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## Conserving and Increasing the Food Supply

By W. MILTON KELLY

ALTHOUGH unharvested, the year's production of food crops is limited by conditions that mark the passing of August. Nothing can be done to add to the 1917 crop yields; that was possible in part last spring and the years before when seeds were selected and careful attention given to fertilizing and preparing the land, together with cultivating and caring for the crops. Growing large crops is not a matter of one year's undertaking. It is not too late, however, for the farmer to add materially in conserving and increasing our supply of food so as to minimize hardship from an apparent shortage of a few staples. The things that are immediately necessary to augment the food supply are saving the season's crops, preserving them in proper condition for food, and feeding live stock so that they shall produce every pound of food stuffs possible for the sustenance and comfort of our people. It is no time to experiment with new and untried methods and theories, but it is important that the farmer shall devote his efforts to saving his crops and the employment of such methods as are well established in his community and likely to yield the maximum of food and clothing material.

### Finish the Live Stock Before Selling.

It will pay every farmer to stop and figure before selling live stock half-fattened because grain feeds are bringing high prices. It is true that every kind of grain feed is high and the demand is likely to put prices to a level that under ordinary circumstances would make its use prohibitive, but meat prices are sure to advance in proportion, so that the farmer who has the nerve to feed out his stock is sure to come out better at the end of the season than those who sacrifice stock in a half-fitted condition. It is always good business policy to feed out good stock rather than market it at light weights. Marketing animals before they are well-conditioned robs the farmer of possible profits and the consumer of a just expectation of meat at a living price.

The 1917 crop of live stock marketed at light weights would furnish less than two-thirds as much sustenance to meat consumers as would result if it was properly conditioned. The percentage of waste is always greater in light, poorly fitted animals. We need every pound of good meat that can be added to our 1917 crop of live stock during the coming months, and the danger of prices breaking through any surplus of grain that might exist in the country will be lessened by the beneficial increase of meat which is needed for our normal consumption. In the face of present conditions it is no mark of intelligence nor patriotism for the farmer to send his stock to the market in a half-finished condition.

### Condition All Animals Before Winter.

Every effort possible should be made to maintain the quality and efficiency of breeding herds and develop young stock that is to be held over for breeding purposes. A little fat under the

growing animal's hide in the fall is worth bushels of feed later on as a protection against winter's cold. Fat can be put on now, but the calf or pig that drifts into the winter in poor flesh condition must be well sheltered and fed a great amount of concentrated feed to warm it up and keep it growing. With most young animals it is largely a matter of feeding them liberally from now until winter sets in. This is easily done and young animals started into the winter in thrifty condition defy cold and grow when others fall away. The cost of feeding is greatly reduced on breeding stock of all ages that carry fall-made fat; growth the first winter can scarcely be made without its aid. A blanket of fat made

less plans are made to preserve the dairy cow and the dairy heifer our food supply will soon find itself in distress.

In the struggle to economize of grain feeds the dairy farmer must not lose sight of the importance of having a large supply of roughage, because that means enormous quantities of grain can be used directly in human consumption while the dry cows, young stock, and work teams can be maintained more largely on the secondary products of the farm. No one can tell just how great the shortage of grain will be this year until the crops are secure or what hardship this shortage may involve, but it is every dairy farmer's duty to employ every means

products that are sure to be needed if present conditions continue for two or three years. Every healthy bull calf should be made to contribute something more than its hide to the welfare of the country. If every dairy farmer would plan to raise and fatten one or more steers it would help out wonderfully toward maintaining an adequate supply of beef, and entail no hardship to the farmer. Even the manure from the dairy herd is needed to help to make good the deficiency of fertilizer needed to grow crops until it is possible to get chemicals from the warring nations. The dairyman should mobilize his feeds, cows and young stock to build up a strong second line of defence in conserving and increasing the food supply of the country.

Never were conditions more favorable for selling scrub bulls and boars. Such animals command higher prices for beef and pork than they ever have before. There should be a heavy movement of old, low-caste, decrepit males toward the stock yards now that prices for that sort of stock are at a high level. And in their places should be taken a well-selected lot of pedigreed young males from the herds in the country that are bred in blood which has proved its value where it has been properly handled. The accepted time to cash in on scrub males is right now when they will sell for more than enough to pay for better young males to put in their places. Such a move on the part of the farmers of the corn belt would not only deplete the region of inferior males, but it would increase the supply of meat foods and mean the saving of the good blood so necessary to put the meat making and dairy business on a higher plane of efficiency.

More sheep are needed on our farms. There is world shortage of wool, and conditions are sure to become more acute as more clothing is needed for the army and navy. A few sheep on dairy and stock farms would help out more than any material increase in the number of big sheep farms. Sheep are adapted to conditions where conservation of grain and waste feeds are practiced. If the millions of acres of waste land throughout the eastern and southern states were properly fenced and the sheep protected by drastic dog laws there would be no shortage in the meat supply of today.

Even the little farm hen must contribute to the country's food supply. Feed the young pullets and molting-hens enough grain to keep them thrifty until winter comes. Give the flock plenty of grain feed and good care from now until winter sets in so that they will begin the winter in condition to pay a profit. Large poultry farms have sold their laying stock down so close that the bulk of eggs and fowls must come from the farm flocks. Practice rigid culling, keep every hen that is worth feeding another winter. Fatten old hens, inferior pullets and surplus males so that they will go on the market in good condition to bring satisfaction.

(Continued on page 194).



Plowing Stubble Ground for Wheat Should be Done as Early as Possible.

during the mildly cool fall days when the system readily makes fat out of feed if it has the opportunity will prove a mighty aid in cutting down the amount of feed needed as the winter advances.

### Save the Dairy Cows.

Dairy farmers can perform valuable service by increasing their output of products during the coming months. In preparing to meet the impending food shortage, it is just as important to make provision for an adequate supply of milk, butter and cheese as for breadstuffs. The dairy herds of the country must be preserved. Our earnest prayer is that dairy cattle shall not be slaughtered promiscuously for beef, for there is no other animal that can convert the roughage from farms into such nourishing and necessary foods and do it so economically. Un-

possible to economize on grain feeds. The silo lends itself admirably to any scheme that involves the conservation of the roughage supply. More silos should be erected and every ton of good roughage preserved in condition fit for dairy cows to convert into human food.

### "Second Line Defenses."

The feeding of by-products will not only pay immediate profit, but it will help to increase the total food supply. In these days of food shortage it may pay to economize somewhat in feeding some of the less profitable cows, but the best cows must be fed some grain to keep up profitable milk yields. The cows that fail to respond to good care and liberal feeding should be put in condition for market. Every promising heifer calf should be raised to help maintain the supply of milk and its



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## CURRENT COMMENT.

**Marketing the 1917 Wheat Crop.** The committee appointed by President Wilson to fix a fair price for the 1917 wheat crop, the personnel of which was given in a recent issue, has named a price of \$2.20 per bushel at Chicago for No. 1 northern wheat. The price differentials worked out by the food administration on this basic price are as follows:

No. 1 dark hard winter, \$2.24; hard winter basic, \$2.20; red winter basic, \$2.20; yellow hard winter, \$2.16; soft red winter, \$2.18; dark northern spring \$2.24; red spring, \$2.18; humpback, \$2.10; amber durum, \$2.24; durum basic, \$2.20; red durum, \$2.13; red walla, \$2.13; hard white basic, \$2.20; soft white, \$2.18; white club, \$2.16.

No. 2 of each grade is three cents less; No. 3, six cents less; No. 4, ten cents less.

Relative market basis: Chicago, Galveston, New Orleans, basic; Kansas City and Omaha, five cents less than basic; Duluth and Minneapolis, three cents less; St. Louis, two cents; New York, ten cents more than basic; Baltimore and Philadelphia, nine cents more; Buffalo, five cents more.

The basic grades are No. 1 hard winter, red winter and northern spring.

The naming of this price was the result of a compromise among the committee membership after taking into consideration every phase of the situation from the standpoint of the best interests of the country at large. While this price is undoubtedly lower than was desired and expected by the farmers of some of the great wheat growing states, yet it will undoubtedly enable most wheat growers to make a reasonable profit above the cost of production, and through the administrative plans which have been made for the elimination of speculation and the holding of all handlers of wheat and wheat products down to a legitimate profit basis, it will also reduce the cost of the prime necessity, bread, to the people of the whole country.

The organization completed by the Food Administration for the control of the wheat market, as explained by Administrator Hoover to the farm paper editors at Chicago last week, is de-

signed to give the ultimate consumer the cheapest possible bread at the basic grain price fixed by the committee upon which all interests and all sections of the country had a fair representation. Briefly this plan is as follows: A \$50,000,000 corporation, of which the government owns all the stock, has been formed for the purpose of purchasing wheat for government use and for export. Elevators will be licensed and required to move all privately owned wheat within thirty days of its purchase. Millers in agreement with the Food Administration will be allowed a profit of twenty-five cents per barrel on flour and fifty cents per ton profit on feed manufactured from the wheat milled. This profit will be figured after deducting the actual cost of milling, not including interest charges or depreciation.

Growers will not be required to sell their wheat unless they so desire, but the probability that the government corporation will purchase all wheat and distribute same to millers on a basis of their previous output will make it certain that the price established by the committee will be maintained through the entire year. Thus, every farmer in the country will be able to figure accurately on what his wheat crop will bring and will be able to market it at the most convenient season. There will be no incentive to hold the grain for speculative purposes, since there is no doubt that the administrative plan of level price maintenance will be sustained through the organization which has been perfected for the purpose.

It was estimated by the price fixing committee that a fourteen-ounce loaf of bread could be retailed at five cents with wheat at the price named. All things considered, the action of the price fixing committee should be received with satisfaction by the farmers of the country as eminently fair to both producers and consumers. This action should be accepted as an auspicious beginning of food administration in the United States.

### More Live Stock Needed.

In his discussion of the nation's food problem at the meeting of farm paper editors recently held in Chicago, Food Administrator Hoover emphasized the fact that in their own interest and in the interest of the nation, producers must turn the face of our agriculture toward increased production of animal foods and ultimately decrease our exports of bread and fodder grain.

The plans adopted by the Food Administration as published in our last issue for the mobilization of the live stock of the country merit the careful consideration of every farmer. It is exceedingly poor policy for any farmer to sacrifice his breeding animals, even at the extraordinarily high price now prevailing, with the idea of turning permanent attention toward the growing of wheat and other cash crops because these crops give the temporary promise of yielding a greater profit than their live stock has done, even at the enhanced values for live stock and live stock products which have prevailed during recent months.

While the rehabilitation of the agriculture of European belligerents must of necessity be gradual, it will naturally be directed toward the production of grain food crops immediately after the war. This will be true not alone because of the fact that more human food can be produced by this means from a given area in the form of grains than is possible in the form of animal foods, but as well because of the great depletion and in some sections near annihilation of the breeding herds and flocks of those countries, which it will take years of time to overcome.

While there will undoubtedly be a continued active demand for food stuffs of all kinds following the close of the war, this demand will be most keen in the line of animal foods, including all

kinds of meats, provisions and dairy products. The great bulk of these animal food products for which there will be such a world demand after the war must be produced upon American farms, hence the wisdom of preparing to meet and profit by this unprecedented condition.

While the production of grain foods is being greatly stimulated in this country, the production of animal foods is being discouraged because of the exceedingly high cost of grain feeds and other factors well appreciated by every reader. It is time for every farmer to pause for most careful thought upon this question before further reducing his supply of breeding animals of whatever description. Dairymen who have become discouraged at the prospect, and who sacrificed their dairy herds because of this temporary discouragement will be making a mistake which is not easy of reparation. Conservation of valuable breeding animals should be practiced upon every farm, and in every case where this course can be followed, the number of such animals should be increased to the practical limit.

Through the administration's plan published in the last issue, the needs of farmers who cannot secure the desired additions to their breeding stock from local sources can get same from distant markets at the bare cost of purchase and transportation and without profit to intermediate dealers in handling them. If there is an opportunity to economically increase the live stock maintained upon his farm, the reader should at once get in touch with the county agent in his county and place an order for such animals as he may need, to be supplied through the channels enlisted in this service by the National Food Administration. There is room for more cattle and more sheep upon thousands of Michigan farms. Their possession will unquestionably add to the future prosperity of the owners of these farms, and prove a valuable asset to the nation.

Not until this great war had been in progress for nearly three years was there general appreciation of the vital role of animal foods in the human diet. But with their importance so thoroughly demonstrated, the farmers of Michigan and the country should be prepared to aid in satisfying the unprecedented demand for animal foods which will unquestionably prevail, not alone during the war, but for a long period following the cessation of hostilities.

### Food Administration.

The necessity for national food administration, the objects sought by those in charge of food administration and the methods by which an effort will be made to secure those results, have a very important relation to the agriculture of the country, and are thus of the greatest interest to the farmers of the country.

Because of the need of a more correct and full understanding of these points by the great army of producers of food stuffs in the United States, Food Administrator Hoover called a meeting of the editors and publishers of agricultural papers in Chicago on August 25 for the purpose of addressing them upon these related subjects. The text of his address has been released for publication, and will be reproduced in full in our issue of next week.

Something of the methods which will be followed by the National Food Administration in relation to the marketing and distribution of the wheat crop are given in another column of this issue. This phase of food administration was more fully discussed in Mr. Hoover's talk, and will be of great interest to Michigan Farmer readers, as will also his observations and opinions touching other problems of food production as well as food administration.

## HAPPENINGS OF THE WEEK.

## Foreign.

**The European War.**—On Tuesday of last week President Wilson addressed Pope Benedict in answer to the latter's proposed peace plan. The position of the President is that the Allies cannot take the word of the present rulers of Germany as a guarantee of anything that can endure. He reiterated his former statement that the present rulers of Germany must go and that peace will be made with the German people. England has taken the same stand by endorsing the reply of the President. Reports would show that the influence of the answer on public sentiment in Russia has worked great changes in the attitude of the people there toward the Central Powers and now it appears that there is more hope for the successful reorganization of the Russian troops into an efficient fighting force that promises to hold out until the enemy has been defeated. Russian internal conditions have further improved through the effect of the conference of provincial and party representatives at Moscow last week which, while it did not arrive at any definite program, made known to the world the desires and views of the delegates and showed that the different states and provinces were supporting the present provisional government.—On the eastern front the Austro-German troops have made further advances in eastern Roumania and appear to be massing their forces for a drive on Riga as mentioned last week. The resistance of the Russians, however, has prevented the infantry from making any headway and has obliged the navy to attempt an attack on Riga from the gulf. Unusual activity of enemy aeroplanes over the sea, and a large number of bombs dropped on ships, is taken as proof of the enemy's intention in this quarter.—The Italians have won a victory over the Austrians. Strongly fortified positions on the plateau northeast of Gorizia and to the south along the Carso lines have been wrested from the defenders and compelled the retirement of the Austrians on the whole front. The casualties have been heavy and the number of prisoners taken by the Italians very large.—On the western front continuous rains have obliged the Allies to take a recess in their recent successful efforts at Verdun, Campaigne, St. Quentin, Flanders and on the Belgian frontier.—The British forces in Palestine attacked the enemy southwest of Gaza and advanced their lines.—During the month the total of British casualties have amounted to 59,811 persons.

By promising to pay an indemnity to Argentine for ships lost in the submarine campaign conducted by Germany, and also to modify her blockade of enemy coasts in favor of the South American country's shipping, Germany has again satisfied the officials of the southern country and the strained relations are relieved once more.

The Uruguayan commission revising the constitution of that country have introduced a clause providing for the separation of the church and the state.

A late report indicates that considerable numbers of German cripples are being recalled to arms. The matter was up for discussion in the German Reichstag recently.

A Belgian commission is now in this country attending to matters of importance to their government and people.

The Greek armies will be in the trenches by December 1.

As the result of an explosion, three factories were burned in Petrograd, in which 120 persons were killed or injured, and large property losses were entailed.

## National.

The People's Council, a pacifist organization, is having much trouble in finding a town or city in which they will be allowed to hold their sessions, having been obliged to give up meeting at several different places in the central west, and after searching a week being unable to find a municipality that would receive and protect them.

The treasury department has announced tentatively that the next liberty loan bonds for three billion dollars will be offered about October 1.

Fires are raging in Oregon, Montana and Idaho. In western Montana it is reported that one conflagration was sweeping forward along a front extending forty miles.

It is estimated that fully 2,000 missionaries and 700,000 converts have been interned in Africa, India and Japan as an indirect result of the present world war.

Negotiations are under way for the transfer to the United States of seventy-six Dutch vessels for the carrying of food from this country to the Belgians.



# The Possibilities of Wheat Production

By N. A. CLAPP

THE attention of the people of the United States is being directed toward the wheat crop of 1918. The United States government has asked the farmers of this country to produce a billion bushels of wheat next year, and before the wheat of the present season's crop was harvested and threshed, plans were being laid for a bumper wheat crop in 1918. The intense interest on the part of the farmers in next year's wheat crop comes from several causes; the possibilities of the profits on the crop, a desire to learn all that is within their reach in regard to wheat production, as knowledge of that kind can be utilized during their whole lifetime, and a true spirit of patriotism—a love for their country and a desire to aid in this world conflict and aid in securing for humanity throughout the civilized world the blessings of liberty.

