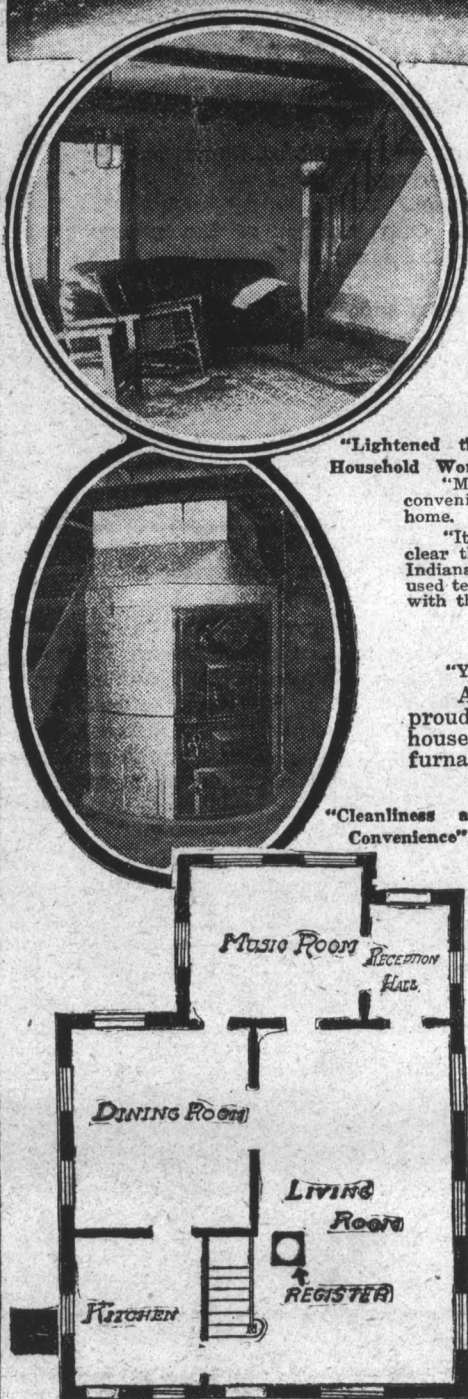
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Woman and Her Needs

At Home and Elsewhere



Questions and Answers on Cold-Pack Canning

WHY is cold-pack canning so named?—This method gets its name from the fact that the products are packed into the cans following the cold dip.

Is the cold-pack canning a new process?—No, it is an old process newly perfected.

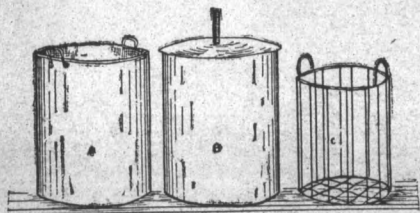
Does the color of a rubber have anything to do with how good it is?—No.

In cold dipping, should the product be left in the cold water or just put in and immediately removed?—In cold dipping, the product should be cold-dipped, then removed from the cold water immediately.

What makes the cans lose water?—First, because the covers were screwed on too tightly, or, second, because all of the air spaces in the product were not completely out; or, third, the product itself may have absorbed part of the water.

"Last year I canned some corn, cold-pack. It seemed to keep all right, looked all right, and smelled right, but it didn't taste right. What was the matter with it?"—Your corn was undoubtedly spoiled by "flat sour." It may be caused in many ways, the most common of which are by canning stale products or by leaving too long after blanching and cold-dipping before processing.

What would happen if the water in the sterilizer did not come up to the tops of the cans?—Probably nothing



A Type of Water-seal Canner: (A) Double-walled Vat; (B) Cover with Thermometer; (C) Crate for Jars.

would happen in most cases, but it is better to take precautions against any spoiling that might occur through not having enough water in the sterilizer.

What would occur if the empty jars were tightly sealed when put into the sterilizer?—The jars would be broken by the expansion of steam and air on the inside.

Ten Steps in Cold-Pack Canning

HERE are the successive steps in canning by the one-period cold-pack method:

1. Select only fresh fruits and vegetables. Do not attempt to can over-ripe fruit or over-mature vegetables.
2. Clean and prepare the product.
3. Scald or blanch as directed. Only enough of the product should be blanched a one time to fill a few jars.
4. Cold dip immediately.
5. Pack product at once in the jar and adjust rubber.
6. Add a teaspoonful of salt for each quart of vegetables.
7. Fill jar with hot water or syrup.
8. Adjust top, but leave it slightly loose.
9. Sterilize the required time.
10. Remove from canner and finish sealing. Do not remove top or rubber after sterilization. Place jars out of draft to cool.

Are apples blanched before paring or afterwards?—Apples are blanched after they have been pared, cored and quartered.

Is rhubarb a vegetable or a fruit?—Rhubarb is a vegetable but it is usually canned as a fruit.

Cut apples often turn black or tarnish. How can this be prevented?—Tarnishing of apples may be prevented by putting them in either salty water or water containing a little lemon juice as soon as they have been peeled, cored and quartered.

What is blanching?—Blanching, scalding or boiling are the same thing. Blanching gets its name from the fact that the color of a vegetable or fruit flows toward the outside when the product is plunged into boiling water.

Should green beans be broken or cut into pieces?—Green beans should preferably be cut, and cut on the bias.

Does the cold dipping have anything to do with the keeping of the product?—No. It merely makes it better color, makes it hold its shape better and cools the product, making it easier to get it into the cans.

When should one start to count time in blanching—from the time the product is first put into the boiling water or after the water around the product begins to boil?—Time for scalding or blanching should not be counted until

the water surrounding the product begins to boil vigorously.

Can corn syrup be used in canning?—Yes, but one should be sure the family likes the flavor before canning very much with it. The manufacturers recommend two parts of sugar to one part of corn syrup. Corn syrup is one-half water and this should be figured on when the water is added to make the canning syrup.

Is steaming just as good as blanching in boiling water?—Yes, it is better, especially with greens and green vegetables. The natural oils and mineral parts are said to remain in the product when steamed.

How can one tell whether cans are spoiling or not?—"Flat sour" cannot be detected. If, upon looking at the can and before turning it over, bubbles are seen rising up through the product, it is very likely that fermentation is taking place.

What are the objections to using canning powders?—Canning powders have been proven to be injurious to health and the law prohibits the sale of products so preserved. It seems just as bad to poison one's own family as it is to poison strangers.

In reckoning the sterilization period, when should one commence to count time?—Time should not be counted until the water is at a gallop, "trying to get out of the container." Do not make the mistake of starting to count time as soon as bubbles commence to rise to the top of the water.

Can meats be canned successfully cold-pack?—Yes.

Why do beets fade in canning?—In canning beets, loss of blood may be prevented by leaving on one inch of the stem and all of the tail while blanching. Beets should be scraped rather than peeled after blanching.

How can stored canned products be kept from bleaching?—All canned products will bleach if exposed to the light. To prevent this, jars may be either kept dark or put into paper sacks.

Is it proper to sterilize jars before the product is packed into them?—Yes. This not only sterilizes the jar but tempers the glass.



Where the Rules are Carefully Followed You Can be Proud of the Results.

AS a temporary measure we are asked to eat less beef, but are assured that we may now eat more pork and have never been told to go lightly on liver and tongue, so let's adjust home appetites to meet the shipping program. Summer days call for cold meats for supper and for picnics. Don't depend on tin cans for these meats. You can prepare delightful dishes without drawing on the national reserve of canned meats. It is a good plan, too, to pile up your own reserve of home-canned meats.

Pickled Tongue.

Boil a fresh tongue by placing it in hot water, let come to boil and boil gently for three hours, or until tender. When cooked, remove from the water, skin, put back into water and let get cold. Slice in thin slices, put one lay-

er of sliced tongue in bottom of an earthenware crock, then one layer of sliced onions, a few thin slices of lemon, salt, pepper, a little sugar and mixed spices. Repeat until all material is used up, having the onion and lemon on top. Cover all with vinegar. If vinegar is too strong, use two-thirds vinegar and one part water.

Pressed Beef Tongue.

1 beef tongue,
1 veal shank,
salt, pepper and cayenne to suit taste,
two tablespoonfuls catsup.

Boil tongue and veal shank together for three hours, putting it on to boil in cold water. This will draw out all of

the gelatin of the veal bone. When tender, skin the tongue, cut in slices or put through a coarse meat grinder. Add salt, pepper, cayenne and catsup, put into a mold and cover mixture with the liquid in which it has been boiled, when cold turn out on a platter and serve.

Calf's Head-cheese.

1 calf's head,
1 tablespoon chopped herbs,
Pepper,
Salt.

Put calf's head in enough water to cover, let come to a boil and boil gently until meat leaves the bone. Take up with a skimmer, put into an earthen bowl, season with salt, pepper and

chopped herbs. Lay a cloth in a colander, put minced meat into it. Fold a cloth over the top, weight down with a plate. When cold, slice and serve with mustard.

Pork Loaf.

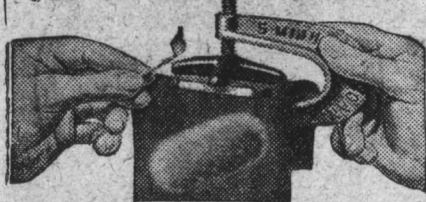
1 lb. chopped ham,
1 lb. chopped fresh pork,
3 teaspoons chopped onion,
1 teaspoon salt,
1 teaspoon pepper,
1½ teaspoons curry powder,
1 teaspoon sage,
1 egg,
½ cup cream.

Chop meat and onion and mix together. Add egg and cream. Shape into loaf and tie in cheesecloth. Simmer for two and a half hours in three quarts of boiling water, to which one

(Continued on next page).

For the Picnic Sandwich

Mend Your Tubes As Good As New



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Works automatically—without fail. Makes a perfect, lasting, feather-edge tube repair—anywhere on the road—in any weather—in five minutes. So simple a child can do it. No acid, cement or gasoline. Makes tube repairs far superior to any "stuck on" patch. Easily carried in tool box. Saves cost of spare tubes and repair bills.

Complete Outfit \$1.50
With 12 Patch & Heat Units

Comprises handy, nickel plated vulcanizer, 6 round Patch & Heat Units for punctures, and 6 oblong units for cuts and tears—(everything necessary to make 12 perfect, permanent tube repairs) with full instructions, only \$1.50. (Additional Patch & Heat Units only 75c per doz.) Buy from your garage or hardware dealer—or we will send prepaid, guaranteed, by parcel post direct from factory if your dealer does not sell it.

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Tells how to make your own tire repairs—how to increase tire mileage—how to prevent blowouts, sand pockets—general care of tires, etc. Don't fail to write for this valuable Free Tire Book now—before you forget.

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150 Acres, with Crops, \$1800 Borders Beautiful River and

has private lake stocked with trout; 1/2 mile milk station, mile school, convenient depot. 2 villages, 160 acres dark loam soil, level, machine-worked fields, pasture watered by river, lake, springs; estimated 1000 cords wood, 50,000 feet timber more than pay for farm; apple orchard, other fruit; 8-room painted house, veranda, big 55-ft. barn, \$10, 100 house, carriage house, piped spring water to buildings. To insure quick sale, owing to loss of wife, owner includes 25 tons hay, potatoes, beans, peas, other crops; \$1300 gets all, \$700 down, balance easy terms. Details this wonderful bargain, should sell on sight, page 3 Detroit's Catalogue with other farm bargains many with stock, tools, crops, copy free. E. A. SPROTT FARM AGENCY, Dept. 101, 150 Nassau St., New York, N. Y.

McClure Stevens Land Co.

We have for sale: 15,000 acres of fine unimproved lands, well located, joining well settled locality, on easy terms. A tract of 180 acres, 5 miles from Gladwin, on daily mail route, all fenced with woven wire, 20 acres under fine state of cultivation, 6 acres in fruit. A Sheep Ranch of 310 acres, all fenced, well grassed over, living water, 700 acres cleared, 30 acres under fine state of cultivation with fruit, good buildings, 250 head of sheep, 4 stock ranches well grassed, fenced and watered with living water. **McCLURE STEVENS LAND CO.** Gladwin, Mich.

Beautiful Home and block (3 lots) of land a block and a half from Central Michigan Normal School, all kinds of fruit, shrubbery, shade, will sell or trade for good farm. Cooper, Gover and Francis, Mt. Pleasant, Mich.

Wanted To hear from owner of farm or unimproved land for sale. O. K. HAWLEY, Baldwin, Wisconsin

teaspoonful of salt and four table-spoons vinegar have been added. Drain and press and cool.

Potted Liver.

Wash and cut up two pounds of beef liver. Cover with cold water, let come to a boil, and simmer until tender. Press through a potato-ricer, add one-half cupful of butter, one-half teaspoonful of salt, and a dash of pepper. Beat the above mixture to a smooth paste. Mince a good-sized onion and a few sprigs of parsley and stir into the mashed liver. Put in jars in a cold place and it will keep for some time.

A Flying Fighter

(Continued from page 138).

fly in a fog, but when he has to he generally holds close enough to the ground to enable him to see at least a little.

In a long distance flight we generally go over the top of the fog and then find our bearings by means of the compass and the timing of the speed we are making.

But we were not so very far away from the point at which we were to land the machines to be refilled with gas and oil, and for that reason going to the top of the fog was out of the question. I hugged the ground as closely as possible and in so doing made as a first discovery that there are large manufacturing towns somewhere in the middle of England. I was going along at low speed when suddenly there loomed up before me, out of the fog, something that caused my heart to stop beating. Right in front of me stood a large and tall factory chimney.

I turned to the right to avoid it, but hardly had done that when I was close to another chimney, which was directly in my path. Once more I turned. But before I had gone very far I was up against another chimney. I turned again; another chimney. I decided to see if I could not get out of the forest of chimneys by going in the other direction, but that too had the same result—more chimneys. For the next and longest ten minutes I ever experienced I described circles and half-circles around chimneys with the machine now on her nose, then on her tail, when not on her side. I finally reached what I thought an open place and decided to go over the top of the chimneys.

One of my reasons for staying so close to the ground was that I wanted to keep in sight of the railroad track which had served as my guide. The weather was so thick that I could not see two fields ahead of me.

When I came close to the ground again after sailing over the chimneys I found that I had lost the railroads, as well as At and his bus; for I afterwards found out that he had landed some twenty miles behind to avoid risks.

There was no use in going on, because, for all I knew I might run into more chimneys and not get off so luckily next time. With that in mind I decided to land in the first open field I came to. I came to one before long and landed. Soon hundreds of people had gathered around the machine and amused themselves by writing their names on its planes with lead pencil. One yokel was enterprising enough to cut a piece out of a strut with his knife. I had a hard time fighting these souvenir hunters, and I am sure that they would have carted off the machine bodily, had it not been for an officer of the law, known in England as "Bobby," who came and helped me tave off the memento-hungry mob.

The officers told me that there was an aerodrome five miles down the road. From the minute directions he gave me I gathered that I would be able to make those five miles despite the fog. I had some trouble in getting that

mob out of the way, but succeeded in the end. I started the motor, asked some of the men to hold the machine back until I should signal them to release it, and then climbed in. I taxied to the other side of the field to get into the wind. The crowd closed in behind me and when I turned around to take off, the onlookers scampered to the sides of the field. I opened up the throttle and was just getting off the ground when a little girl rushed out in front of the machine, which was then going about sixty miles an hour.

The only way to have the girl's life was to take a chance on my own neck. Before I knew it I had hurtled over the little girl, missing her by a few inches with the under carriage of the machine. I was going at such a speed that had she been hit by any part of the machine at all she would have been killed. In getting over the little girl I lost my flying speed and a bus without flying speed is like so much lead. The result was that I crashed into a hedge, smashed my prop to bits, and then the machine landed on its nose in the next field. The motor was making about 2,200 revolutions a minute, and to make things worse the gasoline tanks piled upon it and were ignited. Within a second the entire machine was ablaze. I was caught in some debris of the machine about ten feet away from the part that was burning. But I had sense enough to save my haversack, in which I carried my shaving tackle and my pajamas. I also thought of my stick. Next I seized the pyrene syringe and hurried over to the fire, which I succeeded in putting out. By that time a number of Home Defense Guards had appeared on the scene, though the only thing they found to do was to keep the people out of the field.

I had made a fine mess of it.

After that I made a trip to the nearest telephone three miles away and called up the wrecking crew of the aerodrome. They were to come up and salve the remains of a perfectly good BE2E.

This was my first real crash as a full-fledged pilot.

After that I went to a hotel, had a bath, and examined myself for broken parts. But aside from a good shaking up I had suffered no injury. My companion, the haversack, also was in good shape.

Next morning the commanding officer of the aerodrome sent over the wrecking lorry and a crew of students to pick up the odds and ends. Some of the students were Canadians and when later we met again at the 'drome they entertained me royally.

I could not leave that aerodrome until word had come from the commander of my squadron that I was to be relieved and sent back. But I had to wait a couple of days for my orders, being meanwhile billeted in a hotel in the city. I put in my free time hanging around the aerodrome and watching the boys tearing through the air learning to fly. While doing that I had occasion to find out that I was not the only one who had done queer things on his first solo trips.

One of the boys at this aerodrome—I have forgotten his name—was coming over a building about seventy feet high. On one corner of the building there was a small tower on whose top had been placed a weather vane resembling a rooster. The apprentice pilot was sailing a little too low, caught the rooster with one of his planes, and went down in the court behind a house a short way off, complete with rooster.

(Continued next week).

ONE SPOON PLEASE.

Make one spoon of sugar
do the work of two
Every day until
The war is through.

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Edition "K" (1918) of the Ball Blue Book of Canning and Preserving will help you solve the food problem. Its 82 pages contain the best, tested and chosen recipes for every fruit and vegetable. It describes the cold pack and all other canning methods—plainly and simply. Tells how to can fruit without sugar. It is the acknowledged authority—places the experience of the most successful housewives at your service.

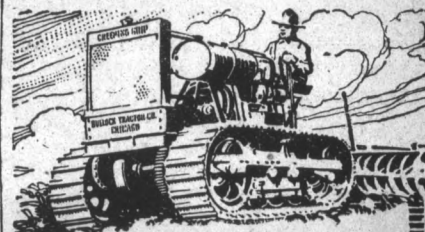
The Ball Blue Book has never been advertised before—this will be the only announcement in this publication this season because the supply is limited. If you want your copy, better write a note or fill in the coupon below with your name and address—**NOW!**

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Honey Wanted

Comb and extracted honey wanted in quantities of 500 pounds and upwards. State quantity and source. **M. H. HUNT & SON,** Box 525, Lansing, Mich.



Our Boys and Girls

At Work and play



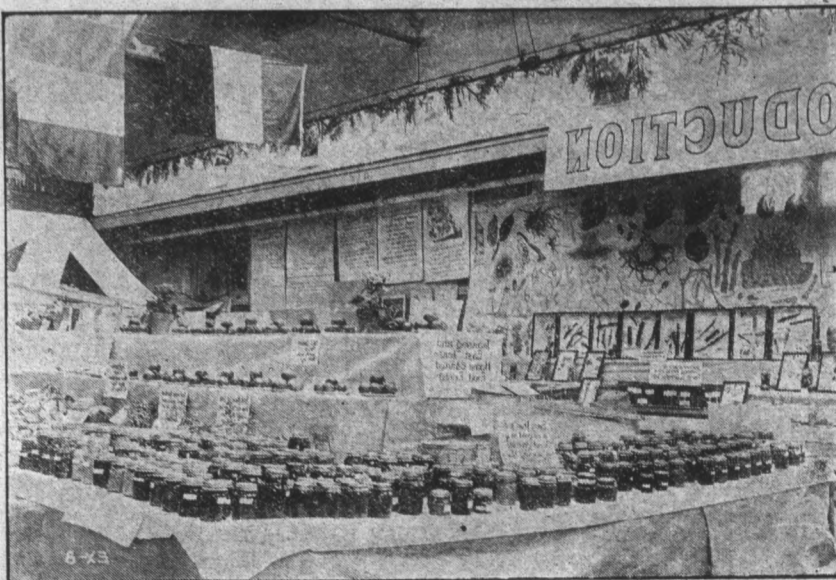
Canning Clubs and Club Canning

By MARY M. ALLEN

As a logical sequence, canning methods must be acquired as well as gardening, else all surplus vegetables will be wasted. Especial effort has been made this year to instruct boys and girls in canning. Sixty per cent of the output of commercial canneries will be needed by the government for the army and navy, the other forty per cent will be consumed in large cities where laborers are employed in great numbers on war contracts. This means a deficiency in small towns, and to meet this the federal government has in the field some six thousand trained workers to give instructions in canning.