It has been the custom in the past when an increase in production is desired to increase the area, using the old-time methods in preparing the seed bed and selecting the seed. At the present time those who study for best methods in preparing the soil, seek to meet the needs of the crop under their conditions in supplying the necessary fertilizers, and secure the best yielding varieties of wheat for seed and put that seed in the best possible condition, sow it at the proper time, in the proper manner, are working by the surest and best plan to aid the government in meeting the needs of the people in our own country and aiding the allies in Europe.

To follow the plans mapped out this year may be an impossibility at this late date, but some hints made at this time may be carried in mind and be of value in coming years. There will be an active demand for food for the years that are to come in the near future.

## Preparing the Seed Bed.

We have learned that the wheat plant in order to thrive, get a good foothold and be ready for winter and in the coming spring develop in a manner which will enable it to reproduce abundantly, must have the plant food at hand for its immediate use at the time when the seed is sown. There is a period of from six to eight weeks from seeding time to winter. In order to meet the needs of the young plants the plant food needed just at that time must be in an available form for immediate use. The plant food in the soil which comes from the decaying vegetable matter in the soil, can be made available by plowing early and working frequently. It requires time for the vegetable matter in the soil to decay, but working the soil frequently helps to hasten the rotting process, and at the same time releases the mineral elements in the soil, and makes the rapid growth of the young plants possible. Here will be seen the advantage of the summer fallow.

Another method of supplying the needs of the young plants is by the use of commercial fertilizers. If commercial fertilizers are to be used, the thorough preparation of the seed bed ought not to be neglected. The commercial fertilizers should be used to supply what is supposed to be lacking in the soil. What the young plants need at first is nitrogen to stimulate the growth, and if legumes have been recently grown on the ground there will be an abundance of nitrogen at hand. If we must depend on commercial nitrate of soda, we are confronted with the fact that the prices have advanced from \$50 to \$100 per ton, which is certainly an expensive way of securing nitrogen.

## The Two Ways Before Us.

In seeking to increase the possibilities of wheat production, there are two

avenues open before us; buying commercial fertilizers, or by the use of legumes manufacture the necessary plant foods in the soil. Germany has doubled her average yield of wheat by the expensive method; she has used six times as much commercial fertilizers as has the United States, and it has taken fifty years to accomplish the results. By the extravagant use of commercial fertilizers she has brought her average yield per acre to about thirty-one bushels, while little Denmark, with less flourish of trumpets, has secured the remarkable average yield of forty-four bushels per acre.

With our present knowledge of what can be accomplished by the use of legumes, we have the material in hand with which we can secure great results. We know that if we will keep the land sweet by the liberal use of lime, we can grow the alfalfa and the clovers, and while we are using the forage from those crops as feed for the various kinds of live stock, and returning the manure to the land, we have the means which will enable us to secure a rank growth of grain crops.

The element which may be lacking in some cases to secure the plump kernels of wheat, is phosphoric acid. The phosphoric acid should be present at

If we follow the plan of raising legumes and applying barnyard manures alone, similar conditions may prevail in our wheat fields—a rank growth of straw on which is produced shrunken grain. The remedy lies in the use of such material as will supply the needed phosphoric acid.

Acid phosphate or treated ground phosphate rock is one of the main sources from which we have been securing phosphoric acid. At the present time conditions are such as make it difficult to secure a sufficient supply of treated rock. Dr. Cyril G. Hopkins, of Illinois University, says that if finely ground raw phosphate rock is applied on land where legumes are growing or to manure spread upon the soil and the crop, and manure is plowed under, the nitric acid, generated during the process of fermentation and decay of the vegetable matter, will act upon the raw rock and make the phosphoric acid available for the growing crops.

If the amount of acid phosphate and ground bone meal is not sufficient to meet the demands of grain growers, ground raw rock can be used as we have suggested. If eight or ten tons of stable manure is applied to each acre, forty or fifty pounds of the raw rock mixed with each load of the ma-

the moderate sized kernel if it carries within it the ancestral characteristic of prolificacy, will leave within the stool the spreading habit, and several stalks will be sent up, and consequently several heads of wheat will be produced from one kernel.

The real value of well-bred seed is rarely appreciated, and yet there is as much difference between a well-bred variety of wheat that has within it the right characteristics, and the common sorts, as there is between a well-bred calf of the Shorthorn, Hereford and Angus breeds and a common, neglected scrub. The scrub may be given good food and be surrounded with ideal conditions and will only make a well-fed scrub, while the pure-bred calf under the same conditions will consume the food and develop into a noble animal, making good returns for the feed consumed. The common wheat sown in rich soil will only give moderate returns, while the seed of the pure-bred varieties has within it the vital energy which enables it to reach down deep into the soil and utilize the plant foods within reach, make a rank growth and yield heavily of grain at harvest time.

## The Amount of Seed to Sow.

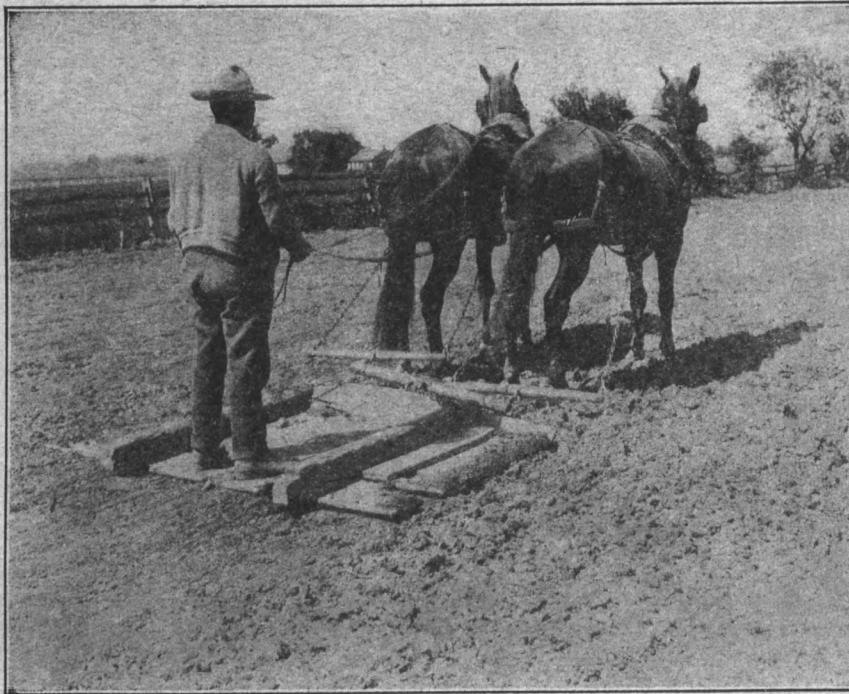
The amount of seed usually sown to the acre, is generally in excess of what is needed. The man who sows two bushels of wheat to the acre I think makes a mistake. An excessive amount of seed means crowding too many stalks in a given space, which means short heads and a diminishing of the yield. Give the wheat plant a chance to spread itself, I think is good advice. I was once asked by a farmer who believed in clover wheat and sheep, to assist in measuring a field from which he had just threshed 784 bushels of wheat. We found that there was fourteen acres in the field, which gave an average of fifty-six bushels per acre. The field had been summer fallowed and five pecks of seed were sown to the acre.

As a rule, less seed is required to secure a good stand early in the seeding season than should be sown later. If five pecks of seed is used at the beginning of the seeding season, six or seven pecks of seed may be used near the end of the season.

## Future Possibilities Predicted.

During the last thirty-five years prices for wheat have been too low to awaken much interest in wheat raising except on an extensive scale. Farmers have used wheat as a crop in the rotation, as a ready cash crop, and as a producer of straw with which to bed live stock. As a rule the wheat crop has been greatly neglected until the general average yield has drifted to a low figure. The average yield of wheat per acre for the whole United States is around sixteen bushels.

With prices raised and guaranteed at a point where wheat growing can be made a profitable business, it is safe to predict that farmers can be instructed in the art of preparing the ground by enriching and working and packing it well, selecting the best varieties of seed, sowing the right amount at the proper time and in the proper manner, and the average yield for the whole country raised during the next five years to considerably above twenty bushels per acre. If the concentrated effort on the crop should be continued for another five years it is reasonable to expect that the general average will be raised to thirty bushels per acre, and if at that time the government were to say to the farmers of the country, "sow 50,000,000 acres to wheat," we might look for 1,500,000,000 bushels, a sufficient amount to permit us to retain 750,000 bushels for home consumption and have the same amount to sell for export.



The Home-made Planker will Help to Reduce Refractory Soils.

all stages of growth. The plants take it up while growing, and it is stored in the leaves and stalks; but when the process of reproduction or formation of seeds begins, the phosphoric acid is drawn upon, and the seeds are formed. I have in mind a case which will illustrate this point.

## A Practical Illustration.

During the summer and fall of 1916 a near neighbor had hens in coops in the yard and garden. The hens were fed wheat screenings. A stool of wheat came up in the fall and during the present summer made a very rank growth. It was watched with much interest as it sent up many stalks. At harvest time thirty-nine heads of wheat were gathered and shelled. The aggregate number of kernels was 1,262. There were ninety-five imperfect kernels, leaving 1,167 kernels as the product from one kernel. Many of the kernels are shrunken, showing that there was a sufficient amount of nitrogen to stimulate the growth, and potash enough to stiffen the stalks and enable them to stand up, but there was not enough phosphoric acid in the ground within reach of the roots at the time the plant was growing to enable it to produce plump kernels.

nure will balance up the supply of plant foods. The amount of manure suggested may seem like a light application, but it contains more nitrogen and potash than three tons of what we call a modern, complete fertilizer. And what should be considered farther, is the fact that there will remain in the ground a sufficient amount of plant food to make the influence of the application of the manure readily seen for two or more years; especially will it be seen if clovers follow the wheat crop.

## Seed Selection.

The kind of wheat sown has much to do with the yield per acre. The variety which has the characteristics of hardness, standing up well though the growth be rank, tillers out or sends up many stalks from each stool, should be given the preference, for many well filled heads means much wheat. The characteristic of productiveness is inherent—it goes along with the breed. Too much stress has been laid in the past on large kernels, with but little regard to the capability of productiveness. The kernel feeds the young wheat plant while it is small, and if the kernel is large, it may give it a vigorous growth while yet young, but



### CONSERVING AND INCREASING THE FOOD SUPPLY.

(Continued from first page).

isfactory prices. The country is short of good poultry meat and there is always a loss in marketing immature, poorly conditioned fowls. Breeders of ducks, geese and turkeys should do their part in maintaining the poultry industry on a war-footing.

Every farmer should make a special effort to gather and store all the fruit and vegetable crops his farm produces. The waste of food crops at this time of need is nothing short of criminal. Early fruits that do not find a ready sale may be put up in cans, glasses and jars, and late fruits put into storage. Thin-skinned vegetables, like potatoes, keep best when stored in a

more, there is nothing more conducive to the entire family's sense of thrift and independence than to furnish a material part of the food supply from the farm, not merely for a few months, but for the entire year.

## Stinking Smut of Wheat

By PROF. G. H. COONS

WHEAT Day at the College was a notable event. Hundreds of farmers who were sincerely interested in growing the best possible wheat crop in 1918 were at hand listening interestedly to the facts that the various experts had to give.

Nearly every speaker told of the necessity of seed treatment to insure a clean crop. Mr. H. H. Goeman, introduced as one of the great grain buyers who handled a large per cent of Mich-

The cause of all this loss is a parasitic plant—an enemy of the wheat. The smut plant is too small to be seen except with a microscope and it lives within the wheat plant, sending its invisible threads throughout the wheat. The stinking brown-black powder produced in the kernel is the reproductive form of this parasite. The powder consists of microscopic balls called spores, which are the "seeds" of the smut.

At threshing time—either from the farmer's own grain or from his neighbor's—for the threshing machine carries smut just as it carries weeds—smut spores are dusted upon the wheat. Here they cling and when the wheat is planted the smut spores sprout with the sprouting grain and infect it.

Once the smut is within the grain it grows with the wheat keeping pace with its progress.

There is more smut during some years than others. When the weather is such that the wheat does not start quickly and make a vigorous growth, more wheat is infected than in seasons when the wheat comes up quickly and makes a strong sturdy growth.

Since the grain carries the infectious spores on the outside and since where rotation is practiced soil infestation is not a factor, the disease is readily controlled by a simple seed disinfection.

Every farmer is familiar with the treatment of wheat with formaldehyde. Under this treatment he cleaned his grain, and then sprinkled it thoroughly with water to which formaldehyde had been added, (one pint to forty gallons of water). The grain was shoveled during the sprinkling to insure thorough wetting. It was then put into a heap and covered from two to four hours, then spread out to dry. Since the grain comes from the treatment slightly swollen, some allowance must be made for this in setting the drill.

This treatment works perfectly. It is cheap, simple and easy. Coming at a busy time, many farmers have disliked to wait for the grain to dry and the swollen grain sometimes drills meanly.

Fortunately in this emergency an im-

The treatment consists in spraying the grain with concentrated formaldehyde instead of sprinkling with dilute formaldehyde. One pint is used for fifty bushels of grain. For smaller amounts corresponding quantities of formaldehyde are taken. The grain is spread in a long pile and the formaldehyde sprayed on the grain as it is shoveled over and over. The grain is turned over and over just as concrete is mixed. It is then covered with a canvas for four hours—no longer—and is then spread for a thorough airing. With wheat this is very essential.

This same treatment is excellent for rye and oats. It has been pushed extensively with oats by the county men and it has taken well with the farmers. Its cheapness, simplicity and avoidance of delays makes it extremely popular.

There would seem now no excuse for failure to treat grain. One pint of formaldehyde which will cost about forty to forty-five cents, will treat fifty bushels. Two men can treat fifty bushels in about half an hour.

### HARVESTING ONIONS.

Onions must be properly matured, harvested and cured before they are ready for successful winter storage. August and September are the harvesting months and crops grown from early sowings should now show signs of maturity. These become apparent in a weakening and shriveling of the neck above the bulb, and a yellow color of the tops. Bulbs to be stored should become fully ripe before pulling. The tops should be dead and the outer skin of the bulbs dry.

There are usually some scullions, or those with thick necks, which still remain green. These do not make suitable bulbs for storing. If they can be matured, it will be by pulling and giving the necks an opportunity to dry down.

As a rule it pays to pull the entire crop when the larger portion of the tops have become dead. Delay in harvesting sometimes results in a second growth which injures the bulbs for storage purposes. The bulbs, after pulling, may be entirely dried or cured in the garden or field. If the weather is moist, however, the bulbs when partially cured, may be removed to a well ventilated house or shed, where they should be kept for several weeks. They should not be put into winter storage



Shoveling the Wheat as it is Sprayed with Formaldehyde.

dark, cool cellar. Apples, grapes and winter pears keep best when put in boxes or barrels after being well sorted and wrapped in fine paper. Squashes and pumpkins keep best stored in a dry place where there is no danger of freezing. Carrots, beets and turnips may be packed in boxes and covered with a layer of sand. They will provide a highly palatable variety in the winter when you bring them fresh from the boxes in the cellar. If the temperature of the cellar is kept at about forty degrees fruit and vegetable crops will keep well. All crops put into storage should be carefully handled, as bruised specimens do not keep well.

All of the arguments for having a vegetable garden to cut down the high cost of living and contribute to the country's welfare may be advanced with even greater force and reason in favor of carrying the supply right on through the winter until it is time to start the garden for another year. Of course, the canning factories put up many sorts of vegetables in excellent ways, but they cannot control the time of gathering and canning—two factors that are very essential in having vegetables in the winter that compare favorably with the fresh supply during the summer.

Farm women will find abundant opportunity to render valuable and timely service by helping conserve the food crops for winter use. Canning houses throughout the country have notified wholesalers that their deliveries will be far below normal. Tin plate has doubled in price, which means that empty cans cost more. Glass, too, has gone up in price. So that now when every day counts the prudent housewife should be putting up everything she has room for in cans, glasses, jars and crocks. She will have no trouble in finding good markets for all the surplus she may have. Even young children, with bottled-up energies, can help in gathering fruits and vegetables for mothers and big sisters to put up for the winter. Such work will not only give them better ideas of thrift and economy, but it will make better men and women of them. Further-

Michigan's crop, stated emphatically that Michigan must plan a systematic treatment of wheat. "Michigan wheat is notorious because of the stinking smut it contains. It is hard to get hold of a clean carload."

The effect of this is evident. Much of our grain is "bran wheat" instead of bread wheat. Buyers distrust even our best grades. The expense of cleaning the wheat is naturally taken from the price paid the farmer.