Michigan club leaders were given a splendid demonstration in team canning by the cold-pack method. Demonstrations were conducted by Miss Warren, of the United States Department, and Miss Cowles, Michigan State Club Leader. Peas, beans, beets and cut greens were canned by these workers, then a team was chosen by Miss Cowles from among the leaders to conduct a similar demonstration. Six important points were brought out in connection with cold-pack canning. They were as follows: See that all heat and equipment are ready before beginning; see that kitchen is clean, thus insuring a minimum amount of bacteria and spores detrimental to vegetable canning. See that you have an abundance of hot water. Sterilize all cans, rubbers and covers five minutes before using. Test jars for rough edges or nicks in edge, especially the Mason type. Test rubbers; stretch rubber if it does not return to former shape and size, discard. Never use old rubbers. It is a splendid plan to apply this test when buying rubbers. If a groceryman becomes impressed with the fact that housewives really know what a good rubber is they will not offer inferior rubbers to their customers. Never can vegetables that are not strictly fresh and crisp. Cut beans slant-wise. If the season has been dry and product seems tough blanch until they seem tender when tried with a fork.

Viewed from a point of service, economy, efficiency and conservation canning communities represent a high achievement in club work. In these centers all work is in charge of a paid expert supervisor, either an extension worker, boys' and girls' club leader, or home demonstration agent. The entire output of a community is pooled and canned at the center. The pupils work in squads. Squads are divided into workers each group of workers being put at a particular task. A card record is kept of each person's product as brought in. This record shows the kind of product, amount of product, condition when brought in, actual amount of labor to can product, condition of finished product, and value. To equip a community canning center it requires an outlay of at least \$150. To be efficient, a canning center should put out seventy-five quarts of finished products in a day. Club leaders were organized into community canning centers and canned beet greens under the supervision of Miss Cowles.



Showing How Our Clubs Can Can.

Drying, especially vegetable drying, Department of Agriculture. Four points came in for more adverse criticism by the public last year than any line of work attempted by extension workers. Drying is purely a war expedient. Should the war last three years longer there will be a grave shortage of cans, both tin and glass, due to material and labor being diverted to war work. To forestall this, drying methods and equipment have been introduced into club work. A liking for dried products can be acquired. They can also be used admirably in soups. Drying is fully discussed and recipes for using dried products are given in Bulletin 841, furnished by the United States

through the sweating process. Just before putting into containers put into the oven for thirty minutes at a temperature of 180 degrees F.

Five large canning and drying centers are in successful operation in Michigan.

Miss Warren, of the United States Department, says: "Dry left-over vegetables from the table and use in soups. This is no age for the cat and dog."

Miss Cowles, State Club Leader, emphasized this statement: "Make use of what you have. Expensive equipment does not spell success nor are home-made devices to be despised."

Miss Warren, to housewives: "It is not conservation to can or dry things you know your family don't like or won't eat."

Grand Ledge has the champion canning club of the state.

Miss Toman, a Washington State Club Leader, reports a profit of \$89 in one season from the sale of canned products of a ten-year-old girl.

Miss Banks, of Elkhart, Indiana, is a regular attendant at Michigan Club Conferences. Wouldn't you like to send a canning team of three to your county fair to demonstrate the cold-pack process?

Several farmers' wives baked up enough for Dick and the hired man and attended the conference two, three or four days, as their time would permit. An ideal way to spend a vacation!

Speaking of the big canning effort, E. C. Lindemann, State Club Leader, says: "We need the help of twenty thousand boys and girls and of one thousand adult club leaders. The United States government must have canned goods for the army and navy. This demand, naturally, is diverting from us a large part of the supply that hitherto has been produced to meet our domestic wants. To make up this shortage, we are advised that more must be done in the homes. The United States Department of Agriculture has assigned to Michigan boys and girls a quota of 400,000 quarts. For this work we need more canning club leaders and more canning club centers. Our services are at the disposal of the public for organization purposes. Communications should be addressed to the Boys' and Girls' Club Department of the Michigan Agricultural College, East Lansing, Michigan. Recipes and literature can also be obtained by writing the same address."



A Group of Club Leaders Assembled at the State Club Leaders' Conference at Lansing, July 9-13. Mr. E. C. Lindemann, State Leader of Boys' and Girls' Clubs, is the Gentleman with the Smile at Top Near Center.

Wins First Prize with Porker

FIRST prize as a raiser of pigs among the Boys' and Girls' Clubs of Michigan has been awarded by the Boys' and Girls' Club Department of the Michigan Agricultural College to Rae E. White, a member of the pig-raising club at Albion, in Jackson county. The Albion boy, who is seventeen years of age secured a pig from a local bank and in the course of the year cleared a net profit of \$44.95 from

the animal which he had selected. Several hundred other boys in the state, all of them members of the army of farmers' sons and daughters have become interested by the college in live stock projects were among the contenders. All the young people are required to keep exact account of all expenses and profits paid out and obtained from their stock.

Rae's financial account showed the

following: Value of pig at time feeding was started, \$10; value of feed purchased or provided by farm, \$25.05; cost of labor in caring for hog (twenty hours at ten cents an hour), \$2; veterinarian's fees, none; cost of pasture at one-half cent per day, \$1.00; total cost of raising hog, \$30.05; receipts from sale of hog, estimated at close of contest, \$75, (with seven pigs); net profit, \$44.95.

Lime for Alfalfa

My employer requested me to write to you and ask you about putting lime rock on sandy soil for alfalfa. How much to the acre? Do you put it on before you plow your land or drag it in?

Muskegon Co.

L. J. S.

THE judgment of all who have had any experience with alfalfa goes to show that one of the prime requisites in getting a stand of alfalfa and keeping this stand is that the land be supplied with a liberal amount of carbonate of lime. The limestone soils are the ones that produce the best alfalfa. On my farm, bare clay sidehills that have washed badly, in fact, the top soil is nearly all washed off and the land has become hard, will grow alfalfa almost to perfection but this clay is full of lime. When you dig into it you can see white streaks of lime running all through it. This clay, of course, is also rich in potash and phosphorus and as alfalfa gets its nitrogen from the atmosphere, it can live better on this sort of soil than almost any other crop, but when you sow alfalfa on land that is deficient in lime it grows weakly or not at all. You cannot have acid condition and produce a luxuriant crop of alfalfa.

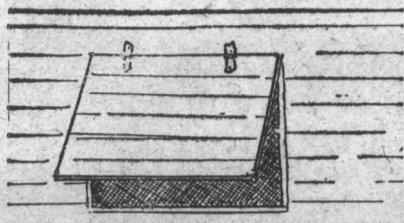
Most all sandy land is deficient in lime. I wouldn't say that all sandy land is, but most all is, and so it is almost safe to say that it will be a splendid investment to apply lime to this land before you seed it to alfalfa.

As to the amount, the more the better; not less than one ton to the acre and two tons would be much better. Governor Hoard, of Wisconsin, on his farm near Fort Atkinson, used to apply four and five tons to the acre when he was applying lime to a field for alfalfa. A field is generally kept in alfalfa for four or five years, sometimes much longer so there is no good chance to apply lime only when you are preparing the ground for seed and then a sufficient amount should be applied so that the plant will have all the lime necessary during the time the field is kept in alfalfa. On other land where you have a three or four-year rotation of crops you get a chance two or three times during this rotation to apply lime but with alfalfa there is no chance as it is a very poor plan to apply lime on the growing crop; it doesn't get into the soil the way it ought.

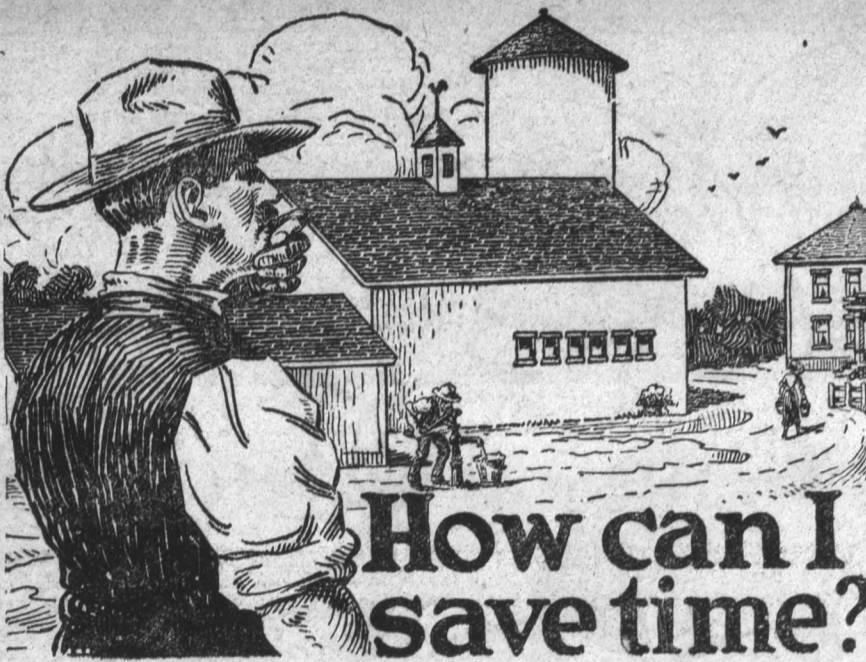
Lime should always be cultivated in and mixed with the soil so that it can neutralize any acidity present in the soil, even down to roots of plant. Applying lime on top of an established alfalfa field is therefore a poor way of making the application. It is much better to use an extra amount of lime in preparing the seed bed.

SWINGING DOOR FOR THE HOG HOUSE.

A door attached at the top so it will swing in and out will not only enable one to keep the pens warmer in winter and cooler in summer, but will also prevent the hogs from breaking the door off, and does not require the care that doors attached otherwise need.



There are different methods of fastening. A criss-cross belt hinge works well, or an ordinary metal hinge with the pivot extended below door frame an inch or so. Still another method is to insert pins in the doors and through the door frame about three inches from the top.—D. K.



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Stop the eternal pumping and carrying of water!

Leader Water Systems save you enough time to repay quickly the cost. They give you a constant supply of running water for house, barns, dairy, etc.

The Leader outfit illustrated is but one of the many types—we can supply you with just the size and kind to meet your own requirements. They are low priced, automatic in operation and require but little attention.

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**United States Help Badly Needed
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Help to Harvest the Canadian Grain Crop of 1918

Meets with a request for all available assistance to go forward as soon as our own crop is secured.

The Allied Armies must be fed and therefore it is necessary to save every bit of the crop of the Continent—American and Canadian. Those who respond to this will get a

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A card entitling the holder to a rate of one cent per mile from Canadian Boundary Points to destination and return will be given to all Harvest Applicants. Every facility will be afforded for admission into Canada and return to the United States. Information as to wages, railway rates and routes, may be had from the

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More than \$1,000,000.00 of business written the first year. This proves the demand for our Company.

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Your liability can be protected by our reliability

This is no time to take long chances. In these critical times "safety first" should be the watchword.

Cooperate with us and insure your livestock against death from accident and disease and thus save more than \$3,000,000.00 annually to the farmers of Michigan and to society.

Consult our local agent in your vicinity.

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Hampshires & Shropshires.

It's a wise man who orders his ram for August delivery now.

Some Good Breeding Ewes and registered BAMS for sale. Barnard Sheep Ranch, R. 5, Clare, Mich.

For Shropshire yearlings or lamb rams write ARMSTRONG BROS., R. 3, Fowlerville, Mich.

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS. The Shepherds of the East. I sell and ship everywhere and pay express charges. Write for club offer and price list. Oxford, Shropshires and Friesian-Delaines. PARSONS, Grand Ledge, Mich. R. 9

Ingleside Shropshires. Be sure to exhibit at the Detroit, Jackson, and Grand Rapids Fairs. HERBERT E. POWELL, Ionia, Mich.

Registered Shropshire yearling ewes and Registered Shropshire yearling rams. Representatives of this flock have given satisfaction in many states since 1900. Priced to sell. C. Lemen, Dexter, Mich.

Brookside Farm offers Shropshires of quality, 10 ewes 40 rams. R. 1, Ewart, Mich.

FOR SALE Oxford sheep all ages both sexes. GEO. T. ABBOTT, Palms, Mich.

Choice Native yearling ewes in lots of 50 or more \$16.50 each. ALMOND B. CHAPMAN, So. Rockwood, Mich.

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SIDNEY SMITH, Supt.

Wildwood Farms, Orion, Michigan
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WOODCOTE ANGUS

TROJAN-ERICAS & 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.

For Sale—Three Aberdeen Angus Bulls ready for prices reasonable. LANG BROS., Davison, Michigan

GUERNSEYS must reduce herd, so offer a few choice young bulls, all stock of A. B. breeding, herd tuberculin tested. T. V. HICKS, Battle Creek, Mich.

Red Guernseys. Two or calves, \$300. One bull calf with above. Bull calf is no relation to heifer calves. J. M. WILKINS, North Adams, Mich.

45 Registered head, all tub. tested. Nora's Guernseys. May King, son of Imp. May Rose King, heads our herd, 19 of his half sisters sold averaging \$150 each. His bull calves are booked ahead at reasonable prices. Avondale Stock Farm, Wayne, Mich.

For Sale Registered Guernsey bull calves May Rose breeding. R. 2, Holland, Mich.

GUERNSEYS—REGISTERED BULL CALVES. Containing blood of world champions. HICKS' GUERNSEY FARM, Saginaw, W. S. Mich.

FOR SALE 2 registered Guernsey cows and 1 Bull calf. FRANK NASH, R. 3, Box 57, Fremont, Mich.

For Sale Guernseys: 15 high grade cows and heifers. Reg. May Rose bull 4 mo. old and reg. cows, tuberculin tested. GILMORE BROS., Camden, Mich.

A Good Note accepted in payment of finely bred registered Holstein bull calves. Quality of the best, and at prices within reach of all. Write: GEO. D. CLARKE, Vassar, Mich.

I Always Have Holsteins To Sell

If wanting Registered cattle write me your wants before placing your order elsewhere.

L. E. CONNELL, Fayette, Ohio

Jack Bill

Winn--Wood Herd

Registered Holsteins

Sire in Service
Flint Maplecrest Boy

Who is bred for real production his sire Maplecrest Korndyke Hengerveld is one of the best bred long distance bulls in the world. He or his dam are brother or sister to six cows with records above 500 lbs. of butter in one year and ten more above 400 lbs. in a year. Flint Maplecrest Boys' Dam is Gluck Vassar Bell 30.57 lbs. of butter in 7 days, 121 lbs. in 30 days. Butter fattest 5.27. Is there a reason why Flint Maplecrest Boy is not one of Michigan's greatest young sires. None of his females are for sale until after we test them. But we have 10 of his bull calves from 3 to 9 months old, with A. R. O. dams which we now offer for sale at prices any dairy farmer can afford to pay. Just tell us the kind of a bull you want.

JOHN H. WINN, Inc.

Lock Box 249, Roscommon, Mich.

Additional Stock Ads. on Page 145



After the War—What?

We must win the war and win it now. Let us have peace, but only through victory. There should be a broad, careful preparation, for after-the-war preparation for peace is as essential as preparation for war.

We shall have to plan for expanding markets abroad. We must also be watchful of the welfare of business at home. Strong efforts will be made to have the United States thrown open to the markets of the world and to place the products of American farmers in competition with the products of the farmers of other countries who do not pay our scale of wages for their labor and are not called upon to bear as heavy expenses.

This year Michigan should send to the United States Senate a man who will stand for a tariff which will protect the American farmer. He should see to it, too, that Michigan wheat and wool get as square a deal as Mississippi cotton.

Congress should lend a hand to the business end of farming as well as to the science of production. The fixing of the price of wheat, the difficulties in fixing the price of milk, the vagaries of the price of cotton all cry out to prove that the problems of production and commerce, as they affect the people who work in the open country, are not receiving the same logical treatment.

Truman H. Newberry is a protectionist. He has no free-trade notions now, and never did have. He is stable and dependable. With him in the United States Senate, Michigan

farmers could feel sure that in him they had a friend who would stand for Michigan men and Michigan products in competition with the products of foreign countries. He would see to it, too, that Michigan products were accorded as fair treatment as the products of states farther south.



Truman H. Newberry

Truman Newberry is a Michigan product himself. He was born in Michigan. His life has been devoted to public service, and that service has rebounded to the benefit of the state as well as to the nation. He organized the Michigan Naval Brigade and enlisted in it as a common seaman on the Yantic. He served as lieutenant on the Cruiser Yosemite in the Spanish-American war. He is serving now as a Commander in the Third Naval District.

He was and is the Roosevelt type of man and President Roosevelt made him Secretary of the Navy, and while serving in the navy department, he reorganized the whole navy system and placed the fighting force of this country on the best footing it had occupied up to that time.

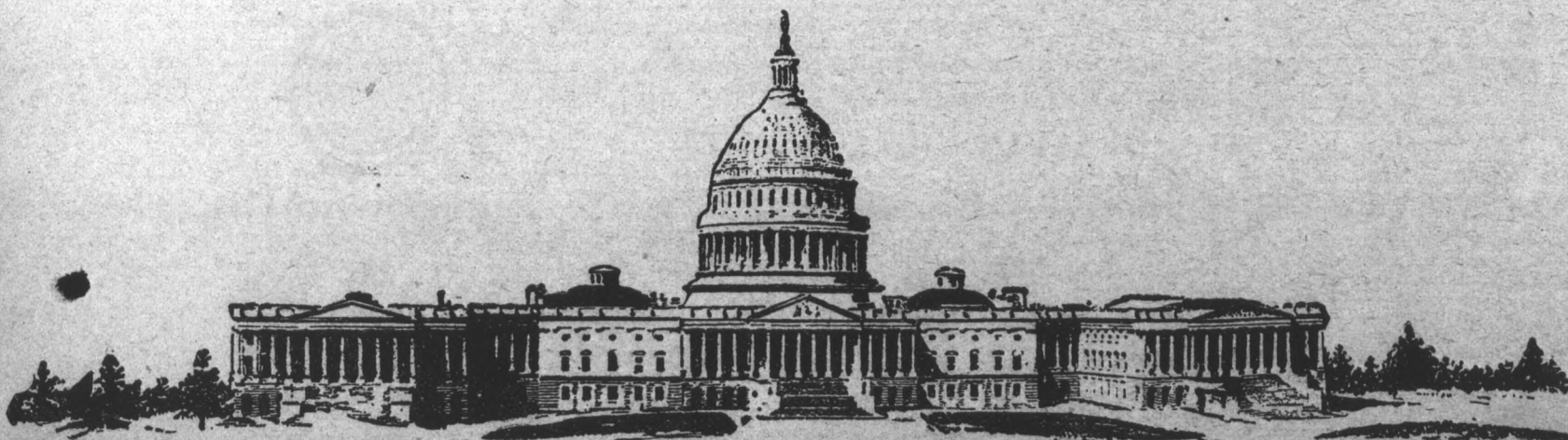
Like Colonel Roosevelt, too, Commander Newberry instilled patriotism and Americanism in his two sons. Both of them enlisted and are in the service today, one in the

navy, the other in the army.