#### Losses from Smut.

Conservative estimate places the loss in yield from stinking smut of wheat at five per cent of the total Michigan crop. I have been in a great many fields where by actual count the loss was ten per cent or greater, and in most cases the owner did not know of it. I was in one forty-acre field where out of thirty-two heads only eleven were sound, all the rest were smutted. The stand of wheat in that field was such as to warrant a thirty bushel yield. The loss to that farmer was from \$1,200 to \$1,500. Great as these losses have been in the past, the farmer is going to have the stinking smut loss brought home to him even more strongly.

Under the new grain standardization law all wheat is inspected by licensed inspectors who are required to dock wheat for the bulk occupied by the stinking smut kernels, and to add a fixed dockage for the expenses of cleaning smutty wheat. H. H. Goeman is authority for the estimate that this dockage will amount to at least fifteen cents a bushel on wheat showing smut. Coupling this statement with the one that Michigan wheat is almost uniformly smutty, it is seen that we stand to lose enormously. Our wheat is to be discriminated against in the market.

In the good old days the elevator man could put the smutty wheat in with the fairly clean grain and the whole thing passed as an ordinary Michigan product. But now smutty wheat in a carload will bring about dockage of the whole load. The grain inspectors are licensed officials who stand liable to lose their positions for faulty grading. Our grain will get no favors, only what it merits.



After Spraying with Formaldehyde, Cover the Grain Four Hours—No Longer.

provement of the old method has been discovered which makes the treatment of seed wheat so simple that there is now no excuse for any farmer omitting the treatment.

This improvement was discovered by R. J. Haskell, of Cornell University, and has been tested for three years in New York. Last year County Agent H. G. Smith, having learned of the treatment from the Cornell Extension Department, advised its use for the farmers in his county and it was tried there by many with excellent success.

until perfectly dry. The tops should rattle and crackle when handling.

Do not attempt to store soft and immature bulbs, and bulbs with thick necks. Use these or sell them at once because they do not keep well. Before storing, it is customary to remove a part of the top. When topping, leave at least an inch of the stem above the bulb. Bulbs which have been topped too close will sprout and become a loss. Handle carefully to avoid bruising and store in a cool, dry, well ventilated place.

R. E. LOREE.



# Harvesting the Apple Crop

WAR conditions confront the apple growers, for there is a scarcity of pickers, and careful preparations must now be made to see that this crop is all safely harvested and put into storage. Now is the time to begin organizing picking crews in every apple-growing section. A survey of the situation shows that the farmer will need co-operation from business men in the towns and cities round about at which he trades and which have just as great an interest in this crop as the farmer himself. This is emergency organization work to be taken up immediately by chambers of commerce, boards of trade, state and county councils of defense, and business men generally. People who have never regarded themselves as apple pickers may this year be asked to go to the orchards and help get in the crop for patriotic reasons.

### Pickers from New Sources.

The organization work should take the form of an immediate survey of labor resources to see where a picking force is to be recruited. Stores and factories can often release clerks and workmen for this service if notified in time. Families who would like a week or two of vacation in the country, with light, healthy outdoor work at satisfactory wages, may also be induced to join the picking army. It has been suggested that the schools might be opened later this year so that boys and girls can be sent to the orchards, but this will not be necessary in all cases. One very good source of pickers can be found among the women's organizations of this country, which are all keenly interested in helping in any practical patriotic work.

Much is heard about the scarcity of labor, but there is not as great a scarcity as most people imagine. Workers upon whom the farmer depends in ordinary times have simply been shifted into other occupations, and war conditions demand that business men step in, locate other classes of workers who can be shifted to the orchards for this emergency and see that the farmer has plenty of help.

### Some Instruction Necessary.

The principles of careful fruit picking are very simple, and easily understood. If the farmer can start with two or three experienced pickers and spend a little time explaining good picking methods to his volunteers he should get excellent results, for these volunteers, while new to the work, will also be people of good average intelligence, and the war emergency will appeal to their interest so that they will be more than ready to help harvest the crop skillfully.

Apple growers are advised to get in touch with the business organizations in their nearest town, ask that help be given in securing pickers and report the number of pickers needed by themselves. One of the greatest difficulties in organizing harvest hands for any crop is that of gathering accurate information as to how many helpers are needed on each farm and in each township. For lack of such information it very often happens that one township will be handicapped because it is without sufficient helpers and a township twenty-five or thirty miles away will have a surplus of workers. By ascertaining in advance just how many workers will be needed in each locality, business organizations will be able to recruit a sufficient force and there will be neither scarcity nor surplus in any section.

### Care of Crop After Picking.

This year's apple crop calls for special methods of handling. The size of the crop makes it necessary to send only the first-class fruit to market and to see that all seconds and culls are sold in bulk around home or worked up into by-products. There must be great care to see that apples are not exposed to the heat or outdoors after

picking, but are carefully cooled. The scarcity of pickers will probably make it necessary to pick and house the crop first and grade and pack it afterwards. Full directions for handling the fruit will be published later.

The great big task immediately ahead is that of securing a picking force and in this work the business man and the farmer are co-operating to an extent never known before. This is a war crop. It will be harvested with a war organization.

### SPECIMEN FRUITS AND VEGETABLES.

For the real estate office, the bank lobby, the restaurant window, it is often desirable to have on hand in permanent form an exhibit of fruits or vegetables in glass jars. In this case one will wish to preserve the natural form and color, and will not hesitate to use preservatives which would make the food unfit for eating, if he can thereby prevent decay and loss in appearance. The following suggestions, based on considerable work of this kind by the writer, may be of use to those wishing to process some specimens for display purposes.

The most attractive fruits and vegetables to use, as a rule, are those of a yellow or white color because they show up well, while in spite of all we can do, reds and darker shades leak their juices into the preserving solution, and so make an undistinguishable mass of the contents of the jar. The most reliable preservative for yellow or white products, such as sweet corn, string beans, Bartlett pears, Yellow Egg plums, celery, etc., is sulphurous acid. This is a bleaching agent, and a preservative as well. Use one part of the acid to nine parts of water. Place the specimens in the jar, and cover with this solution. Before placing the cover on, add enough kerosene oil on top to cover the surface about an eighth of an inch. This last will prevent the formation of molds, which sometimes gather on the surface.

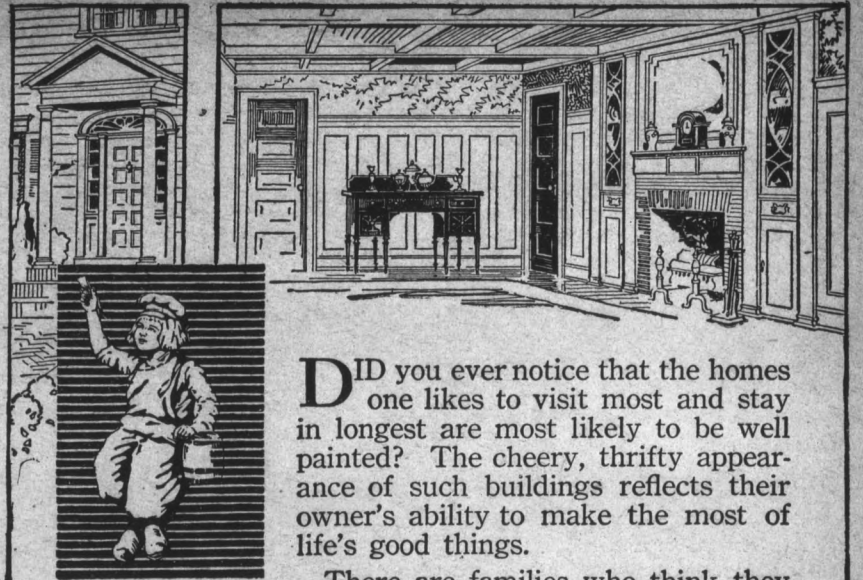
Besides preserving from decay, and holding the color, one must prevent cracking of the skin of the fruit, which will take place in the case of plums, pears, etc., unless the water is thickened. Glycerine is commonly used to give density to the solution. Half a pint is about the right quantity for a six-quart jar, but some experimenting will be necessary to determine this point, the object being to bring the density of the preservative to the same point as that of the fruit juice. If too much glycerine is added, the fruit will shrivel up.

While yellow and white products are safe in the sulphurous acid, there are other combinations which are uniformly certain in their results. Green peas, cucumbers, gooseberries, may be preserved in formaldehyde with a pinch of blue vitriol dissolved in addition to deepen the color, if desired. Use a four per cent solution of formaldehyde, or one part of commercial formalin to ten of water. Formaldehyde, without the addition of blue vitriol as in the case of green products, will also hold the purple in plums and grapes. Care should be taken not to rub off the waxy bloom on these two fruits, as the skin has a more natural appearance with it on.

Red raspberries keep well in boric acid. Make as strong a solution as possible, and pour it over the berries after they are in the jar. They will tend to shrivel and leak their juice, however, and will not last as long as the products with a heavier body.

A more pleasing effect can usually be obtained with fruits on the branch than in the bulk. Most of the leaves should be trimmed off. The specimens should be underripe, so as to hold their shape, and remain in place on the branch.

E. H. BROWN.



**D**ID you ever notice that the homes one likes to visit most and stay in longest are most likely to be well painted? The cheery, thrifty appearance of such buildings reflects their owner's ability to make the most of life's good things.

There are families who think they have inherited gloomy dispositions. If they would only put new paint on their buildings it would help a lot to change their outlook on life.

## Dutch Boy White-Lead

mixed with pure linseed oil, in its own pure white or tinted any color, is a paint which adds beauty to cottage or mansion. For outside use, such paint gives long lasting protection against all the attacks of weather.

Indoors, the walls and woodwork painted in simple soft tints with Dutch Boy white-lead and a flattening oil, give a feeling of roominess and lightness which cheer all occupants. All effects are easily obtainable from the deep, brilliant tones to the dull, velvety harmonies. These painted surfaces are always washable and therefore can be kept in their original freshness.

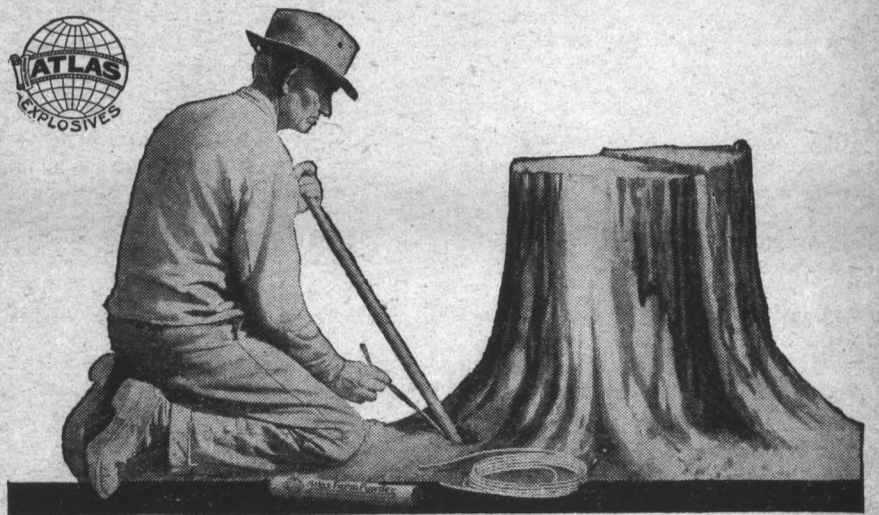
### Dutch Boy Red-Lead

To make the most of the metal about the place, the railing, gutters, roofing, implements and machinery, means keeping away rust. This is most surely done by painting with Dutch Boy red-lead.

For color schemes for inside and outside painting and for much useful paint information write for Paint Points No. 96.

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For Winter Production in the Dairy

THERE is a shortage in the production of milk and cream, and prices of butter in the market tell very plainly of a limited supply of that product.

The writer has more or less shadowy memories of the period following the war of the rebellion, and he can recall that in those days butter brought forty cents a pound. However, that price did not represent gold, but rather it was paid in greenbacks which sustained a varying relation to gold depending upon a number of causes which may not be discussed here.

The month of June gave us the best of pastures, very liberal yields of milk, and at our creamery butter-fat from cream grading No. 1 brought 45.8 cents per pound. I do not recall a single year in our history in which butter has brought as high a price as in the last few months.

"The end is not yet." Most feeds are much higher in price relatively speaking, than butter. Who has ever seen corn and oats, ground, selling at \$4.50 per hundred? With such prevailing high prices for nearly all kinds of feed, the production of milk or butter at anything like a reasonable profit is a big problem.

Feeds will Remain High.

Feeds are not going to be much cheaper next year. The coming autumn will perhaps see a falling off in prices of some feeds, but this will not last, and I am willing to risk my reputation as a guesser by predicting that feeds will be higher next spring than they were last spring.

Consumers will need our butter and cream and milk just as badly as they do now. Production is going to fall off because only now and then a man has the courage to purchase feed when the price is so very high and the cows are not going to do any better than usual on short rations.

The question is, "What can we do about it? Is there any way in which we can keep the cows giving a normal flow of milk at an expense which is warranted by the prices at which we must dispose of our products?"

I want to offer a few suggestions relating to this matter and trust that some reader may find in them something worth his time at least.

Hay is still the cheapest form of dairy feed to be had. It is good in its place, and we can enlarge the place

somewhat under present conditions, but cows will need something besides hay next winter if they are able to help much in lessening the food shortage. Let us settle the matter by saying that we will feed all the hay the cows will eat. We will not give them a pound of hay to waste for this does no good, but we will feed them all they will eat up clean because it is good for them and because it is cheap.

Keep Cows Well Fed.

If we are careful with our horses, we can save a part of the grain that some of us have been in the habit of feeding them and give it to the cows. Our horses do not work much during the winter, but our cows do a large amount of work and so we may feed the horses less and the cows more than we have perhaps been in the habit of doing.

No man with eight or more cows that will give milk next winter should try to get along without a silo. Of all the years within the memory of the writer, this one most strongly emphasizes the importance of the silo. Present indications point to large amounts of immature corn. The silo is the only place where this form may be stored without much loss. The man who plans to husk his corn and feed the dry stalks to the cows this time will be unfortunate for he will find it hard to buy the needed grain, and those dry stalks will be very unsatisfactory feed without plenty of grain.

At the present price of corn, we predict that large amounts of ears will break off before the corn is cut and the stalks will be put in the silo. These stalks when ensiled will be much better than as though they were dry, but grain must be fed.

The Use of By-products.

I believe it is our duty to give the subject of by-products much attention. We may not obtain cheap feed, but we can lessen the cost of feed often by purchasing by-products instead of the ordinary grains grown on the average farm.

At this writing it is too early to prophesy concerning the sugar beet crop, but it is safe to assume that it will be larger than last season. In dried beet pulp we have a very valuable by-product. Beet pulp is not rich in protein, but it is quite abundant in carbohydrates and besides it is a good conditioner. That is, it seems to act upon the digestive organs in a way to enable the cow to get more out of it than we might expect when considering its analysis only. It has emphasized the fact that we must go farther than the chemical analysis when measuring the value of feed stuffs. The real test of any dairy feed is made when the old cow eats it and makes her return in milk. Dried beet pulp has been widely tested, in this way, to the entire satisfaction of those who have used it.

Michigan has an unusually large acreage of beans this season, and we may confidently look for at least a normal aggregate. However, the crop in many cases was planted late, a fact which points to the probability of late ripening. If weather conditions should be unfavorable there will be a large amount of culls. Cull beans, either ground or cooked, make good feed for dairy cows. The writer has fed many tons of cooked beans and can say that when fed in connection with other grains they are highly satisfactory, provided the price is not too high.

There will probably be the usual supply of cottonseed meal, and on account of the great demand for all feeds it should be the purpose of every man who keeps cows and is in need of feed to get in touch with the large dealers in cottonseed meal at the earliest possible moment. I do not believe that anything will be made this year by waiting for lower prices.

Gluten meal is very good feed but

the supply is uncertain, and the demand very strong. We bought a car of gluten recently through the creamery. It was distributed among the patrons at a price much lower than can be purchased now.

Supply Not Equal to Demand.

The supply of dairy products is not now equal to the demand, and the demand must grow faster than the supply within the next few months. But high as prices of milk and butter may seem to the consumer in the city, they are not high in proportion to the cost of feed stuffs. We can cut down the cost of production by more businesslike methods of buying the feed we must have.

Dealers must have a larger profit than usual upon feed because they have to invest more money in their stocks. It is safe to say that dealers who buy feeds and store them, selling in small quantities, are having a profit of from two to six, or even eight, dollars a ton. In most cases the margin is probably around three dollars. Now if feed is taken from the car by the consumer, and if cash is paid on delivery, it can be handled for fifty cents a ton.

Now, my dear friend, don't shake your head, for I have handled thousands of dollars worth of it at practically that margin this summer, and am in the best of spirits.

Dairy Farmers Should Co-operate.

Dairymen, talk this matter of co-operation over among yourselves and see if you cannot buy at least some of your feeds together. Secure prices early upon beet-pulp, cottonseed meal, gluten meal and any other feeds you may wish to buy, and then work up the orders in the community. Don't be afraid of your dealers. They may be handling feed, too, and may not sell enough so that they can order by carload lots. In this case, they will be glad to join with you.

These cows of ours are machines for the manufacturing of dairy products, the feed they consume is raw material, and we are simply not masters of the situation until we learn to buy this raw material in the most favorable market, and deliver it at our farm factories at the least possible cost.

It is right that we should do this. Moreover, it is our duty to do it. It is to the interest of all concerned that we should do it. I would not argue the question with any dealer for a minute, unless I had nothing else to do, and were in need of mental recreation. Do not misunderstand me, I am not opposing the dealer. Dealers buy feed of me every time I bring in a car, but the point I am trying to make is this, the dairy business is our first concern. The feed business, the creamery business belongs of right to us. If we are producing milk for the city market, then the price of that milk to the consumer is our business. We are interested in the product until it reaches the consumer.

Should-Know Cost of Production.

We know, or should know, what it costs us to produce it, and while we have not moral right to extort an unwarranted price from the dealer or the consumer for it, we do owe it to ourselves, to our families and to those of our calling generally, to unite and to demand and secure what it is worth to produce it.

By buying our own feeds, by giving attention constantly to market conditions, and by co-operating in the effort to find out just what feeds will serve our individual community best, we shall increase our profits and the output of our dairy factories.

Lastly, we are not going to make anything by scrimping in rations of our cows because feeds are high. Thousands of cows are now dry. They are to freshen in October and November and the tendency is to let them get along almost any way.

It will not pay to neglect these cows. If pastures are good they will require no other feed while this condition lasts, but if as short as most of them are the ration of these dry cows should be supplemented.

No feed pays us half as well as that we give the cow when she is dry. Of course, we may overdo this matter, but in general we much underdo it. It is simply impossible for very many cows to do good work largely on account of their inferior condition at freshening time.

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PICK UP after they change to the delicious, pure food-drink—

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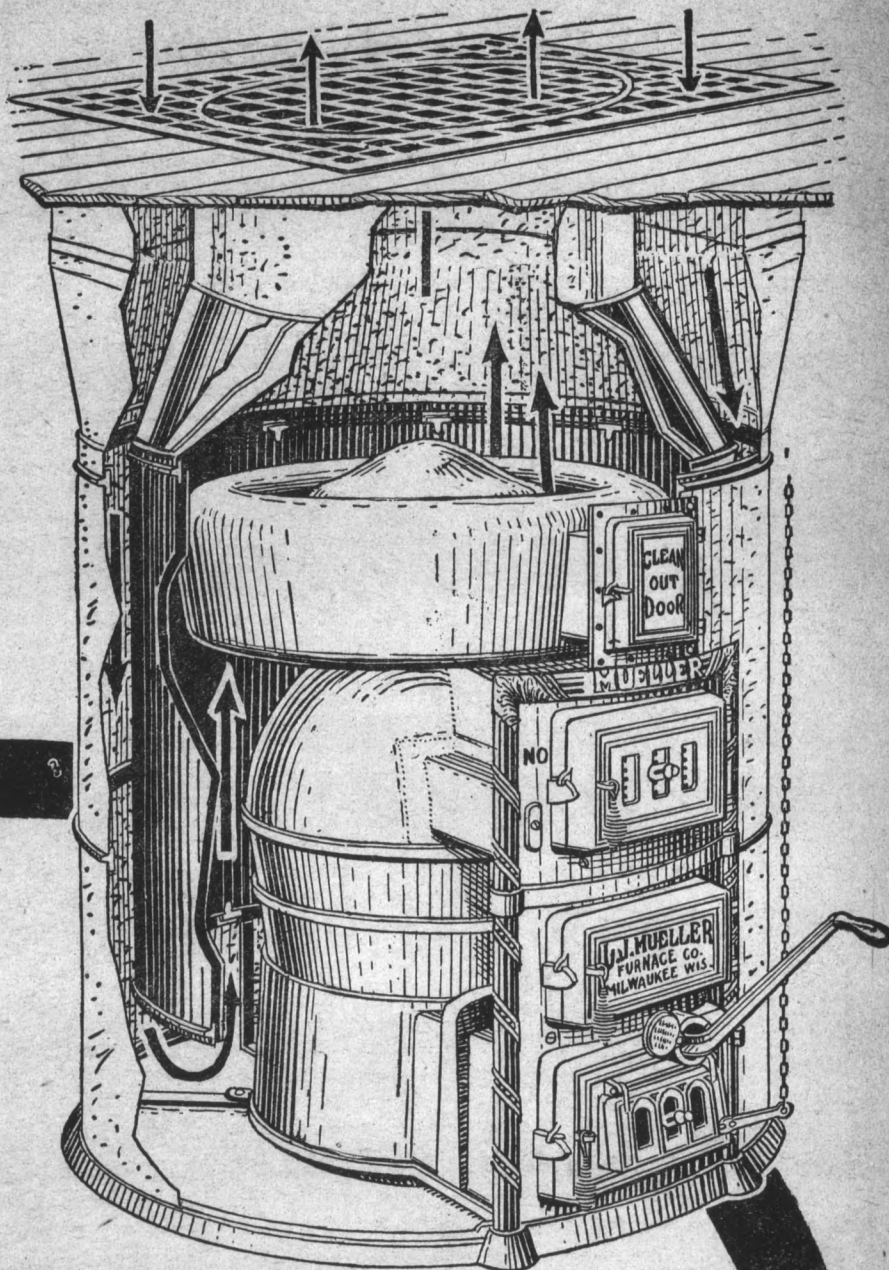
As this warm air becomes cooler it falls to the floor and descends through the outer or square part of the register into the outer casing or jacket of the furnace, and thence into the inner compartment, where it is reheated by coming in contact again with the heated casing.

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It is a real furnace, the result of 60 years of experience in the building of heating systems of all kinds, and it has behind it the Mueller name and reputation. It has the unequalled heating efficiency and fuel economy of the nationally known Mueller warm air, hot water, steam and vapor systems.



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Thousands of dwellers in stove-heated homes are installing the Mueller Pipeless. It frees them from the discomforts and disadvantages of putting up and taking down stoves in the different rooms every spring and fall, and of carrying fuel into the different rooms and lugging ashes from them.

It enables them to enjoy the comforts and conveniences of furnace heat without the expense of tearing up the walls to put in pipes, and in homes in which the installation of a pipe furnace or other heating system would be impractical.

It heats the entire house from one central heating plant located in the cellar, where it belongs, out of sight and out of the way, yet doing its work quietly and efficiently.

The Mueller Pipeless Furnace furnishes a constant supply of moist, warm air which continually circulates through all the rooms, keeping them at a comfortable temperature. It burns hard or soft coal, coke or wood, and saves 35% in fuel.

It is quickly and easily installed and is especially adapted for houses having small or partial cellars. Even if there is no cellar at all, it is an easy matter to dig a pit large enough to accommodate it. It does not heat the cellar—does not prevent the storage of fruits and vegetables.

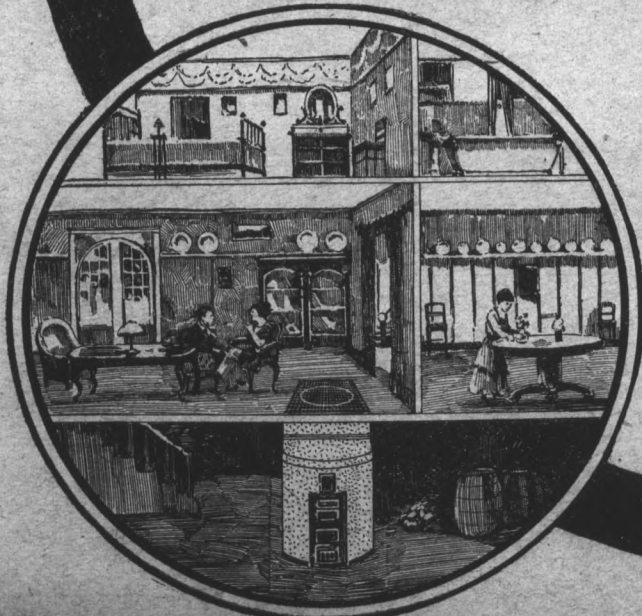
Thousands of homes were kept warm and comfortable during the unusually cold winter of last year by the Mueller Pipeless Furnace.

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# The Value of the Silo

By a "Herdsman"

THE farmer who contemplates building a silo in a district where few silos are being used, hears much opposition and criticism, from rural kill joys that have never been inside of a silo or fed a fork full of silage. Such a bunch of knockers usually bring up such stories, that silage rots a cow's teeth, taints the milk, and that many silos are standing idle in the great dairy district of northern Illinois and throughout Wisconsin.

Because of these remarks which are doing harm, and misleading some farmers of good intentions, I wish to take up the question of the true merits of the silo.

During the past twelve years I have traveled over a considerable area of this country and have worked among farmers and dairymen in the different states and have fed some of the prize cows of the country. During the past year I traveled through some of the northwest, but put in the greater part of the time in Wisconsin, the Badger State being the leading dairy state. My greatest pleasure was in attending the state fair there. It was at the fair where the anti-silo farmer could learn a valuable lesson. In the cattle department every type of cattle could be seen, from the little Kerry cattle up to the milk strain of Shorthorns in the dairy class. The strains of beef cattle were well represented, from the low Herefords to the great big Shorthorn. Many farmers stood and looked upon the fine strains of cattle in amazement and many times were the men in charge of the cattle asked the question, "What are these cattle fed?" and always did they hear that silage was the important factor of their daily rations.

In order to give the readers an idea what the dairy cow means to Wisconsin, some state figures are necessary. In the dairy building I got these figures of the output in 1909: In that year the dairy cows of Wisconsin produced 206,000,000 pounds of cheese; 130,000,000 pounds of butter, and 150,000,000 pounds of condensed milk. While no actual figures could be had of the amount of milk sold direct to the consumer in the cities, during that year the dairy business in that state amounted to over \$10,000,000. The silo must be given credit for playing an important part in the great industry. When we taken into consideration that there are over 60,000 silos in the state and they are scattered all over the state; many may be seen near the shores of Lake Superior.

### Silos Outside the Corn Belt.

While traveling through the northern part of the state, I was greatly surprised at the way the settlers were interested in cows and silos. The climate in that region is no more suitable for corn growing than it would be for the growing of southern fruits. Because of the many silos to be seen there in a country not adapted to corn, I decided to do some investigating. At the farm of a Dane I saw a number of crops used for silage. That northern country is often called "Cloverland," and surely lives up to its name. And the Danish farmer made use of many acres of clover and timothy hay. He wanted succulent feed for his cows during the long winter months, so each year he has a large acreage of this hay and also plants considerable oats and peas. While I was there he was busy filling his silo with the second crop of clover, and oats and peas. During our conversation he told me he has used such crops as buckwheat and millet for silage, and always got good results. The clover silage, after thorough fermenting, has a very fine odor, and is greedily eaten up by the cattle.

In parts of Wisconsin there are dairymen that do not put their cattle in pasture at all. They feed silage,

root crops and alfalfa hay. The dairymen who keep cattle under that system of farming claim they can keep more per acre that way. I found one dairyman that kept 150 head on a 135-acre farm, and I must say his stock looked good.

### Silos Popular in the West.

To illustrate what a revelation the silo is to farming conditions of this country, some ten years ago I traveled all the western country. At that time few silos were to be seen. Last season I covered considerable of the same territory and in every state any amount of silos were in use and many more in the course of construction. In the cold Dakotas, and Montana, the silo is becoming very popular. In eastern North Dakota there is a Swiss farmer who is teaching an object lesson to owners of run-down farms as to what silos and cattle can do. This man was a born dairyman, and worked at the trade of cheese making for a number of years. Desiring to take to farming for himself he was persuaded by a countryman to try wheat growing on the Dakota farm, which was a disappointment after the first season, the land had been farmed for years and was badly run down because of the continuous wheat cropping. That year his wheat averaged eight bushels per acre and sold for sixty-five cents per bushel. If there was any profit to be made at such yields and prices, this man failed to see it, and the second year he started in with a different system. That year he built a silo, bought ten cows of milk breeds, and a Brown Swiss bull of good breeding. From the cows he sold butter and found a ready market. The first summer every one of his neighbors said his butter business would come to a close when the cold weather set in, and laughed at his silo and low, dirt-banked cow sheds. The readers of this article, who have never been in the Dakotas, must understand that the climate there is not suited to raising dent corn. Only the hardest flint corn will grow there to any advantage. But the Swiss had things figured out long before the silo was built.

### Silage from Sunflowers.

Over in Europe a plant that has been grown for years as a food for human beings, and stock, is the sunflower. Over there the seed is served as a dainty, and the oil is commonly used for cooking purposes. The seed, after being pressed for the oil, is used as a stock food, and contains as much crude protein as linseed meal. With these facts in mind the Swiss farmer decided to use sunflowers as a silage crop. The sunflower has the advantage over other plants of being a sure cropper, and a fast grower. The sunflowers grown on the North Dakota farms were planted very thick in the row, and the rows were twenty-eight inches apart. It was explained to me that planting that way the stalks did not grow coarse and woody and made as high as fifteen tons of silage per acre. By the mixing of the sunflowers and cornstalks at filling time, a good silage was made. Other crops were put into the silo, such as green rye, wheat, oats, peas and sweet clover. By filling his silo with these crops, he had plenty of succulent feed, and kept up a good flow of milk all winter. Several others soon got the idea, and a number of silos were built in that district the following year, and the little town was soon flooded with butter, and the prices went down. But the Swiss farmer was not discouraged in the least. He added more cows to his herd, including pure-breds, and built a small factory for cheese and butter making. He bought all the milk obtainable and started in business. His cheese sold readily, and in a short time he could

(Continued on page 210).



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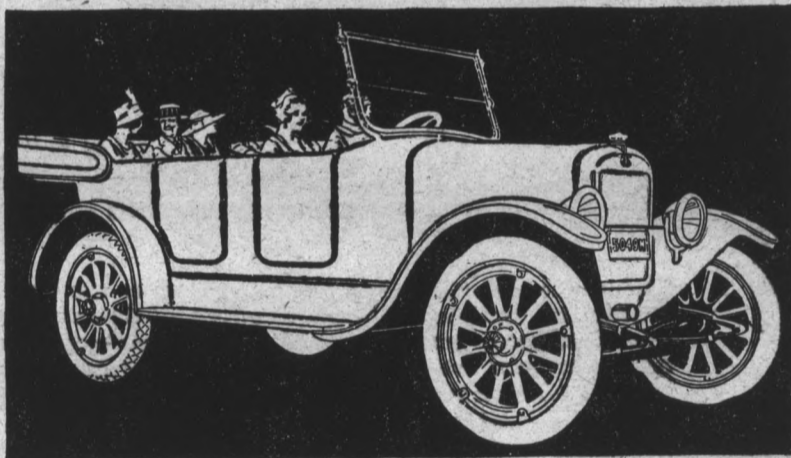
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**JOURNAL**  
ESTABLISHED 1843.

The FARM BOY  
and GIRL  
SCIENTIFIC and  
MECHANICAL

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

**F**AR VIEW HOUSE, whose excavation was well advanced at the close of last season's work, opens up a new phase in the history of the famous prehistoric people of our southwestern arid regions. "We are on the threshold of a great research," writes Dr. Fewkes.

To understand the importance of the historical vista opened by the discovery of Far View House, it must be recalled that, previous to the discovery of Sun Temple in the summer of 1915, the Mesa Verde ruins apparently were confined to cliff dwellings.

Sun Temple, however, had been found under a mound on the top of the mesa and indicated phases of Man-

## The Moncos of Mesa Verde

cos civilization hitherto unknown. That it represented a later development than Cliff Palace, Spruce Tree House and the other celebrated cliff dwellings was suggested by its more advanced ideas in the arts of building and wall decoration. That it probably represented the highest and latest phases of Mancos civilization seemed to be shown by the fact that this supreme building, the temple to the sun, God of the Mancos, remained unfinished, even unroofed.

That was the situation when Dr. Fewkes began last summer the excava-

tion of mounds found in the so-called Mummy Lake section of the Mesa Verde. These mounds also lie on the surface. They are upon Chapin Mesa, four or five miles north of the splendid groups of cliff dwellings which nestle in the cliffs overlooking Spruce and Cliff Canyons. The government road from Mancos to Spruce Tree House passes it.

What is known as Mummy Lake was never properly a lake, but a reservoir for prehistoric irrigation. The surrounding region was doubtless well farmed. The remains of the ancient

ditches indicate a considerable activity. It was one of the pueblos in this farming neighborhood which Dr. Fewkes has uncovered and named Far View House because of the extensive view it affords of the neighboring country. It was not the only farm country of the Mesa Verde. Four or more areas similarly cleared of prehistoric cedar forests and possessing mounds exist in the national park. It will be seen that the civilization that led up to and possibly ended in Sun Temple is much more extensive than was at one time supposed.