Commander Newberry as United States senator would serve all the people. He has nothing to sell them. Michigan farmers can depend upon him. Michigan laboring men can trust him. Michigan business men will get a square deal from him.

NEWBERRY for SENATOR

Published by Newberry Senatorial Committee
A. A. Templeton, General Chairman
Paul H. King, Executive Chairman



Veterinary.

CONDUCTED BY W. C. FAIR, V. S.

Cows Fail to Come in Heat.—I have two young cows that came fresh in March and neither of them have yet been in heat. Is there anything I can give them to bring them in heat or will I have to let them go to the block? M. W. J., Henderson, Mich.—It is expecting too much of drugs (in these kind of cases), to stimulate the generative organs into action. Therefore, the result of treatment is often disappointing; however, you might try giving 1 dr. of ground nux vomica, 1 dr. of ground capsicum and 1 oz. of powdered licorice at a dose in feed to each cow twice or three times a day for thirty days, and if it fails, then fatten them for the butcher. If they are good milkers, they will perhaps prove profitable for dairy purposes until next winter.

Enlarged Glands—Lumpy Jaw.—One month before my four-year-old cow had her calf, (first calf), bunches appeared near jaws, shoulders and near udder, which are hard and the size of a man's closed hand. Soon after she calved these bunches gradually reduced, in size and went away. Her calf is now three weeks old and the bunches are returning. She walks as if in pain, is fed grain and runs on fairly good pasture. F. K., Romulus, Mich.—Paint bunches with tincture iodine daily. Give her 1 dr. of potassium iodide in either feed or drinking water two or three times a day. If this cow suffers from generalized lumpy jaw she should be kept away from your other cattle, or perhaps sold for beef; subject, however, to meat inspection.

Heifer Fails to Come in Heat.—We have a registered Holstein heifer that calves for the first time in February. The calf was very large and we found it necessary to give a great deal of assistance at time, but she has been a splendid producer. However, she has not shown any indications of being in heat since freshening, and as we are anxious to breed her again if possible, we would like to know if there is anything that can be done to aid her. F. M. B., South Haven, Mich.—Give your heifer 40 grs. of ground nux vomica, 60 grs. of ground capsicum and 1 oz. of powdered licorice at a dose in feed three times a day. After giving her this medicine for fifteen days, subject her to a forced service and she may perhaps come in heat. I might say that results from treating these kind of cases are quite uncertain.

Rheumatism.—I have 24 young pigs that run in pasture and are fed skim-milk, ground barley, ground oats, mixed in a rich swirl; but five of them seem to be stiff in hind quarters and wobble when walking. J. L. M., Waitz, Mich.—You fail to state age or weight of pigs, therefore the writer is unable to prescribe the exact dose; however, if they weigh 25 or 30 pounds each, give two or three grains of sodium salicylate at a dose in feed two or three times a day. It would seem as though they were fed about right; however, the pigs may inherit a predisposition to this rheumatic or semi-paralytic ailment. Hand-rubbing their back once or twice a day would have a good effect. Furthermore, they should not be allowed to lie in a damp, filthy place, or wallow in too cold water.

Dropsy—Blood Poison.—I have a seven-year-old horse that first commenced to swell under belly; this swelling increased and at the end of two weeks was six inches wide and extended from sheath to fore legs. Two small bunches showed up, a yellow fluid oozed through skin, but the horse was some stiff, not seemingly very sick. Our local Vet. treated him for two weeks and horse appeared to get well. Now he seems to be swelling some and I wish you would tell me what to do for him. H. S. H., Crosswell, Mich.—Give him 60 drops of fluid extract nux vomica and 40 grs. of potassium iodide in feed or drinking water three times a day. He should have walking exercises, twice daily, or allowed to run out during pleasant weather.

Hip Lameness.—Our four-year-old cow is lame in hind leg; acts as if the trouble was in stifle joint. She is growing thin. J. W., Utica, Mich.—Doubtless she suffers pain; this will account for her losing flesh and giving less milk. Mix together equal parts of turpentine, aqua ammonia and raw linseed oil and apply to stifle and hip once or twice a day. She will recover more rapidly if given absolute rest.

ANOTHER SALE

This Explains Why I Must Repeat My Sale of June 3rd—a Great Opportunity for You

**THURSDAY,
Aug. 29, 1918**
I Will Disperse My
**50 Head Hol-
stein - Friesian
Dairy Cattle**

from my farm, one mile east of Wayne, Mich., on Michigan Ave., Ann Arbor car line, 16 miles west of Detroit.

This is the sale you have been waiting for.

The herd contains daughters of Pontiac Korndyke, King of the Pontiacs and Rag Apple Korndyke 8th.

Send for catalog, all stock will be given the T. B. test and guaranteed free from all contagious diseases.

Robert R. Pointer & Son,
Dearborn, Mich.

CATTLE

OAK Leaf Farm. Herd sire Lenawee Pontiac Calamity King offer Registered Holstein bull calves from A. R. O. cows and the above sire whose dam holds the milk and butter record in the state of Ind. 7 days milk 796.3, butter \$2.51—315 days milk 23782.3, butter \$25.775.
E. H. GEARHART & SON, R. 4, Marcellus, Mich.

"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.

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.

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.

\$50 Liberty Bond gets 1 mo. old grandson of Pontiac Maid 30 Lb. Other granddam sister to grand sire of 42 lb. 4 yr. Herd free tuber. Apr. adv. for females. Terms, M. L. McLaulin, Redford, Mich.

It pays to have a worthy sire for your herd. Get a Pure Bred **HOLSTEIN BULL**

and raise only healthy, vigorous profitably productive cows.
The Holstein-Friesian Association of America, Box 164, Brattleboro, Vt.

The Pontiac Herd

"Where the Champions come from"

Offer Bull Calves sired by sons of Pontiac Korndyke, Hengerveld DeKol, Pontiac Dutchland, or Admiral Walker Pletertje.

Do you want a Pontiac in your herd?
Pontiac State Hospital, Pontiac, Mich.

ROBERT R. POINTER WILL HAVE ANOTHER SALE

Robert R. Pointer, who held what he supposed would be a complete dispersion sale of his fine Holstein herd on June 3rd, finds himself with \$10,000 worth of cattle still on his hands, and advises that he will hold another sale some time in August.

Inasmuch as it was announced that Mr. Pointer disposed of his entire herd at the previous sale, which was considered one of the most successful of the year, an explanation is due as to the reasons for the second sale.

Among the active bidders was a Farmington man, who made successful bids on over \$10,000 worth of cattle. When it came time to settle under the terms of the sale, the buyer was unable to produce either the money, bankable paper or security. It developed that he was not sufficiently responsible financially to handle any reasonable deal which Mr. Pointer was willing to make, and as a result, some of Mr. Pointer's choicest animals were thrown back on his hands. Hence the second sale.

A Few Fine Bulls For Sale

Bigelows Holstein Farms, Breedsville, Mich.

The Traverse Herd Great Values In Bulls

from A. R. O. Cows with records up to 30 lbs. Let us know your wants. We will send extended pedigrees and prices.

TRAVERSE CITY STATE HOSPITAL, Traverse City, Michigan.

Want Yearly Records?

Our new sire has four sisters whose semi-official records are 677, 742, 913 and 946 pounds of butter in one year respectively at 2 to 3 years of age. His dam is a daughter of Friend Hengerveld De Kol Butter Boy, four of whose daughters have records over 1000 pounds and she is also a granddaughter of Pontiac Angie Korndyke, with six daughters above 1000 pounds of butter in one year.

Peaceland Stock Farm, Three Rivers, Mich.
C. L. Brody, Owner
Charles Peters, Herdsman

As I Am of Draft Age

& expect to be called this fall I am forced to dispose of my entire herd of pure bred Holsteins, consisting of 23 head. Priced to sell. Write or come and see M. MOON, - - - - Brunswick, Mich.

HOLSTEINS of quality. Bull calves from dams with records high as 31 lbs. in 7 days. Also colts puppies.
E. A. HARDY, - - - - Rochester, Mich.

Holstein calves, 5 heifers, & 2 bulls 15-16ths pure, 5 weeks old, beautifully marked, \$25 each, crated for shipment anywhere. Buy only the best.
EDGEWOOD FARMS, - - - - Whitewater, Wis.

Holsteins: Bull calf born Oct. 6. A nice individual well grown in good condition. His seven nearest dams average butter 7 days 23.38 lbs. milk 53 lbs. Dams record 18 lbs at 2 1/2 yrs. W. B. Reader, Howell, Mich.

\$100 Registered Holstein bull calf 6 months old, also four year old cow soon fresh.
RIVERVIEW FARM, - - - - Vassar, Mich.

For Sale— Registered Holstein Bull 2 1/2 yrs. old from a 40 lbs. sire and a good A. R. O. heifer for price and pedigree write Wm. GRIFFIN, - - - - Howell, Mich.

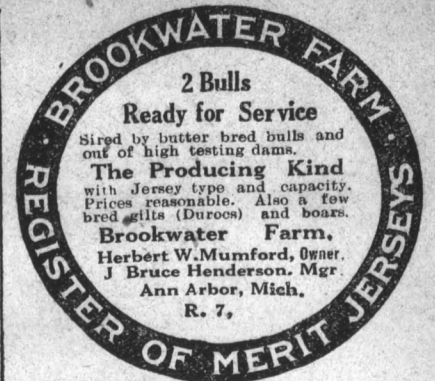
For sale reg. Holstein bulls five months old to serviceable age \$40 to \$75. Heifers, bred heifer and cows \$100 up. Frank Staffen, Howard City, Mich.