The Mummy Lake clearing, now dotted with sage brush, is extremely fertile; under irrigation it doubtless yield-

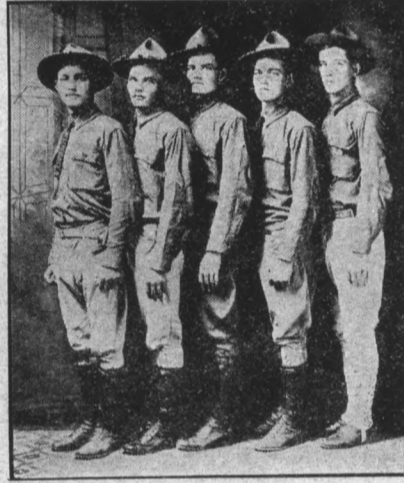
## WORLD EVENTS IN PICTURES



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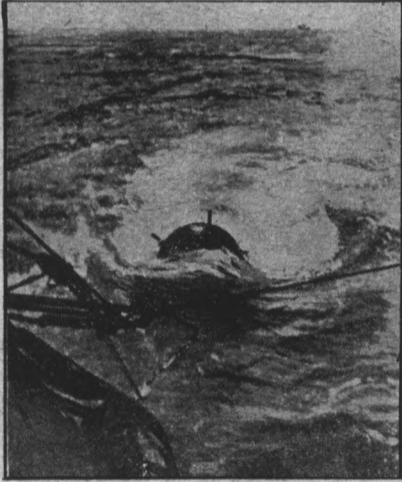
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ed large crops. The region will be found today a veritable summer flower garden. Indian paint brush and astors color it vividly.

Far View House, as it gradually emerged from the sandy mound that thickly covered it, proved to be a large pueblo containing forty secular rooms and four circular ceremonial kivas. It is a two-storied building. The rafters of the first story still exist. There are indications of a third story; the pueblo may have contained fifty rooms.

The central kiva is of unusually large size, indicating that the building may have housed more than one clan. Its position, like that of Sun Temple, seems to have been carefully determined by astronomical observation. Its south wall is in line with the rising sun at the autumnal equinox. The main north wall is one hundred and thirty feet long.

There are many indications in addition to propinquity that this pueblo, and probably the many which remain unearthed, were built by the peoples that built the great cliff dwellings of the Mesa Verde and, later on, the Sun

Temple. The decorations of some of the stones differ from those on the inner walls of Sun Temple, and may represent a considerably earlier era. The serpent spiral there used is also found in Spruce Tree House. The complicated form of several incised figures suggest something more than mere embellishment, but Dr. Fewkes fears that it is too much to hope that they may have value as inscriptions.

One of the doorways into the large central kiya recalls a Maya arch and is unique in Mesa Verde construction. It consists of a flat stone forming the top and resting on side piles of other stones, each set a little back from the one above it. There are no true arches in the Mesa Verde.

Far View House, so far as excavated, throws no new light on the age of the Mesa Verde civilization, or on the mystery of this people's disappearance. But it constitutes a valuable addition to the knowledge of their strange civilization, and it may point the way, through further excavation, that built the great cliff dwellings of the Mesa Verde and, later on, the Sun

## Loaning Government Money

By ALBERT SPENCER

THAT progressive spirit which has marked the history of agriculture in Michigan since the pioneers began farming in the older settled counties of the state, is still alive as may be shown by the promptness with which the farmers in those sections of the state where money is needed to aid in the development of the land, have proceeded to meet the conditions necessary to secure funds from the government under the Farm

Loan Act. One of the first societies to be formed with his typewriter and after the work was completed we found that the initial number of members was thirty-six. This was very encouraging.

At the session I was asked many questions. These I answered as best I could with the help of the literature gathered from my farm paper and pamphlets furnished by the government at Washington. The Federal Land Bank had forwarded us additional matter and copies of this and of the federal act were distributed to each person present. Before the meeting



The Spencer National Farm Loan Association of Lake County, was Among the First to be Organized in Michigan Under the Federal Farm Loan Act.

ed after the requirements of the federal government had been published, was up in Lake county. The writer had noted in the columns of the Michigan Farmer just what was necessary to secure these loans and after receiving the necessary data from Washington went about the task.

had closed all were satisfied that the plan was a most excellent one.

The majority of the men present wanted money to clear their lands. This is the difficult thing for pioneers who have paid all their available capital to secure the raw land. They could clear the cut-over land slowly, a few acres each year, but that method requires a long time before the farms are producing anywhere near their capacity. With these easily available government loans the clearing can be done at once.

The method may be of interest to others. I got out some notices reading "Government Money at five per cent interest with from five to forty years to pay same in." I then drove around to several country stores and obtained permission to post these notices, giving my address that those interested might write me. I soon began receiving inquiries in which the parties stated the amount of money they needed. After getting a sufficient number of these prospective loans to aggregate the amount demanded by the government to form an association I called a meeting.

Much of the work will be done on contract. A local bank will be made the agent of the farmers and the contractor. We have a few men who have little or no capital that will be glad to enter into this kind of work as a profession. The bank will finance them in the purchase of the necessary equipment for doing the clearing in the most efficient manner. In this way the farmers will get the benefit of the use of modern clearing machinery which will further reduce the cost of getting their land ready for crops.

When we met it was at once observed that there were many farmers present who desired loans that had not written me, so as a result we started the organization with a larger prospective loan asked for than was necessary instead of barely enough as we had anticipated before our arrival at the place of meeting. We had a notary present who filled out the applica-

Applications for between \$40,000 and \$50,000 have already been made and more prospects are in sight. The borrowers will pay five per cent interest and expect to pay five per cent of the loan each year.

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# "Contraband" RANDALL PARRISH

"You speak French, don't you?"  
 "Oui, monsieur, oui, but—but I know not what to speak."

"Well, don't let that worry you. McCann will tell you—but may the good Lord pity you, Dubois, if you fail to repeat it. Up with you now, and be lively about it!"

The Frenchman disappeared, and White, opening one of the larboard stateroom doors, passed in out of sight. Evidently he perceived nothing to alarm him within the cabin, and was eager to view the approaching vessel through an open port. All thought of my former purpose vanished from my mind as I realized this new chance of rescue. At any risk I must attain quickly to the open deck, where I could create an alarm sufficient to awaken suspicion on board the approaching Frenchman. If they could be made to send a boat to investigate the chances were the nature of the Indian Chief's cargo, and the unnaturalness of our being in these northern seas, would result in the ship being made a prize of war. McCann's only hope of escape lay in some satisfactory explanation, which would lull the suspicions of the French commander—some lie smooth enough to prevent boarding and search. Nor did I doubt the fellow had the wit to play such a trick; quite probable, indeed, his story had already been worked out carefully in anticipation of just such an event as this—a plausible tale, convincing in its details.

Assured that White was beyond observation of any of my movements, I crept cautiously around the stair rail, and noiselessly mounted the steps. The light behind me in the cabin burned so dimly, I ran little danger of being seen as I slid back the door of the companion, and squeezed my body through the narrow space. Indeed, if noticed by any eye, the chances were I would be mistaken for one of the crew. But I found the after-part of the main deck deserted, although forward of the main mast I could perceive dark blotches along the port rail where members of the watching party were observing the approach of the French cruiser. Crouched against the cabin front, I could perceive nothing of the other vessel except a trail of black smoke visible against the stars, but the Indian Chief was already nearly stationary, merely retaining steerage-way, and rising and falling lazily on the swell. I could hear men walking on the poop deck almost directly over me, and occasionally the sound of a voice, but was unable to distinguish the words spoken. With heart beating like a triphammer, I made my way along the front of the cabin, until I ventured to peer over the port rail, secure that my presence on deck was screened by the deep shadows in which I lurked.

The gleam of the stars alone revealed the glittering surface of the sea, but the night was clear of fog, and the black outline of the French warship was plainly visible, approaching us at half-speed, and silently closing up the narrowing gap of water between the two vessels. Not a glow of light illumined the gloomy decks, yet I could dimly perceive moving figures on the bridge, and glimpses of white in the fighting tops where the gun crews mustered in readiness for action. The ship was no larger than our own, indeed scarcely attained our height above the water, yet there was something grimly sinister about the monster's appearance—its silent, cautious approach; its grim inarticulate threat of destruction. I felt the heart come up into my throat as I gazed spellbound, every nerve in me throbbing painfully. A single voice echoing along those decks yonder

could blow us out of the water. Even as I stared at the grim spectacle, the slim figure of a man appeared at the end of the bridge, and a voice hailed us in French.

"Ahoy there! what ship is that?"  
 There was a shuffling of feet above me; then McCann spoke in English.

"The American freighter Indian Chief, bound for Liverpool."

"Is there anyone aboard who speaks French?"

I heard them hustle Dubois forward to the rail, and caught a word or two of McCann's swift threat hissed into his ear; then the frightened Frenchman stammered out an answer:

"Oui, monsieur, je parle Francais."  
 "Then talk up, what ship is that?"

I could hear McCann prompting, and Dubois echoing the words put in his mouth.

"The Indian Chief, of Boston, McCann, master, from St. John's to Liverpool, two days out."

"With what cargo?"  
 "Miscellaneous; mostly farm machinery."

A searchlight suddenly swept us fore and aft, but finally settled on the little group of men clustered together at the poop rail.

"You're north of your course."

There was an instant of hesitation; then Dubois' explanation:

"We ran before the storm last night, monsieur, having been struck by the lightning."

"Ah, I see; that accounts for your stump of a foremast and the temporary wheel aft. No other damage done?"

"No, monsieur, the ship is entirely seaworthy."

The figure of another man joined the officer at the end of the bridge, and the two talked a moment; then the same voice called:

"Ahoy there! what shape are your boats in?"

"Three of them left, monsieur."

"Send the captain, with the Frenchman, over with the ship's papers. Be lively about it!"

"Oui, monsieur; what is the name of the warship?"

"The French cruiser Des Cartes, on patrol. Get your boat over."

What would McCann do? Was he ready for such an emergency as this? Had he taken the precaution to alter the ship's manifest, or even forged a new one? I hesitated to cry out a warning, hoping that the papers submitted would arouse the Frenchmen to send a prize crew aboard, and crouched down in my corner, so as to avoid discovery in the glare of the searchlight. There was a moment of excited talk on the deck above me; then McCann descended the starboard ladder, and disappeared through the companion, evidently after the ship's papers. Liverpool's voice ordering the watch to lower number five boat, and stand by, sung out from the poop rail. Still uncertain what action to take, I remained crouched within the narrow space between the rail and cabin, avoiding the glare of the searchlight, which constantly swept the decks to give the officers on the bridge of the Des Cartes view of what was occurring on board. McCann emerged from the companion, called up to Liverpool, waving his hand with a laugh full of confidence, and went forward. A moment later he was joined by Dubois, and the two men clambered over the rail and dropped into the lowered boat. His actions, his easy manner, startled me; those must be carefully forged papers in his pocket to enable him to proceed with such confidence. Slowly I lifted myself until I could peer over the side at the dark expanse of water

(Continued on page 202).

## Western Electric Labor Saving Farm Light and Power Plant

Brighten up your place with Electricity. Now is the time to plan for better lights for this Fall and Winter. It will mean not only safe and reliable lights, but a steady source of power that will pump water, turn the cream separator, wash and iron the clothes, and save your wife all the drudgery of housework.



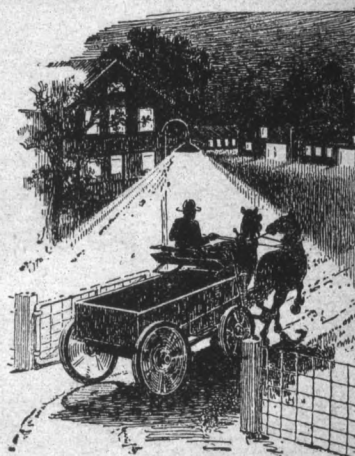
Running water upstairs and downstairs with an electrically driven pump.



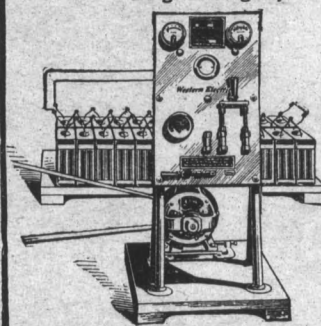
The constant speed of the electric motor means better separation of the cream.

Electric light is so easy to have when you can make it the Western Electric way! There's just the generator and storage battery in the plant, and you run it from your gas engine. Nothing complicated. As easy to take care of as the Western Electric farm telephone you have in your home. There's 40 years of electrical experience back of both of them—that's the reason.

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### Feed the Fighters! Win the War! Harvest the Crops! Save the Yields!

On the battlefields of France and Flanders the United States boys and the Canadian boys are fighting side by side to win for the World the freedom that Prussianism would destroy. While doing this they must be fed and every ounce of muscle that can be requisitioned must go into use to save this year's crop. A short harvest period requires the combined forces of the two countries in team work, such as the soldier boys in France and Flanders are demonstrating.

#### THE COMBINED FIGHTERS IN FRANCE AND FLANDERS AND THE COMBINED HARVESTERS IN AMERICA WILL BRING THE ALLIED VICTORY NEARER

A reciprocal arrangement for the use of farm workers has been perfected between the Department of the Interior of Canada and the Departments of Labor and Agriculture of the United States, under which it is proposed to permit the harvesters that are now engaged in the wheat fields of Oklahoma, Kansas, Iowa, North Dakota, South Dakota, Nebraska, Minnesota and Wisconsin to move over into Canada, with the privilege of later returning to the United States, when the crops in the United States have been conserved, and help to save the enormous crops in Canada which by that time will be ready for harvesting.

#### Help Your Canadian Neighbors When Your Own Crops Harvested

Canada wants 40,000 Harvest Hands to take care of its **13 Million Acre Wheat Field**

One cent a mile railway fare from the International Boundary line to destination and the same rate returning to the International Boundary. High wages, good board, comfortable lodgings.

An Identification Card issued at the boundary by a Canadian Immigration Officer will guarantee no trouble in returning to the United States.

AS SOON AS YOUR OWN HARVEST IS SAVED, move northward and assist your Canadian neighbor in harvesting his; in this way do your bit in helping "Win the War".

For particulars as to routes, identification cards and place where employment may be had, apply to Superintendent of Immigration, Ottawa, Canada, or to

**M. V. McINNES, Canadian Government Agent, 178 Jefferson Ave., Detroit, Mich.**

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**HOOSIER STOVE CO.**  
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**FOR SALE** Rosen Rye. The new variety of rye which has yielded as high as 35 bu. per acre. Write for prices. W. C. Fuller, Farwell, Mich.

**FOR SALE** Red Rock Wheat and Rosen Rye ready to ship order early. **PARDEE BROS.,** Gallien, Mich.

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Winchester Model 12—Hammerless  
Shotgun, 12, 16 and 20 gauge

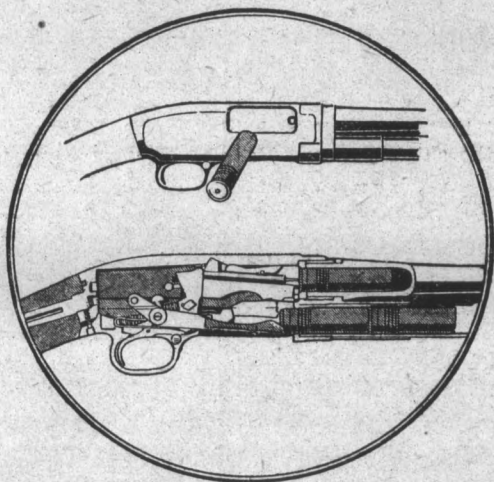
## The gun with a dog's pointing instinct

A dog points by instinct. Its nose, body and tail come into line naturally—instantly. So with the hunter and his gun.

Armed with the right gun, he "points" it instinctively. If properly balanced, his gun comes up into line naturally, as easily as pointing a finger.

But if the gun is not right, if it has not been perfectly balanced in the shop, it won't work out well in practice, just as a dog, if not properly bred, will not work out well with its master in the field.

The Winchester Model 12 Repeater is a *thoroughbred* of shotguns. It has been classed



Quick feeder, sure ejector. Throws empty shells to the side, out of your way

by experts as "The Perfect Repeater."

Its balance enables you to get onto fast flying birds instantly. Pointed right, it never fails to bring down the game.

Fifty years of the best gun making traditions have produced in the Winchester Model 12 a gun of almost human instincts.

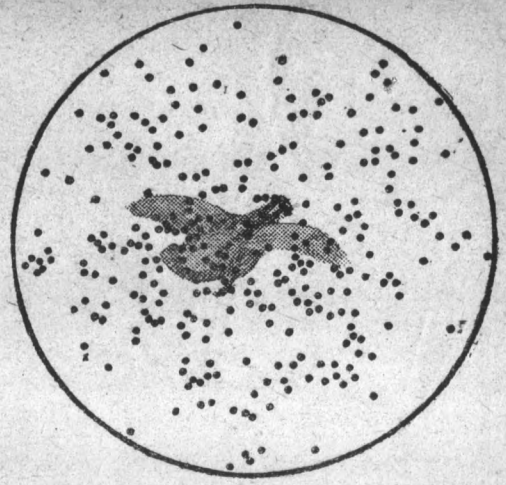
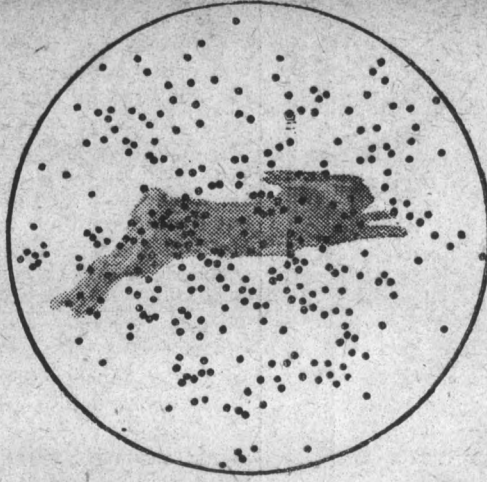
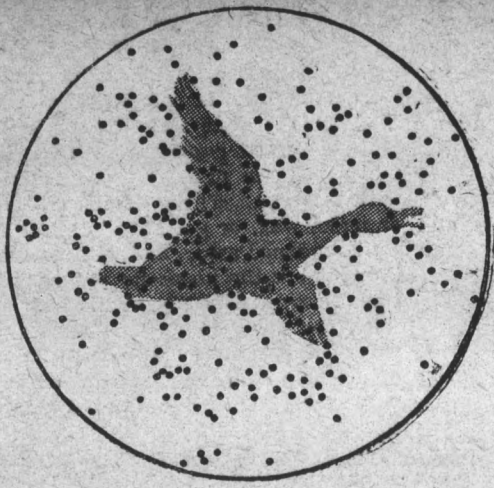
The right amount of choke for different loads has been worked out after exhaustive experiment. Result: a pattern that spreads out evenly—neither too scattered nor too bunched—and lands with lots of steam behind it.

It is a triumph of guncraft. Nicely balanced, with its slim, graceful barrel, the Model 12 is a beautiful weapon, with a fascination about it that few sportsmen can resist.

# WINCHESTER

World Standard Guns and Ammunition





*Even spread, maximum penetration. Winchester shot pattern brings down the game.*

# The pattern that brings down the game

The remarkable game-getting pattern of the Winchester Model 12, shooting its own standard ammunition, is the result of infinite care taken in boring the barrel.

### The barrel is the gun

Men who know guns realize that the accuracy and durability of a gun lie in the barrel. On the quality of the barrel depends the quality of the gun. There is absolutely no difference in the standard quality of the barrels on the highest and lowest priced Winchester guns. With Winchester, the barrel is the gun, and the single standard of quality has been attained only by the most unremitting attention to the boring, finishing and testing of the barrel. The same high quality of Winchester barrel is found on every gun made by Winchester. The great volume of guns sold makes this policy possible.

### The Winchester barrel

The barrel of the Winchester Model 12 has been scientifically bored to micrometer measurements for the pattern it is meant to make.

The degree of choke exactly offsets the tendency of the shot to spread. Until its pattern proves up to Winchester standard, the gun cannot leave the factory. The Bennett Process, used exclusively by Winchester, gives the Winchester barrel a distinctive blue finish that with proper care will last a lifetime. The Nickel Steel construction preserves the original accuracy forever.

### What means

This mark on the barrel means *Viewed and Proved Winchester*. This stamp stands for Winchester's guarantee of quality, with fifty years of the best gun-making reputation behind it.

Every gun that bears the name "Winchester" and that is marked with the Winchester Viewed and Proved stamp has been fired many times with excess loads for strength, smooth action and accuracy.

At every stage of Winchester manufacture, machine production is supplemented by human craftsmanship. It is a *test and adjustment process*.

It is this care in manufacturing that has produced in the Model 12 a gun of unsurpassed game-getting qualities and whose grace, balance, beauty of lines, and never failing performances in the field have earned it the title of "thoroughbred of shotguns"—*the gun with a dog's pointing instinct*.

*For those who prefer a hammer action gun, we have made the Model 97. It is built on exactly the same lines as the Model 12, but with hammer action.*

Write for details of Winchester shotguns, rifles and ammunition

The Winchester catalog is an encyclopedia on shotguns, rifles and ammunition. Every hunter should have one. It gives detailed specifications of the Model 12 and describes at length the principles on which every one of the world famous Winchester shotguns and rifles is built. Write today. We will mail you a copy free, postpaid.

WINCHESTER REPEATING ARMS CO.  
Dept. M-1 New Haven, Conn.



Winchester Model 97  
Hammer Shotgun

*Take-down Repeating Shotgun. Made in 12 gauge, weight about 7 3/4 lbs.; in 16 gauge, weight about 7 1/2 lbs. The favorite with shooters who prefer a slide forearm repeating gun with a hammer.*

**WINCHESTER**  
World Standard Guns and Ammunition



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—property insurance against weather and decay—a safeguard against continual repainting.

You know that balanced soil means better crops—balanced rations mean better live stock. It's the same with paint. Balance is the thing.

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is well balanced paint—the result of 124 years of paint making. Every individual color and kind is made for a specific use—and each is best for that use. That is the reason why it will spread further, cover more completely and last longer. If you can't get it from your dealer, write us direct.

Get Our Free Farmer's Paint Book No. H-67

Start right when you start to paint. Learn the truth first. It will save you expense and disappointment in the end.

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Established 1793  
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**Make Your Ford Do Your Gas Engine Work**



If you own a Ford you own a power plant, reliable as your Ford engine, portable as your Ford car. All you need to get this added service is a

**Schluter** Saves you \$150 to \$200 on 8 H.P. engine

Guaranteed to do all that any 8 H. P. gas engine can do. Runs 4-hole corn sheller. Sells complete for only \$22.50. Regular gas engine costs \$200 and up. Guaranteed not to damage your Ford engine or injure your car in any way.

Does not interfere with your Ford touring. Only permanent change you make in your car is to remove Schluter stub crank shaft and use detachable crank furnished with attachment.

Can be put on in less than 15 seconds without jacks, nuts, screws, or bolts. When through work, jerk Schluter off, throw it in your car and drive away without stopping engine unless you want.

WRITE FOR BIG CIRCULAR OF FACTS—We will send it by return mail. You need a Schluter to get all the service your Ford can give you. Send now for complete facts and name of nearest dealer.

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**FIRST OLD DETROIT NATIONAL BANK**

MEMBER FEDERAL RESERVE BANK

THE directorate of this bank is composed of men whose individual prominence in the business field enables them to keep in the closest possible touch with changing business conditions. Their knowledge and experience is of inestimable value to our clients everywhere.

DETROIT

**USE NATCO DRAIN TILE**

Farm drainage demands durable tile. Our drain tile are made of best Ohio clay, thoroughly hard burned—everlasting. Don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. Also manufacturers of the famous NATCO IMPERISHABLE SILO, Natco Building Tile and Natco Sewer Pipe.

National Fire Proofing Company - 1115 Fulton Building, Pittsburgh, Pa.

**DITCHING**

A Mile a Day

is Easy With this Simplex Ditcher-Terracer. Equals 100 men. Low cost. Builds terraces and levees. Grades roads. Mostly all steel. Reversible. Ten days' trial.

Write for prices and money-back guarantee. Simplex Farm Ditcher Co., Inc. Box 63 Owensboro, Ky.

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Get It From the Factory Direct

**HORSE-HIGH, BULL-STRONG, FIG-TIGHT.**

Made of Open Hearth wire heavily galvanized—a strong durable, long-lasting, rust-resisting fence. Sold direct to the Farmer at wire mill prices. Here's a few of our big values:

26-inch Hog Fence - 24¢ a rod  
47-inch Farm Fence - 35¢ a rod  
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Special Prices on Galv. Barbed Wire

Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at money-saving prices. It's free. Write for it today.

**KITSELMAN BROS. Box 278 Muncie, Ind.**

Please Mention The Michigan Farmer When Writing to Advertisers

**"CONTRABAND."**

(Continued from page 199).

between the vessels. The searchlight of the warship rested in a glare of white on the small boat bobbing up and down, revealing the men at the oars, and McCann and Dubois in the stern sheets. Neither glanced back, but I could see their faces clearly, and McCann was smiling as though at an excellent joke.

**CHAPTER XXVII.**

**The Cruiser Leaves Us.**

I WAS still clinging to the rail, and staring down at the light; I heard nothing, felt no premonition of alarm, when suddenly a hand gripped my throat, the great fingers stifling every effort to cry out. Before I could resist, or even brace myself, another hand was clapped over my mouth and I was fairly hurled back below the shelter of the rail, dragged across the black deck, and thrown through the opened door of the companion. This was accomplished so quickly, and with so little evidence of struggle, as to attract no notice from the Frenchman, from whose deck no doubt every eye was fastened upon the approaching boat. Half hurled, half dragged, I plunged into the dimly lit cabin, and it was not until I struck the lower deck that I even realized clearly what had occurred, or who were my assailants. I fell sprawling on one shoulder, but was as instantly on my feet, bruised, but otherwise uninjured, maddened by a rage beyond all control. White, emerging from the stateroom, through the port of which he had been viewing the scene alongside, startled by the sudden uproar, a revolver gripped in his hand, was the first face I saw.

"What the blazes—" he exclaimed in bewilderment, but before he could say more my fist jammed into his jaw, and the fellow went over full length on the deck, the gun flying from his opening fingers. I had possession of it before he could stop me, and was backed against the door of a stateroom opposite, murder in my heart as I confronted the two who had flung me from the top of the steps. I recognized them now for the first time—Liverpool Red and Tom Dugan. But one thought seethed in my brain—to kill.

"No," I cried, covering them as they shrank back, "we'll end this thing right here."

Red gripped Dugan, holding the Irishman in front of him as a shield. My revolver covered them both, my fingers nervous on the trigger. Suddenly the door behind me yielded and I staggered back, unable to regain my balance until fairly within the stateroom. With a crash the door closed, instantly shutting out the surprised faces of the two men in the cabin; a key creaked in the lock, and Vera Carrington fronted me, her back against the wood.

"Were—were they trying to kill you?" she panted.

"They certainly did their best," I answered, "but it was my turn when you dropped me in here."

"You—you mean that I made a mistake—that you were in no danger?"

"I had the upper hand. I took this revolver away from White, and do not believe either of the others were armed. In another second I should have fired. Our only hope of rescue lies in creating an alarm; there is a French cruiser lying just off our port quarter."

"A French cruiser! We have been captured?"

"No; merely halted and questioned. The Frenchman does not even suspect anything wrong. I was endeavoring to sound an alarm when those fellows seized me, and threw me down the stairs into the cabin."

"But how did you get on deck? And where did you procure the revolver?"

"I cut my way out; the gun was taken from White. Don't block the way,

Miss Vera. I must get to the deck again, or it will be too late."

"Is McCann out there?"

"No; only Red, and a sailor named Dugan. White is knocked out, and McCann has gone aboard the cruiser. He has forged papers with him. Let me go; I can fight my way through with this gun. Those devils will either make way, or get hurt."

She stepped aside, and with no other thought but the necessity for swift action, I turned the key in the lock and flung the door open. The main deck was deserted; to my surprise, all three of the men had disappeared. With revolver gripped in one hand, I stepped forward, searching with suspicious eyes every dark corner, dimly conscious that the girl followed. Her fingers touched my sleeve, yet the strain of the moment was too great to permit of my even glancing about into her face. I had attained to the foot of the stairs, even advanced a step upward before my progress was arrested. Suddenly the companion door was flung open and a mob of men confronted us, surging in through the narrow space from the deck. I drew back instantly, stunned by sight of McCann in their lead, realizing instantly that our effort to attain the open was already too late.

"There he is!" he cried eagerly. "Get him, you men. Lively now; There is no danger; if he lifts that gun, he's a dead man."

I was staring straight into the black muzzle leveled at my head, but before I could move, or even determine what was best to be done, Vera stood between me and the mob on the stairs.

"Go back! get into my stateroom; he'll never shoot me. Please, please go back."

I was hot-headed enough to have fought them all, but to attempt resistance then would have endangered her life. I retained sense sufficient to know this, and that only force would cast her aside. I heard McCann mutter an oath, and Red roar out some order, punctured with profanity, yet did not truly comprehend what efforts were being made to block our retreat. Before a hand could grasp either of us we were within the shelter of the stateroom, and the girl had closed and locked the door. Fists pounded on the wood in impotent rage, and I heard voices urging others to bring implements with which to batter their way in. My mind seemed to return to me with a flash, and I pressed the girl aside, facing the frail barrier creaking beneath the assault.

"McCann," I shouted, "call off your men! I have six bullets here, and there'll be six of you dead if you break in this door."

There was silence; then a mutter of voices—one angry with threat; others seemingly urging compromise. My ears caught but a word here and there, something about the need of a navigator, together with another suggestion that perhaps the Frenchman might not yet be beyond sound of a pistol shot. Whatever the argument, the advocates of peace seemed in the majority, for out of the hubbub McCann spoke loud enough to be plainly heard.

"There is no use of your threats, Hollis," he said, rapping on the door, "we have weapons as well as you, and you cannot fight alone against the whole ship's crew. The best thing for you to do now, is to listen to reason."

"What has become of the French cruiser?"

He laughed, and I could hear Liverpool join in rather noisily.

"Five miles to leeward, and going strong. She'll be out of sight in two hours. There's no hope for you there, my man."

"You showed forged papers?"

"Aye; that was easy enough; you never supposed I was such a fool as to overlook that, did you? We are from St. John's to Liverpool, with a miscellaneous cargo. The Frenchman hadn't



been in port for two weeks; all his news was wireless. The fellow swallowed my yarn as though it was sugar candy. And the best of it is, that is the only war vessel patrolling these waters; we have a cinch."

"Not without me," I answered calmly, after a pause in which my mind gripped the situation. "The telltale compass shows you are three points off your course now. I'll talk with you McCann, but if I continue to navigate this ship it will be at my own terms, and you'll either give me what I ask, or I'll fight it out here and now. I don't care which course you choose; only there will be some dead mutineers if I unlock this door."

"What are your terms?"

I took time to think, determined to demand every concession I dared ask, assured that I held the winning hand.

"Well," I said finally, "this coast to the west of us is no joke at any season of the year, and there are sea-currents along here to fool any seaman. You can take the chances if you want to, but it is my belief you fools will have this ship on the rocks within twenty-four hours, if you trust in blind reckoning."

"But, hang it," sung out Liverpool hoarsely, "we don't need no sermon on the dangers of the deep. If we didn't need yer, yer'd a been a dead one long ago. Stow the gaff, an' tell us what yer want."

"I will," I snapped back. "The freedom of the ship for both myself and Miss Carrington. No interference, mind you, and our pledge accepted that we will not attempt to communicate with any other prisoners on board. Our meals are to be served privately, and the lady is not to be addressed by any one of you."

"My goodness!" exclaimed a muffled voice, "you don't want much! Who are you, the Czar of Russia?"

"I am the rightful captain of this ship," I returned stiffly, "and the only man on board capable of navigating her. You can accept my terms, or leave them; and those are not all. McCann, I am talking to you, not that sea scum."

"All right; go ahead. What else?"

"I am to retain this revolver for protection, and the key to my stateroom; Miss Carrington is also to retain her key. When you men desert the ship, which I know you plan to do, the Indian Chief is to be left in seaworthy condition. That's all."

"Enough, I should think. You must consider your services indispensable. However, I accept the terms, providing you agree to do what we ask in return."

"The same as before?"

"Yes."

"That I navigate the ship to within fifty miles of St. John's; notify you when we reach that point, and give you correct sailing directions."

"That is what we want."

"Nothing more?"

"Nothing I know of now."

"Good, I accept. Take your men out of the cabin."

I stood motionless, still gripping the revolver in one hand, listening to catch every sound the other side of the closed door. There was a muttered discussion, the words mostly inaudible, although I heard enough to convince me that McCann was urging acceptance of my conditions on the ground that it would be impossible for me, alone, and under surveillance, to add to their danger. Some words were added in so low a tone as to fail to reach my ear, but whatever they were, they evoked a laugh, and seemed to restore the dissatisfied to better humor. Liverpool took sides with McCann in the dispute, and the two united must have prevailed, for the men finally dispersed, and we could hear their heavy sea boots tramping up the stairs. The cabin became quiet as though deserted, although I had little doubt but that a guard had been left behind.

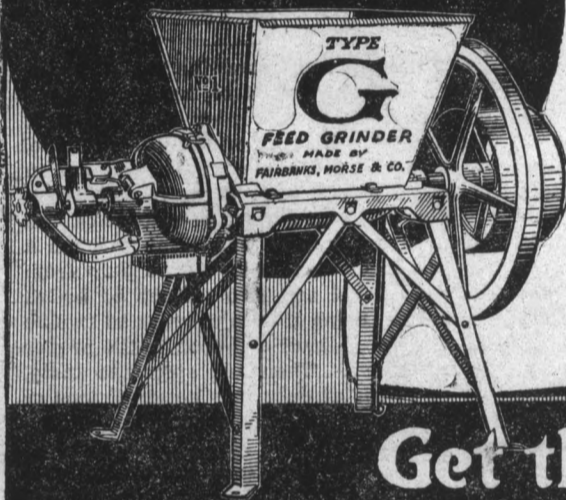
(Continued next week).