Maple Lane R. of M. Jersey herd. For sale one four-year-old cow, also bull calves and heifer calves sired by a grandson of the Pegasus 99th of Hood Farm.
IRVIN FOX, - - - - Allegan, Mich.

THE Wildwood Jersey Farm offers for sale choice bull calves for fall service from R. of M. daughters of Majesty's Wonder, by Majesty's Oxford Fox. Herd tuberculin tested. When looking for a sire to head your herd, get a Majesty. Alvin Baldwin, Capac, Mich.

For Sale Registered Jersey Cattle of both sex. Smith & Parker, R. 4, Howell, Mich.

For Sale The Belding Land & Improvement Co. offers for sale a nice bunch of female Jerseys, thoroughbreds. Calves, yearlings and two year olds also 16-mos. old young bull. Address W. F. Hetherington, Agt. Belding, Mich.



JERSEY bull and bull calves for sale from R. of M. cows, also heifers and cows of all ages.
C. B. WEHNER, - - - - Allegan, Mich.

Lillie Farmstead Jersey Cattle. Several heifers bred to freshen next fall. Also a few heifer and bull calves of choice breeding. Colon O. Lillie, Coopersville, Mich.

For Sale A fine, dark, solid color Jersey bull 16 mos. old. Double grandson of Royal Majesty and out of R. of M. cow.
C. & O. DEAKE, - - - - Ypsilanti, Mich.

Ten Jersey Heifers For Sale Price \$300.00 for the bunch.
NOTTEN FARM, - - - - Grass Lake, Mich.

Herefords Bob Fairfax 42427 at head all ages either polled or horned. Double grandson of McCarty, Sec'y Mich. H. B. Ass'n, Bad Axe, Mich.
EARL C. McCARTY, - - - -

Herefords Polled and Horned blood lines. Perfection and Prime Lad 9th breeding. Prices reasonable.
COLE & GARDNER, - - - - Hudson, Mich.

HEREFORDS

6 bull calves for sale, Perfection Fairfax and Prince Donald breeding.

ALLEN BROS.,
PAW PAW, MICH.

Hereford for sale 4 bulls: 1 three years, 1 one year and 2 six mos. old.
REED SCHULTZ, - - - - Homer, Mich.

For Sale Anxiety Ninth. Two years old. Double Standard Polled Hereford Registered bull. Good size, straight lines, big bones, good disposition. Photographs on request. Colin P. Campbell, Grand Rapids, Mich.

Shorthorns—Scotch and Scotch Topped animals of both sex for sale. Prices reasonable.
GEO. D. DOSTER, Doster, Mich.

BIDWELL SHORTHORNS

Registered bulls, cows and heifers—Good Scotch and Scotch Topped for sale. In prime condition. Modern sanitary equipment. Farm 10 minutes from N. Y. O. depot, 1 hour from Toledo, Ohio. Automobile meets all trains. Write
BIDWELL STOCK FARM,
Box B, Tecumseh, Mich.

Richland Farms

Shorthorns
IMP. Lorne in Service. Grand Champion Shorthorn of Mich. Offer for sale a choice collection of young bulls by sons of the leading sires of the breed. You cannot afford not to own one of these bulls at the prices we are asking for them. We invite correspondence and inspection.
C. H. PRESCOTT & SONS,
Farms at Prescott, Mich. Office at Tawas, City, Mich.

Francisco Farm Shorthorns
We maintain one of Michigan's good herds of Scotch and Scotch Topped cattle. They are well bred, properly handled and price reasonable. Come and see; we like to show them.
P. P. POPE, - - - - Mt. Pleasant, Mich.

The Kent Co. Shorthorn Breeders Association are offering some choice animals at reasonable prices. Write your wants.
L. H. LEONARD, Sec., - - - - Caledonia, Mich.

Dairbred Shorthorns of best Bates Strains, young stock of both sexes for sale.
J. B. HUMMEL, - - - - Mason, Mich.

SHORTHORNS
Cows, heifers & young bulls for sale at farmers prices; herd catalog mailed free. Horrieton Farms, Hart, Mich.

Shorthorn Cattle of both Sex for Sale
W. W. KNAPP, Howell, Michigan.

For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archer Hope, Avondale, Maxwellton Sulton and White Hall Sulton by the Oscola Co. Shorthorn Breeders Ass. JOHN SCHMIDT, Sec. Reed City, Mich.

Shorthorn herd bull. A roan by the great Avondale, for sale. For particulars write
H. B. PETERS, - - - - Carland, Mich.

Registered Shorthorn bulls, and registered percheron mares for sale.
Bedell & Wheatlake, - - - - Big Rapids, Mich.

Shorthorn Seven Scotch and Scotch Topped bulls for sale. Price reasonable.
W. B. McQUILLAN, - - - - Howell, Mich.

Red Bull Calf 7 mos. old also two heifers for sale.
J. E. TANSWELL, - - - - Mason, Mich.

HOGS

Registered Berkshire gilts and sows for fall farrowing. 3 bars and spring pigs, either sex.
CHASE STOCK FARM, R. 1, Marlette, Mich.

HOMESTEAD FARMS

A Federation of Interests
Duroc Jersey and Hampshire Hogs
A number of well bred fine young spring and sow pigs are offered for sale. Please write for description and photographs. One Hampshire sow to farrow in August.

BLOOMINGD LE ASSOCIATION
Bloomington, Mich.

Durocs. Choice spring pigs out of selected sows and sired by our best herd boars. They are of the big type, strong boned, smooth and of excellent quality and include some of the most popular blood lines such as Orion Cherry King, Top Col. Defender, Brookwater etc. Prices reasonable. The Jennings Farms, Bailey, Mich.

Additional Stock Ads. on Page 147

LATEST MARKET REPORTS

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, August 15.

WHEAT.

Wheat values are ruling a little slower than a week ago. The grain has been moving freely of late and dealers as well as exporters have satisfied their immediate demands. The recent extremely warm weather has indirectly given strength to this market, however, by greatly reducing corn prospects. Receipts of wheat at important market terminals since the first of July exceed 66,000,000 bushels as compared with 18,398,000 bushels for the corresponding period a year ago. One year ago No. 2 red wheat sold on the local market at \$2.20 per bushel. Present quotations for cash wheat are as follows:

No. 2 red	\$2.22
No. 2 mixed	2.20
No. 2 white	2.20

CORN.

It is difficult to size up the corn situation following the extreme weather conditions prevailing for the past ten days. No one doubts that a great deal of damage has been done. This damage is reflected in the advanced prices which dealers have been willing to pay for this grain. Reports from Michigan fields show that our crop will yield considerably below normal, although in some sections our correspondents state that the outlook is still favorable providing they soon have rain. Receipts of corn at leading primary markets since last November to date amount to 240,025,900 bushels as compared with 203,001,000 bushels for the corresponding period of the previous marketing season. A year ago No. 3 corn sold on the local market at \$1.89 per bushel. Present local prices which are advanced over those quoted a week ago are as follows:

No. 3 corn	\$1.75
No. 3 yellow	1.85
No. 4 yellow	1.75
No. 5 yellow	1.65
No. 6 yellow	1.60

Chicago prices have also advanced as follows: No. 2 yellow \$1.82@1.85; No. 3 yellow \$1.77@1.80; September corn \$1.62½; October \$1.63½.

OATS.

Despite the adverse news on the corn crop, oat values have suffered a decline during the past week. This has been due largely to the liberal receipts at country elevators and primary markets and also to general reports of a record-breaking harvest. The receipts since August 1 at primary markets total 14,939,000 bushels as compared with 8,848,000 bushels for the same period in 1917. Yields where threshing is under way are well up and in many instances greater than where predicted a few weeks ago. A year ago standard oats sold in the local market at 80c. Present quotations at Detroit are as follows:

Standard (new)	68
No. 3 white (new)	67½
No. 4 white	66½

RYE.

There is no change in this market. Sellers are more plentiful than buyers. It is hoped that the permit granted by the Food Administration upon the solicitation of the Michigan Farmer for the grinding of rye unfit for flour and where it can be shown that a farmer has no other feeds the grinding of any rye that he may have for feed purposes will stimulate a greater interest in this market. Present prices at Detroit for cash No. 2 rye is \$1.58 per bushel. The price at Chicago for the same grade is \$1.56@1.60.

BARLEY.

There is no attention given to this grain on the local market. At Chicago the grain is moving to a small extent with fair to fancy grades selling by sample at 90c@1.02 per bushel. Michigan farmers have promise of a record crop of this grain.

BEANS.

The outlook for beans in this state is very good. From every section where the crop is grown in commercial quantities the condition of fields

is reported from fair to excellent. Particularly in the central and northern bean growing counties are good stands mentioned by the reporters. The demand for cash beans is fair and the local market steady with prices for cash shipment at \$10.25 per cwt. At Chicago there is fair demand for fancy naval beans with choice to fancy hand-picked pea beans from Michigan quoted at \$11@12. Red Kidneys range \$9.50@12 per cwt.

SEEDS.

There is very little activity in the seed market to date. The crop does

not promise a large yield. Prime red clover is quoted here at \$18; October \$17; alsike \$15; timothy \$4.45 per bushel.

FEEDS.

A wide variation obtains in the prices charged by the feed dealers throughout the state for mill feeds. We would bring the attention of our readers to the editorial comment and the rules governing wholesale and retail dealers of feeds, as published on page two of this issue. Prices to jobbers at Detroit are, for bran \$34.66; middlings \$36.66; cracked corn \$75; coarse corn

meal \$69; chopped feeds \$48@55 per ton. These prices are for sacked feed.

POTATOES.

The potato crop of the northern states will be considerably reduced by the recent hot days. Reports from all of the important potato growing counties of Michigan point that moisture is needed by this crop in practically every locality. In some places the fields had rains during the past two or three days and this will help, but the general belief has gotten out that potatoes will command a good price this coming year because of the shortage which will undoubtedly occur. Practically all of the potato markets are strong at the present time. Supplies are generally light and prices firm to higher. At Chicago the Early Ohios are bringing \$2.35@2.40 per cwt. for field run, while Cobblers are bringing \$4 for 120-lb. sacks at Detroit.