# You Need a Feed Grinder

## Buy a



### Farmers- Read This Fairbanks-Morse Letter



## FAIRBANKS, MORSE & CO.

(INCORPORATED)

Dear Friend:-

You've been reading a lot in your farm papers about the value of ground feeds and "balanced rations"-

Why don't you put that information to work for you?

The most economical ground feed is the feed you grind, yourself, in a Type "G" Feed Grinder - from the grain you raise on your own farm.

You can't buy a better feed grinder at ANY price - because it combines, with all of the good features of other grinders, the famous Fairbanks-Morse built-in quality - which you know.

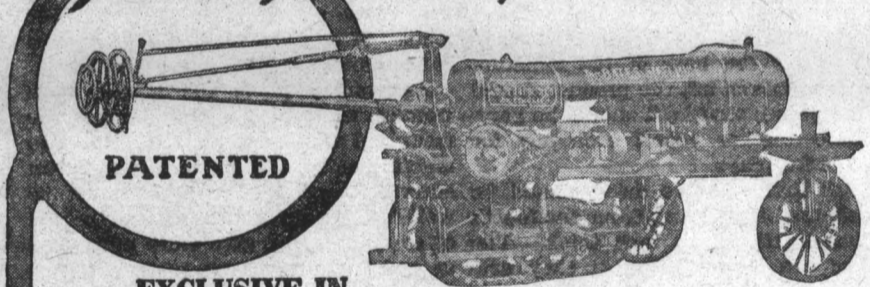
Your dealer carries the Type "G" in stock, because he knows it will meet your requirements.

Ask him to demonstrate it. See it in operation - examine it point by point - then you'll buy it, because you'll find in it the one big feed grinder value.

Cordially yours,  
FAIRBANKS, MORSE & CO.  
CHICAGO.

# Get the Best - the Type "G"

## The One Man Feature



PATENTED

EXCLUSIVE IN

## The Bates Steel Mule

FULLY COVERED BY PATENTS

The one man feature of the Bates Steel Mule makes this the most economical of all three-plow tractors as it is also the most powerful. It eliminates the need for a second man. And the wages and board saved soon pay for the "Mule."

### Imitators Dare Not Copy the "Mule's Tail"

Builders of other tractors recognizing the superiority of the Steel Mule's one man feature have tried to imitate it. But its principles are fully covered by patents. Others DARE not copy them or use it without making their customers subject to the patent infringement law. No other three or four wheel - and no other "crawler" type tractor can imitate the "Mule's tail" without infringing on our patents. This big feature is one of several which reduces the Steel Mule's operating cost to its extremely low figure.

### "Crawler" Delivers Most Power

The "crawler" is another big factor in the Steel Mule's remarkable popularity. This delivers more power at the drawbar than any round wheel tractor in the three-plow class can produce. Regardless of soil conditions, the "crawler" gets a firm grip and delivers a steady, even, powerful pull.

### Costs Little to Operate

The Steel Mule burns kerosene, a much cheaper fuel than gasoline - and gets ample power out of it to furnish a pull of 3,200 pounds. This economy plus the saving of one man's wages will quickly pay the present price of the "Mule." Over 13 D. H. F.

Reserve Now! Have your dealer reserve a "Mule" for you - but do it NOW before the present supply is entirely sold out.

JOLIET OIL TRACTOR CO., 299 Benton St., JOLIET, ILL.  
GEO. A. EATON, Lansing, Michigan, Distributor for Michigan



One Man Plows 10 Acres a Day

One Man Discs 30 Acres a Day

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## Is Your Truss a Torture?

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

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

As specialists of 30 years' experience we have perfected a comfortable, sure relief from hernia in the Brooks Rupture Appliance. Endorsed by thousands of physicians. Sent on trial to prove its worth. Made to your measure. Durable - cheap. Write today for measure blanks. BROOKS APPLIANCE CO. 494 State St. Marshall, Mich.

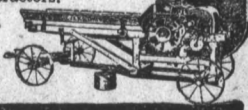


## Silver's "Ohio" Silage

Silver-cut silage is "different." Cut yours the "Silver" way. Make it mold-proof. Packs air-tight - ferments properly - makes better food for stock. World-record animals eat Silverized silage. Ask for book, on Silverized Silage - convincing proof.

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**Causes for Failure in Drying**

By GLADYS SOULE

A recent institute speaker in our community said: "Don't can anything that can be kept without canning, and don't dry anything that can be kept without drying." In other words, don't can up onions when they keep well in a dry cellar, and don't dry potatoes and turnips when they keep so well in root cellars. The same speaker gave it as her opinion that drying should be resorted to in comparatively few cases and with special products. A few cherries should be dried for use instead of raisins (the pits should be left in); apples and peaches should be dried, because they have such a good effect upon the health of the individual; corn and peas should be dried, because they may be more easily saved through drying than through canning.

I have tried drying various things and find that it fails largely for four reasons. Either the heat is applied too quickly, the pieces are too thick, the materials are not prepared thoroughly or the stuff is allowed to become contaminated by flies and millers.

The sun is the safest drier of them all, for Old Sol never scorches the product. But sun drying is very slow, especially if a few dark days follow in succession. Where much is kept in this way, stove drying is often followed instead. The usual inclination is to put the product into the oven or in a commercial drier and get the heat to going. Experience has taught that the heat should be kept as low as possible and the material should be frequently turned. If the heat is applied too rapidly, the result is that the outer part of the pieces becomes seared over and the moisture of the interior is "bottled" in. The stuff seems to be dry but in a few days it smells a little sour or becomes moldy. Examination shows that the interior is still soft and moist while the exterior is flinty and dry. After the bulk of the moisture has been driven off, the product should be tempered; that is, it should be poured into another vessel each day for four or five days.

Stuff that is to be dried should be sliced, the slices being from one-fourth to one-eighth of an inch thick. The pieces can be too thin but they usually are not. An ordinary vegetable slicer is very convenient to prepare materials ready for the drying trays. It is not satisfactory to have the vegetables to be dried more than one layer thick on the drying tray. In many cases, the molding that appears is caused from too great a depth of the product.

The root crops of which the carrot, beet, parsnip and turnip are examples must have special care in the preparation in order to make an edible dried product. These crops will retain the earthy flavor unless carefully washed, scrubbed and peeled (not scraped), and a single piece of contaminated carrot will spoil a whole container full of the dried carrot chips. It is desirable to blanch most of the vegetables and some of the fruits, such as apples. The blanching sets the milk in corn and makes it less pasty and soft to work with. It keeps the kernels entire and for this reason, hastens the drying and gives a better looking dried corn. The corn should be blanched on the cob for five or ten minutes, then cold-dipped and immediately cut from the cob.

After the products have dried until they are tough and leathery, the next thing is to store them. If sun drying

is resorted to, the drying pans or trays should be brought in about four o'clock and covered up until the next day. Most of the contaminating insects and moths fly in the evening. Place the dried stuff in wide-mouthed bottles, pasteboard boxes, paper sacks and in fact, anything that happens to be tight. Paper sacks can be made to exclude insect enemies by rolling them about in a pan of paraffin. Storing in small quantities will eliminate many losses. Good stuff in the winter should not be expected from scorched material or that which has been poorly prepared.

**APPLE BUTTER FROM WINDFALLS.**

Do you remember the apple butter "Aunt Mary" used to make? Nobody makes it any more, but why not try it this fall with your windfalls? To make, measure the apples, wash and cut in small pieces. For every bushel of apples add four gallons of water and boil until the fruit is soft. Rub through a screen or sieve, and to the pulp from one bushel add two gallons of boiled cider. Bring this to a boil, add twelve pounds of sugar and cook to the proper thickness. Then add spices to taste, and pour at once into hot fruit jars or crocks which have been boiled fifteen minutes.

Here is a good corn and tomato mixture, too: Mix thoroughly two parts of tomatoes to one part of corn, pack in hot, sterilized glass jars and add a level teaspoon of salt and a little sugar to every quart. Adjust rubbers and tops and submerge jars in boiler, covering tops at least two inches. Let water boil two hours, counting from time it begins to jump. Then remove jars, make air-tight, invert to discover leaks. If any are found put on a new rubber and boil again ten minutes.

As woman plans the meals, it is woman who must plan to save the meat and wheat which are just now so much needed. This does not mean starving your family. They must be well fed, but do it differently. Instead of so much meat, give more milk dishes and legumes, beans, peas, cowpeas, soy beans, lentils, etc. For the wheat substitute corn meal and barley. Everyone likes hot "Johnny-cake." Try the government way of making bread with part mashed potatoes instead of all flour. Think ahead and save.

**QUESTIONS EVERY MOTHER SHOULD ASK HERSELF.**

Did each child take about a quart of milk in one form or another?

Have I taken pains to see that the milk that comes to my house has been handled in a clean way?

If I was obliged to serve skim-milk for the sake of cleanness or economy, did I supply a little extra fat in some other way?

Were the fats which I gave the child of the wholesome kind found in milk, cream, butter, and salad oils, or of the unwholesome kind found in doughnuts and other fried foods?

Did I make good use of all skim-milk by using it in the preparation of cereal mushes, puddings, or otherwise?

Were all cereal foods thoroughly cooked?

Was the bread soggy? If so, was it

because the loaves were too large, or because they were not cooked long enough?

Did I take pains to get a variety of foods from the cereal group by serving a cereal mush once during the day?

Did I keep in mind that while cereals are good foods in themselves, they do not take the place of meat, milk, eggs, fruit, and vegetables?

Did I keep in mind that children who do not have plenty of fruit and vegetables need whole wheat bread and whole grains served in other ways?

Did each child have an egg or an equivalent amount of meat, fish, or poultry?

Did any child have more than this of flesh foods or eggs? If so, might the money not have been better spent for fruits or vegetables?

If I was unable to get milk, meat, fish, poultry, or eggs, did I serve dried beans, or other legumes thoroughly cooked and carefully seasoned?

Were vegetables and fruits both on the child's bill of fare once during the day? If not, was it because we have not taken pains to raise them in our home garden?

Did either the fruit or the vegetable disagree with the child? If so, ought I to have cooked it more thoroughly, chopped it more finely, or have removed the skins or seeds?

Was the child given sweets between meals, or anything that tempted him to eat when he was not hungry?

Was he allowed to eat sweets when he should have been drinking milk or eating cereals, meat, eggs, fruit or vegetables?

Were the sweets given to the child simple, i. e., unmixed with much fat or with hard substances difficult to chew, and not highly flavored?

Was the food served in a neat and orderly way and did the child take time to chew his food properly?

**HEALTH CREED FOR MICHIGAN BOYS AND GIRLS.**

My body is the temple of my soul, therefore:

I will keep my body clean within and without;

I will breathe pure air and I will live in the sunlight.

I will do no act that might endanger the health of others;

I will try to learn and practice the rules of healthy living;

I will work and rest and play at the right time and in the right way, so that my mind will be strong and my body healthy, and so that I will lead a useful life and be an honor to my parents, to my friends and to my country.—Public Health.

**SHORT CUTS TO HOUSEKEEPING.**

Bubbles sometimes appear in the can. Careful inspection will reveal whether this is due to a leak or not. If a leak, the can should be opened. If not, the bubbles will cause no trouble. They usually occur in material canned in syrup and may be caused by circulation in syrup during cooking.

Grass stains can be removed from any kind of goods by first rubbing the stain with molasses and afterward washing thoroughly in the regular way.—J. J. O'C.

For a bad burn take equal parts of flour and cooking soda, and water to make a thick paste. Bind on the burn quickly and it will relieve smarting and prevent blisters.—M. A. P.



THE following table gives the average estimates of our township crop correspondents in the various counties of the state on the yields of wheat, oats and rye, the condition of corn, beans, buckwheat, potatoes, sugar beets and apples, and the amount of fall wheat expected to be sown as compared with a normal acreage.

County.	Production.			Condition.							Wheat Sown.
	Wheat.	Oats.	Rye.	Corn.	Beans.	Buck-wheat.	Potatoes.	Sugar Beets.	Apples.		
Alcona	23	35	14	60	80	80	95	40	..	95	
Allegan	19	38	16	66	79	97	91	..	31	108	
Alpena	20	35	15	50	100	100	100	..	25	75	
Antrim	18	34	16	68	88	85	82	..	15	100	
Arenac	..	35	15	40	50	100	100	..	..	..	
Baraga	20	40	16	80	..	..	130	..	..	..	
Barry	16	43	14	87	90	..	90	..	50	120	
Bay	18	52	18	55	72	89	75	89	40	103	
Benzie	15	20	15	25	120	80	100	..	..	110	
Berrien	16	45	15	75	60	90	80	100	40	104	
Branch	21	40	19	25	60	85	110	..	55	110	
Calhoun	18	44	16	6	75	81	86	..	30	108	
Cass	17	40	15	78	91	94	97	..	35	109	
Charlevoix	17	30	15	71	87	94	99	96	25	115	
Cheboygan	20	31	17	71	99	101	101	94	30	121	
Chippewa	18	33	15	..	..	..	99	..	..	131	
Clare	18	40	15	84	98	89	104	100	35	80	
Clinton	25	40	..	60	90	..	100	100	50	100	
Crawford	10	15	10	70	50	100	100	..	20	100	
Dickinson	20	40	..	75	..	..	..	..	..	200	
Eaton	20	46	22	84	68	65	102	63	48	105	
Emmet	16	28	15	64	89	98	98	..	23	98	
Genesee	21	48	22	62	58	100	93	85	25	98	
Gladwin	30	50	22	50	50	95	95	80	30	100	
Gogebic	..	38	..	..	..	..	114	..	..	..	
Gd. Traverse	12	28	12	67	83	100	108	..	24	115	
Gratiot	24	46	16	60	75	90	100	94	47	112	
Hillsdale	20	40	19	83	82	75	97	..	50	87	
Houghton	35	60	25	67	75	95	95	75	80	105	
Huron	13	38	16	54	61	91	92	97	34	90	
Ingham	15	37	18	50	60	..	90	100	30	90	
Ionia	23	53	17	73	78	..	98	80	35	95	
Iosco	18	33	14	42	50	75	54	50	25	103	
Iron	25	60	50	90	80	..	110	80	75	125	
Isabella	16	42	14	70	86	90	100	100	44	105	
Jackson	20	41	20	75	76	100	86	..	41	107	
Kalamazoo	20	45	16	74	86	90	99	75	70	110	
Kalkaska	16	23	14	76	83	85	102	80	24	81	
Kent	19	43	15	72	99	80	100	..	54	109	
Lake	21	43	15	57	94	101	116	..	28	103	
Lapeer	20	44	18	58	61	88	94	80	18	107	
Leelanau	17	35	12	75	125	98	125	..	15	117	
Lenawee	23	48	17	78	82	100	98	..	22	109	
Livingston	19	49	17	76	70	87	102	77	45	111	
Luce	18	25	25	90	100	80	90	..	70	100	
Mackinac	25	30	..	100	105	100	100	..	105	100	
Marquette	25	25	15	..	..	100	105	..	70	..	
Manistee	14	28	15	83	95	97	91	..	32	110	
Mason	20	45	20	50	60	100	100	..	40	105	
Mecosta	22	47	18	70	92	105	117	..	47	107	
Menominee	25	40	25	..	120	100	100	140	33	..	
Midland	20	38	18	50	48	105	88	100	25	125	
Missaukee	18	38	15	57	95	95	107	..	18	122	
Monroe	21	45	20	73	79	85	73	95	29	106	
Montcalm	17	35	13	57	83	100	90	..	45	105	
Montmorency	15	40	12	75	110	100	125	..	40	110	
Muskegon	24	35	13	50	78	87	73	..	43	97	
Newaygo	17	35	13	66	85	92	106	..	40	118	
Oakland	16	39	17	73	72	85	88	..	15	110	
Oceana	16	31	12	71	93	98	115	..	41	113	
Ogemaw	23	41	18	75	80	92	95	..	42	103	
Ontonagon	20	35	..	..	70	..	150	..	50	75	
Osceola	16	35	15	90	81	89	85	..	40	96	
Oscoda	20	32	13	85	93	112	113	100	25	133	
Otsego	25	30	20	80	75	75	100	..	25	100	
Ottawa	24	39	19	54	73	72	88	..	38	100	
Presque Isle	24	39	19	54	80	..	96	80	30	110	
Roscommon	10	35	15	65	75	85	95	..	35	60	
St. Clair	20	35	15	42	76	76	68	43	22	103	
St. Joseph	18	37	17	83	73	89	84	..	36	102	
Saginaw	20	50	17	55	60	87	95	72	25	108	
Sanilac	18	40	15	65	45	75	85	82	20	110	
Schoolcraft	20	40	20	..	80	100	120	..	25	120	
Shiawassee	18	45	15	70	66	75	98	82	40	110	
Tuscola	18	47	17	60	70	80	97	77	15	115	
Van Buren	18	35	14	80	70	82	100	..	35	110	
Washtenaw	20	44	15	82	85	90	100	95	45	100	
Wayne	20	40	15	90	70	90	80	..	..	100	
Wexford	16	28	14	62	95	90	95	..	25	95	

**COLD STORAGE HOLDINGS OF EGGS, BUTTER AND CHEESE.**

Reports from 358 cold storages show that their rooms contain 6,425,810 cases of eggs, while on July 1, 418 storages reported 6,276,403 cases. The 312 storages that reported holdings on August 1, of this year and last show a present stock of 6,102,252 cases as compared with 6,060,129 cases last year, an increase of 42,123 cases, or 0.7 per cent. The reports show that during July, the July 1 holdings increased 2.6 per cent, while our last report showed that during June the June 1 holdings increased 35.4 per cent. Last year the increase during July was 5.3 per cent, and during June the increase was 21.3 per cent.