HAY.

Hot weather has given the hay trade a boost and prices on the local market have advanced during the week.

No. 1 timothy	\$24.50@25.00
No. 2 do	22.50@23.00
No. 1 mixed	21.00@22.00
No. 1 clover	18.00@20.00

Pittsburgh.—Those in a position to see the situation as it actually is predict a hay famine at this point in the near future. Prices are advancing rapidly. Present quotations are:

No. 1 timothy	\$28.50@29.00
No. 1 light mixed	26.00@27.00
No. 1 clover	21.00@25.00

BUTTER.

While speculative buying has been discouraged by government regulations the markets are being cleaned up rather closely despite high prices. Production is being liberally curtailed by the poor pastures. Receipts of butter at primary markets were less last week than they were the preceding week and considerably under the receipts for the corresponding period in 1917. At Detroit jobbers are paying 44c for fresh creamery extras and 43½c for do firsts. The Chicago market is strong with creamery ranging from 39½@44½c. At New York the trade is firm with prices for creamery at 43½@46½c.

EGGS.

The usual decline in the production of eggs at this season of the year and the steady demand due to the high prices of meats are responsible for the advance in egg values. Michigan candled firsts are selling to jobbers in Detroit at 39½@40c. Chicago prices range from 35@38c, while in New York western stock is bringing 38@62c according to color and grade.

CHEESE.

This market is firm to higher. Production is greatly curtailed while the consumption is unusually large. Flats sell at 25½@27c at Detroit, while Daisies bring 26½@27c. In New York the market is firm with specials bringing 25½@26c and average run 25½@25½c per pound.

LIVE STOCK NEWS.

There is a big gap in prices between cow and steer beef. The food bureau takes only steer beef, and this causes a premium for such stock. In Kansas City good cows of from 1000 to 1100 pounds have sold at \$8.50, the spread between these and light steers being from \$4@5 per cwt.

Hogs coming on the Chicago market average in weight 242 pounds, being 10 pounds heavier than a year ago and eleven pounds heavier than two years ago, standing five pounds heavier than the general average for corresponding weeks in the past nine years. Enormous army contracts explain the boom in hogs.

SEED SUPPLIES.

Secretary Nicholson of the Michigan Crop Improvement Association reports that conditions are favorable for a crop of 162,000 bushels of Red Rock wheat and 280,000 bushels of Rosen Rye, making a total crop of more than 440,000 bushels of inspected pedigreed wheat and rye available for this fall's seeding.

Live Stock Market Service

Reports for Thursday, August 15th

BUFFALO.

Today's hog market was 10@15c lower than yesterday's, with pigs selling at \$20@20.75; good quality yorkers and light mixed \$20.65@20.75; other grades \$20.40@20.60; the cattle trade ruled steady. The best calves sold for \$17.75 and the top lambs at \$18.

CHICAGO.

Cattle.

Receipts 13,000. Market very dull; bidding unevenly lower except for few best common fed and canners.

Good ch'ce prime \$16.75@18.85; common and medium butchers \$10@16.75; heifers \$7.25@14.25; cows \$7.50@14; bologna bulls \$8@13.50; canners and cutters \$6.50@7.50; stockers and feeders, good \$10@13; stockers and feeders common and medium \$7.50@10.

Veal Calves.

Market 25c higher. Top \$17.50.

Hogs.

Receipts 20,000. Market steady to 15c lower.

Tops \$19.75; bulk of sales at \$18@19.50; heavy \$18.90@19.35; mixed and light \$19.30@19.55; packers' hogs at \$17.75@18.25; medium and heavy at \$17.90@18.75; light bacon hogs \$19@19.75; pigs, good to choice \$18@18.50; roughs \$17.25@17.75.

Sheep and Lambs.

Receipts 17,000. Lambs active and sheep slow to lower.

Choice to prime lambs \$18@18.85; medium and good lambs \$16.50@18; culls \$12@14; medium and good choice feeders \$16.50@17.65; choice yearlings \$15.50@16; medium and good do \$14@15.50; wethers \$13@14.40.

Reports for Wednesday, August 14th

BUFFALO.

Cattle.

Receipts 200 cars; market is ruling steady; prime hvy steers \$17@17.50; shipping steers \$16@16.50; plain and coarse \$13@14; best yearlings 950 to 1000 lbs. \$15@16; light yearlings, good quality \$13.50@14.50; best handy str \$12.50@13.50; fair to good kinds \$11@12; handy steers and heifers, mixed \$10.50@11; western heifers \$10@11.50; best fat cows \$10@11; butcher cows \$8@9; cutters \$7@8; canners \$5.50@6.50; fancy bulls \$10.50@11; common bulls \$7.50@8; best feeding steers 900 to 1000 lbs. \$9.50@10; medium feeders \$8@8.50; stockers \$7.50@8.50; light common \$7@8; milkers and springers \$7.50@15.

Hogs.

Receipts 10 cars; market is lower; heavy \$20.50@20.80; pigs and yorkers \$20.50@20.90.

Sheep and Lambs.

Receipts 10 cars. Market is steady. Top lambs \$17.50; yearlings \$14.50@15; wethers \$13@14; ewes \$11.50@13.

Calves.

Market steady. Prices range from \$7@18.50.

CHICAGO.

Cattle.

About 12,000 head arrived today, making 41,000 for three days, comparing with 37,000 for the same time last week. Prices are mostly unchanged, with beef steers selling on a basis of \$18.25@18.85 for the choicer class, \$17.25 and over for good lots, \$16 and upward for medium grade steers and

DETROIT

Cattle.

Receipts 3477. Market dull; good grades \$1@1.50 lower and others 50c@1 lower than last week.

Best heavy steers \$12.50@14.00
Best hdy wt bu steers 10.00@10.50
Mixed steers and heifers 8.50@ 9.00
Handy light butchers 7.50@ 8.00
Light butchers 6.50@ 7.50
Best cows 8.50@ 9.00
Butcher cows 7.00@ 7.50
Cutters 6.25
Canners 5.75@ 6.00
Best heavy bulls 8.50
Bologna bulls 7.50@ 8.00
Stock bulls 6.50@ 7.00
Feeders 9.00@10.00
Stockers 7.00@ 8.00
Milkers and springers \$60@ 125

Veal Calves.

Receipts 1,123. Market steady.

Best \$17.00@17.50
Others 8.00@15.00

Sheep and Lambs.

Receipts 1,999. Market very dull and 50c lower than Wednesday.

Best lambs \$16.00@16.50
Fair lambs 15.00@15.50
Light to common lambs 12.50@13.50
Yearlings 12.00@12.50
Fair to good sheep 9.50@10.50
Culls and common 5.00@ 8.00

Hogs.

Receipts 2,366. Pigs steady; mixed hogs 10@15c lower than Wednesday.

Good pigs 19.75
Mixed hogs 19.25@19.40

sales down to \$10.50@12.50 for common lots, while little canning steers are salable at \$6.50 and over. The best yearling steers bring \$18@18.50, and fat cows and heifers are wanted at \$7.25@15, with canners and cutters at \$6.25@7.20. Stockers and feeders are largely 25c higher this week, with better buying at \$8@11 for thin 600 to 900-lb. lots, while the choice weightier feeders are quotable up to \$12 or higher, few being sold. Veal calves are firm at \$16@17.25. Western range cattle are off as much as 25c in some instances.

Hogs.

Today's receipts are estimated at 12,000 hogs, making 74,600 for three days, comparing with 60,500 for the same time last week. Yesterday the early top was \$20, and there was a Monday \$20.15 top, a new high record. Today saw a sharp break in prices, hogs selling at \$17.50@19.75 as an extreme range, while the few pigs offered went mostly at \$17.25@18.50. About 12,000 hogs were carried over unsold from Tuesday.

Sheep and Lambs.

Today's receipts are estimated at 13,000 head, making total receipts for the week of 45,100, comparing with 41,900 for the same time last week. Prices show no particular changes, lambs being salable at \$13@18.75, with feeders at \$17@17.60 and the best native killers at \$17.85. Yearlings are salable at \$15@16 for killers, with feeders at \$13.25@13.60. Wethers are quotable at \$10.50@14.50 and ewes at \$5@13.50, with breeding ewes salable at \$14@19.

Letters from Our Crop Reporters

Huron Co., (Aug. 10).—Weather very dry. Beans and corn being affected by the drouth. Oats and barley looking fine. Some threshing has been done and barley is turning out thirty to fifty bushels per acre, sample is good. Hay is shorter than was expected earlier in the season. Early potatoes are looking fairly good, but the dry winds seem to have affected the later ones. Small fruits are very scarce. Apples seem plentiful. Stock is looking fairly good considering the weather and pasture conditions.

Calhoun Co., (Aug. 10).—Bean crop is good. Potatoes good but need rain; corn has made good growth but needs rain very badly now. Not much fruit; most of peach trees winter-killed. No threshing done in this vicinity. Milk brings \$3.25 per cwt. Distance from Camp Custer holds up price on milk.

Kent Co., (Aug. 9).—The condition of crops in this part of Kent county are: Beans 80 per cent; potatoes 60 per cent; corn 60 per cent; apples 40 per cent; peaches none; pastures 50 per cent; wheat is yielding about 10 bushels per acre; barley 30 bushels; oats 40 bushels. Milk sells at twenty-five cents per gallon; butter 40 cents; eggs 40 cents. Rain is needed badly.

Huron Co., (Aug. 10).—Beans look very promising. Potatoes also look good. Corn is very backward owing to poor seed. Fall apples are good; not many winter. Pasture badly burned up with hot dry weather. No threshing done yet. Local dealers are paying 41 cents for butter-fat; eggs 36 cents; cattle on foot eight cents.

Manistee Co., (Aug. 8).—Beans, potatoes and corn are doing nicely in this vicinity. Apples are poor and peaches a failure. Wheat will probably yield eight bushels per acre and rye ten bushels. We are in need of rain. Buyers are paying 38 cents for eggs and 40 cents for butter.

Charlevoix Co., (Aug. 8).—The bean crop which is just podding, shows a very good stand. Potatoes promise well while some corn is backward and apples and plums will yield about half crops. Pasture is very good for August. Both rye and wheat are good. Milk sells at eight cents per quart; butter 38 cents; eggs 40 cents; beef on foot six to seven cents.

Tuscola Co., (Aug. 10).—Beans, potatoes and corn are good crops in this locality. Apples are poor and pastures are getting dry. Wheat yields are poor, but barley and rye have been turning out well. Wheat is selling for \$2.10; oats 64 cents; barley \$1.70; milk \$2.10 for three per cent; butter 35 cents; eggs 38 cents; beef 6@9c; hogs 16½c.

Iosco Co., (Aug. 10).—Beans are very promising, but corn and potatoes are poor. Apples look well. Although no wheat has been threshed, farmers are expecting 15 to 20 bushels per acre. Rye is poor. We are getting 44 cents for cream, 36 cents for butter, 30 cents for eggs. Pastures are poor, there being no rains for six weeks until yesterday. Cows are bringing from \$60 to \$80. Early potatoes are very poor, due to the extreme dry weather.

Ottawa Co., (Aug. 10).—We have practically a perfect stand of beans, with corn and potatoes good crops. Apples are fair and pastures poor. The drought is beginning to hurt corn and potatoes. Wheat is yielding around 15 bushels; barley 28 bushels; rye 27 bushels; common rye 12 bushels. Dealers are paying \$3 for milk; butter-fat 47 cents; eggs 37 cents.

Missaukee Co., (Aug. 10).—Beans, corn, potatoes and buckwheat have suffered from dry hot weather and the grasshoppers, which are very thick. Corn will only be half a crop, also potatoes and beans. Grasshoppers have eaten 75 per cent of the buckwheat. Early apples are good; no late ones. Blackberries are drying on the bushes. Grain is only yielding fair. Butter 40 cents; eggs 38c; cream 45 cents. No live stock moving.

Marquette Co., (Aug. 10).—This township is practically in its virgin state, a few settlers and farmers. Potatoes are principal crop. Frost on June 21 severely damaged them; the yield will be about 85 per cent of the 1917 crop. Pastures are very dry in the open fields but good in the woods. A western grazer has brought 750 sheep and two cars of cattle recently to Ives Lake and intends getting 1000 more sheep. The cut-over lands near Ives Lake and Big Bay are very suitable for grazing. Farmers sell milk at 15 cents per quart; butter 45 cents; eggs 50 cents. Grade cows are worth \$80@100.

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Red Rock Wheat
A pure, winter hardy, excellent milling high yielding wheat.

MICHIGAN WINTER BARLEY

(The best northern grown Winter Barley)

ROSEN RYE
The rye that nearly doubled Michigan's acre yields and is giving exceptionally good results in many other states. Remember rye cross fertilizes so get pure seed from farmers who have produced it under inspection. For list of those having it for sale write the Secretary of the Michigan Crop Improvement Association, J. W. NICOLSON, East Lansing, Mich.

RED ROCK THE NEW WONDER WHEAT

Originated and developed at the Mich. Agri. College. A hard red bearded sort, vigorous grower, hardy. Outyields all other sorts. Superior milling and bread quality. Clean, pure field inspected seed, \$3.50 under 10 bush. \$3.25 over 10 bush. Pure **ROSEN RYE**, outyields common rye 80% at \$2.25 per bush. Bags for both wheat and rye 55 cts each.

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DUROC JERSEYS

E. D. HEYDENBERG, Wayland, Mich.

Duroc fall boars sired by Grimsen Critic T., Satisfaction and Brookwater Principal, priced right. Bred sows all sold. **M. C. TAYLOR,** Milan, Mich.

Choice Duroc Jersey Gilts For Sale.

OAREY U. EDMONDS, Hastings, Mich.

FOR Sale Reg. Duroc Jersey Sows bred for Aug. & Oct. farrow. Service boars, and open gilts Big bone, high back long kind, come and see or write for pedigree and prices, satisfaction guaranteed. **L. J. UNDERHILL,** Salem, Mich.

Duroc Jersey's—Fall boars of the large heavy boned type. Gilts bred to Junior Champion boar for June farrow, also spring pigs pairs not akin. **F. J. DRODT,** Monroe, Mich.

Duroc Jerseys for sale. Bred sows & spring pigs both sex also Shorthorn bull calves, milking strain. **CHAS. BRAY,** Okemos, Mich.

Chester Whites, spring pigs either sex, can furnish a few pairs or trios not akin from strictly big type mature stock at reasonable prices. **F. W. Alexander, Vassar, Mich.**

Crandell's Big Type O. I. C's Champion herd everywhere shown in 1917. Herd headed by five champion boars. Our sows won Senior, Junior and Grand Champion prizes at Illinois, Missouri, Ohio and Michigan 1917. Special prices on all spring pigs. Get our catalog it is free. **Crandell's Prize Hogs,** Cass City, Mich.

Duroc Jerseys spring pigs for sale. Pairs and trios not akin. Breeding and prices on request. **J. D. GRANE & SON,** Plainwell, Mich.

LAST fall gilts all sold, have a good lot of last spring Laps from 3 sires good growthy stock. Farm ½ mile west of depot. Citizens Phone 124. **OTTO B. SCHULZE,** Nashville, Mich.

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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.**

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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.**

O. I. C.'s Big type serviceable boars. Spring farrowed boar pigs. Bred gilts to farrow July and Aug. **G. P. ANDREWS,** Danville, Mich.

For Sale Bred gilts and spring pigs of Mar. and April farrow. 1 ship C. O. D. **F. C. BURGESS, R. 3, Mason, Mich.**

O. I. C.'s a few choice Apr. and May pigs either sex and 4 reg. Holstein heifers. **CLOVER LEAF STOCK FARM, Monroe, Mich.**

O. I. C.'s all sold except some fall gilts. Order O. J. THOMPSON, Rockford, Mich.

BIG TYPE POLAND CHINAS
Bred Gilts and Spring Pigs. One extra well bred Holstein Bull calf. **HILLCREST FARM, KALAMAZOO, MICH.**

A 500 lb. Gilt just one. We sold Smooth Jumbo to head Model Farm herd, Lansing, Mich. watch his smoke. This gilt is bred to him for Aug. farrow "Liberty Bell" is the best gilt in Michigan you can buy her for just \$100. Bell phone. **J. C. BUTLER,** Portland, Mich.

Large Type P. C.
Bred gilts and boars all sold nothing to offer at present. **W. E. LIVINGSTON, Parma, Mich.**

LEONARD'S Bred sows all sold, fall pigs, orders booked for spring pigs at weaning time. Shipped C. O. D. **E. R. LEONARD,** St. Louis, Mich.

L. S. P. C. all sold out, except the largest gilt raised last year, bred for June farrow. **H. O. SWARTZ, Schoolcraft, Mich.**

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

Big Type Poland Chinas. Spring pigs for sale. Healthy and growthy. From large litters. Prices right. **L. W. Barnes and Son, Byron, Mich.**

LARGE Type P. C. Just 5 choice summer gilts bred for July and August farrow. Come and see them. **W. J. HAGELESHAW, Augusta, Mich.**

Poland China Swine of all ages for sale. **R. W. MILLS, Saline, Mich.**

Big type P. C. spring pigs of the best producers in the West, priced for July at \$25 to \$35. Guaranteed to please. **C. E. GARNANT, Eaton Rapids, Mich.**

Big Type P. C. Spring boars for sale, also Hampshire shire Ram lambs. **A. A. WOOD & SON, Saline, Mich.**

Large type P. C. fall gilts up to 365 lbs. ready to ship bred for Aug. and Sept. farrow. Fall sale Nov. 22. **Wm. J. CLARKE, R. 7, Mason, Mich.**

Yorkshires For Sale. Bred gilts and sows for farrowing. **WATERMAN & WATERMAN, Ann Arbor, Mich.**

HORSES

Percherons, Holsteins, Angus, Shropshires, Durocs **DORE D. BUELL, Elmira, Michigan.**

Percheron Stallions and mares of reasonable prices; inspection invited. **F. L. KING & SON,** Charlotte, Mich.

For Sale Two Percheron stallions two Percheron mares Liberty Bonds accepted. **E. J. ALDRICH,** Tekonsha, Mich.

One pair of Registered Percheron Mares for sale. Priced right. **J. M. HICKS & SONS,** Williamston, Mich.

Two Registered Percheron Stallions one registered Percheron mare for sale. Priced right. **J. E. HOAR,** Livonia, Mich.

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At a Great Sacrifice My imported Belgian Stallion, al and other prizes. Gentle, OK every way. **HUGH KEMPHART,** Ewart, Mich.

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200 Yearling White Leghorn Hens

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40 Five Months White Leghorn Pullets
A fine lot of young pullets that should begin laying in October.

Also a few pullets: R. O. Reds; White Rocks; and S. C. Black Minorcas.

Young Cockerels
A number of cockerels: Buff and White Rocks; R. O. Reds; S. C. Black Minorcas; Anconas; S. C. and R. O. White Leghorns; S. C. Brown Leghorns.

It will be profitable to buy your next year's cock birds from this young stock. If you want to buy now, please write to us.

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

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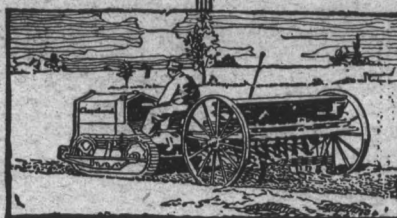
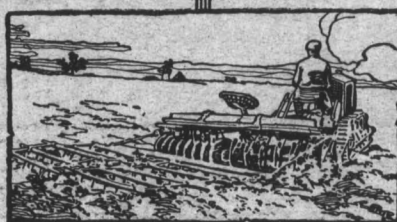
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