Reports from 310 cold storages show that their rooms contain 85,846,514 pounds of creamery butter, while on July 1, 323 storages reported 47,846,514 pounds. The 257 storages that reported holdings on August 1, of this year and last, show a present stock of 81,502,751 pounds as compared with

102,537,337 pounds last year, a decrease of 21,034,586 pounds, or 20.5 per cent. The reports show that during July, the July 1 holdings increased 75.4 per cent, while our last report showed that during June the June holdings increased 426.7 per cent. Last year the increase during July was 85.8 per cent and in June the increase was 675.2 per cent.

Reports from 340 cold storages show that their rooms contain 61,536,889 pounds of American cheese, while on July 1, 365 storages reported 31,933,953 pounds. The 218 storages that reported holdings on August 1 of this year and last show a present stock of 44,053,676 pounds as compared with 31,569,401 pounds last year, an increase of 12,484,275 pounds, or 39.5 per cent. The reports show that during July, the July 1 holdings increased 92.8 per cent, while our last report showed that during June, the June holdings increased 201.2 per cent. Last year the increase during July was 85.7 per cent and the increase during June was 136.2 per cent.

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**Hickory Knoll Rambouillets.** For sale a good heavy stock ram. A. E. Green, Orchard Lake, Mich.

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200 head to select from. Special prices on colts for August and September. Write Dept. E. The SHADYSIDE Farms, North Benson, Ohio.

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# Markets.

## GRAINS AND SEEDS.

September 4, 1917.

**Wheat.**—Traders are generally waiting for the beginning of government operations in this department of the grain market which has been announced to open on September 4. The opinion prevails that the government price of \$2.20 for No. 1 northern which was established under the authority of the food control law last week, will make the price of wheat this year. Speculation has vanished in wheat circles and attention of the operators has turned to the other grains. Millers are taking grain quite freely at some points with a few sales reported at figures above those set by the government. The government will start selling wheat to millers on September 10. A year ago the local price for No. 2 red wheat was \$1.48 per bushel. Last week's Detroit quotations were:

	No. 2	No. 1
	Red.	White.
Wednesday .....	2.17	2.12
Thursday .....	2.18	2.13
Friday .....	2.18	2.13
Saturday .....	2.18	2.13
Monday .....	2.19	2.14
Tuesday .....	2.19	2.14

**Corn.**—With the exception of north-western districts where the farmers have suffered slightly from frosts, the big corn crop has had another excellent week for development which has augured much toward making it a prospective record breaker. The demand for cash corn continues good, the only bearish factor in the dealing being the promise of a big crop. Very little corn is coming from the farms, producers having well cleaned up their surplus. High prices for meat is stimulating consumption of this grain. A year ago the price for No. 3 corn was 88½¢ per bushel. Local quotations for the past week are:

	No. 3	No. 3
	Mixed.	Yellow.
Wednesday .....	1.96	1.98
Thursday .....	1.98	2.00
Friday .....	2.03	2.05
Saturday .....	2.03	2.05
Monday .....	2.08	2.10
Tuesday .....	2.08	2.10

Chicago.—December \$1.11½ per bu; May \$1.07½.

**Oats.**—A slight increase in the delivery of oats at country elevators has been apparent during the past week, but the quantity marketed is far from what dealers expected it would be by this date. Besides being busy producers had fed unusually short of all concentrates and for summer feeding oats at present prices is an economical grain to use. Threshing is becoming general throughout the oat-producing states and the yields reported are quite satisfactory. A year ago the price for standard oats on the local market was 48¢ per bushel. Last week's Detroit prices were:

	Standard.	No. 3
	White.	White.
Wednesday .....	57	56
Thursday .....	59	58
Friday .....	58	57
Saturday .....	59	58
Monday .....	58½	57½
Tuesday .....	58½	57½

Chicago.—September 56¢ per bu; December 55½¢; May 58¼¢.

**Rye.**—This deal is slow with cash rye quoted at \$1.80 and September at \$1.78 per bushel.

**Beans.**—It has been rumored that the government has taken quite a block of Michigan beans for government uses but no price was named. Transactions in cash beans are small with the nominal price steady at \$7.25. October remains at \$6.50. The Chicago trade is easy at \$7.25 for hand-picked Michigan white; red kidneys \$6@6.25.

**Seeds.**—Prime spot clover \$12.75; October \$13.75; prime timothy \$3.90.

## FLOUR AND FEEDS.

**Flour.**—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$12.50; seconds \$12.20; straight \$12; spring patent \$14.80; rye flour \$12 per bbl.

**Feed.**—In 100-lb. sacks, jobbing lots are: Bran \$37; standard middlings \$42; fine middlings \$47; cracked corn \$78; coarse corn meal \$75; corn and oat chop \$60 per ton.

**Hay.**—In carlots at Detroit: No. 1 timothy \$16.50@17; standard timothy \$15.50@16; No. 2 timothy \$14.50@16; light mixed \$14.50@16; No. 1 mixed \$14@14.50; No. 1 clover \$13@13.50.

**Pittsburg.**—No. 1 timothy \$20.25@20.50 per ton; No. 2 timothy \$18@19; No. 1 light mixed \$17.75@18.25; No. 1

clover, mixed, \$16.50@17; No. 1 clover \$17@18.

**Straw.**—In carlots, on track Detroit, rye straw \$10.50@11; wheat and oat straw \$9.50@10.

## DAIRY AND POULTRY PRODUCTS.

**Butter.**—Demand active and market firm at 41¢ for fresh creamery extras. Fresh creamery firsts 39@39½¢.

**Elgin.**—Receipts are holding up well and demand continues good. Bid prices are 41½¢.

**Chicago.**—Market continues steady although conditions favor the buyers. Prices are slightly higher than last week. Creamery extras are quoted at 41½¢; extra firsts 41@41¼¢; firsts 39½@40½¢; packing stock 34½@35¢.

**Eggs.**—The supply is fairly good and demand firm. Prices are unchanged. Fresh firsts were quoted at 36@38¢ per dozen.

**Chicago.**—Feeling continues steady with only fractional changes in prices. Fresh Michigan firsts sell for 36@36½¢; ordinary firsts 34@34½¢; miscellaneous lots, cases included 33@36¢.

**Poultry.**—Poultry is in fair supply and market easier. Leghorns 23@25¢; hens 24@26¢; ducks 23@24¢; geese 16@17¢; spring geese 18¢.

**Chicago.**—The market continues steady with supply light. Prices are higher. Fowls sell from 21@22½¢; spring chickens 23½¢; ducks 22¢; geese 15@16¢.

## FRUITS AND VEGETABLES.

**Fruits.**—Plums 75¢ per peck basket; huckleberries \$4.50@4.75 per bushel; peaches \$3@3.25 per bushel for Elbertas.

**Chicago.**—Currants \$1.50@1.75; blueberries \$3@3.25 per 16-qt. case; pears, Clapp's Favorite \$5 per bbl; Howell \$1.50@1.75 per bu; peaches, Michigan Carmen's \$1@1.50 per six-basket case; plums, Michigans 75¢@1 per 16-qt. case.

**Apples.**—At Detroit Harvest apples are quoted at \$5.75@6.50 per bbl. At Chicago Michigan Duchess sell for 75¢ @1 per bushel, or \$3.25@3.75 per bbl; Astricans and Transparents \$3.50@4 per bbl.

**Potatoes.**—Potatoes held steady with prices at \$1.50@1.60 per bushel. At Chicago potatoes sell for 90¢@1.25 a bushel.

## WOOL.

During the past week the market has been very quiet, government purchases being the chief items of interest. The relationship of wool to the government national necessity measures are still undefined. Mills are holding off on liberal purchases and the amount of wool that they have on hand is surprisingly small. Growers and dealers have come to have more confidence in the present market values. Everybody seems to be awaiting developments. Fleeces sold on the Boston market at 55@85¢.

Chicago \$1.15@1.20 per bushel.

## LIVE STOCK MARKETS.

September 3, 1917.

### Buffalo.

Receipts here today as follows: Cattle 192 cars; hogs 20 d. d.; sheep 15 d. d.; calves 900 head.

With 192 cars of cattle here today the best grades of cattle sold about steady, but the medium and common kinds were very slow and in some cases lower. There was a strong demand for cows and all grades sold steady. There were not many good feeders here, and there was a strong demand, as there were several outside buyers here for them; also for the good stock bulls. We look for a fair run of cattle next Monday and about steady prices.

Receipts of hogs were scant, demand quite good and the general market but very little changed from the close of last week. A few loads of choice hogs sold at \$19.35@19.40, but proved out of line, bulk selling from \$19@19.25; pigs and lights \$17.50@18; roughs \$17.25@17.75; stags \$14@15.50. Close was steady and about all were sold.

With a light run of lambs today our market opened up active and prices 25¢ higher than the close of last week. All sold and we look for steady prices balance of the week.

Lambs \$16.50@16.65; yearlings \$12.50@14; cull to common \$11@15; wethers \$10.75@11.25; ewes \$10@10.50; bucks \$7@8; best calves \$16.25@16.50; common and light \$13.50@15.50; heavy \$12@15; grassers \$6@8.50.

### Chicago.

September 3, 1917.

### Cattle. Hogs. Sheep.

Receipts today.. 23,000 20,000 18,000  
Same day 1916.. 6,222 13,375 6,083  
Last week..... 67,480 34,045 51,443  
Same wk 1916.. 67,771 167,543 107,928

During the past week 12,905 cattle,

8,200 hogs and 11,638 sheep and lambs were shipped from Chicago, comparing with 14,959 cattle, 17,118 hogs and 34,387 sheep for the same time last year. Hogs received averaged 233 lbs.

Today, Labor Day, the killing departments of the Chicago packing plants are shut down, and the general demand for stock is slack. Prime cattle are higher than ever, with an early sale of nine carloads of Iowa steers at \$16.50 and two sales later of fancy steers at \$16.75. Fat cattle were steady, but others were slow of sale, and buyers were bidding 15¢ or more lower. The early hog market was steady, with an \$18.75 top, but later trade was dull at declines of 15@25¢ per 100 lbs. Sheep were steady, but lambs were off about 25¢, with the best killers and feeders offered taken at \$17.50.

Cattle made a brilliant record in high prices last week, with an extraordinary boom in the few strictly prime heaves offered. The previous week's highest price was \$15.50, but last week saw opening sales at \$16, three sales being made at that figure, while later in the day a sale was made of 17 fancy 1515-lb. steers at \$16.30. On Wednesday there were sales of 27 head averaging 1465 lbs. at \$16.40, while three sales were made at \$16.50, aggregating 73 head averaging 1357 to 1463 lbs. On that day there were sales of 23 prime 1093-lb. yearlings at \$16.25 and of 21 yearling steers and heifers mixed averaging 837 lbs. at \$16.15. Steers sold during the week largely at \$10.50 @15.25, with a very fair representation of \$15.50@16.50 steers on Wednesday, the high day of the week. Cattle selling at \$15.50 and upward came under the choice to extra class, with steers classed as good going at \$14 and over, while a medium grade of steers sold at \$12.50 and over. Ordinary to fair killing steers of light weight found buyers at \$10 and over, with scattering sales down to \$6.50@9.50 for inferior little steers on the grassy order. Yearlings of the choicer class went at \$15.50@16.25, with good yearlings selling at \$14 and over and sales down to \$11@12 for the commoner yearlings. Butcher cattle were in demand at \$6.65@10.50 for cows and \$6@13 for heifers, with cutters purchased at \$5.60@6.60, canners at \$5@5.55 and bulls at \$5.75@10.50. By Thursday weakness set in for the less attractive cattle, and the prices were largely lower for grass-fed light weight steers and for the cheaper grades of cows and heifers.

There was a good demand for calves at a high scale of prices, with the light weight vealers going at \$14.50@16.25 and sales of common to choice heavy calves at \$6.50@13.50. There was fair animation in the stocker and feeder trade, stockers selling at \$6.25@8.75 and feeders at \$7.75@10. Western range cattle were marketed very much more freely and ruled higher at \$6.75 @14 for steers. Advances in cattle were usually restricted to desirable corn-fed offerings, which sold 50¢@1 higher. Cattle receipts were liberal.

Hogs seem likely to go higher than ever, and \$20 per 100 lbs. may look low later, unless the receipts become larger. The offerings last week were remarkably meager, and other markets also received extremely light supplies. The demand was greatly in excess of the supply, and sharp advances in prices were of daily occurrence, all kinds of swine moving up rapidly. Provisions have participated in the upward movement, and everything in the line of cured hog meats or fresh pork is selling in the retail butcher shops at such high prices that consumption promises to be seriously checked in the near future. As shippers purchased a large percentage of the hogs offered, there were only about enough left for the local fresh pork trade. At the week's close hogs brought \$16.85@18.85 and pigs \$12@16.50, according to weight. A week earlier hogs sold at \$15.40@17.35.

Lambs, yearlings, wethers and ewes cannot be kept down in price, with such meager offerings and a good general demand, and recent sharp advances have taken place all along the line. There is an especially large call for feeding lambs from the range country, and most of the time these have sold higher than the best lambs purchased by the packers and smaller butchers. Receipts last week were not half as large as a year ago, and prices advanced 50¢ for most sheep and yearlings and most native lambs, while range lambs were 75¢@1 higher, the rise taking in both killers and feeders. Prices closed as follows: Lambs \$11@17.75, with best natives \$17; feeding lambs \$17@17.65; range yearlings at \$10.25@13; wethers \$10@12; ewes at \$4.50@11; breeding ewes \$9@17; bucks \$8@9.

Horses were in meager supply and in small demand last week at about former prices, but a much better trade is expected for September, and in all probability good purchases will be

made of horses for the United States army. Inferior to fair horses are selling on the basis of \$60@125, with drivers of any quality worth \$125@175, while drafters sell at \$185@265.

## LIVE STOCK NEWS.

The sheep industry is certainly paying big profits to the comparatively few stockmen who have not abandoned it, and, of course, there is a widespread desire among farmers to engage in it. Breeding ewes are much sought after, as are range feeding lambs, and both are in greatly inadequate supply and selling at far higher prices than were ever paid in past years. The best breeding ewes have been selling as high as \$16.50@17 per 100 pounds, while the best range feeding lambs have sold up to \$17 per 100 pounds, with buyers outbidding the packers. Southern stockmen are especially desirous of breeding sheep, and large numbers of breeding ewes have been distributed throughout the south. The range conditions have not been encouraging and lambs are largely of the feeder class. The agricultural bureau is urging farmers to grow more sheep for wool and mutton, as there is an especial need of wool at this time. In many places sheep are being used as lawn mowers for parks and private grounds.

Karl E. Magnuson, of Henry county, Illinois, marketed recently a consignment of short-fed cattle in Chicago, having partly substituted molasses feed for corn, with satisfactory results. He fed five pounds of this feed daily, and, instead of having to feed one-quarter to one-half a bushel of corn per head per day, the cattle showed good gains on one-tenth of a bushel of corn daily.

A short time ago George O. Strong, of Calhoun county, Michigan, purchased a carload of feeding cattle on the Chicago market for \$8.25 per 100 pounds, his intention being to feed fodder and grass up to the time that winter sets in, when he will feed silage until the time arrives for putting them on grass in the spring. He said silage is a prime feed for cattle, and he thinks they will thrive on it during the winter period. Not very much live stock is left in his part of Michigan.

P. J. Carolan, of Winneshiek county, Iowa, owns a herd of twenty head of grade Hereford and Shorthorn cows, from which he has two sources of income, calves and cream. He winters the herd on hay and silage and pastures them during the summer season. He is a firm believer in the farmer raising his own calves and says that at weaning time he has calves of even size and grade and as good as any he could pick up on the market. He says that when a farmer milks the cow and sells the cream he can raise good calves on the skim-milk and a small quantity of grain. Mr. Carolan has been in the habit of crossing pure-bred Hereford bulls on his cows, thereby producing calves showing good beef breeding. The calves show a predominance of Hereford blood and make good gains on grass, silage and hay. He has had in his pastures this summer 95 head of steers and heifers on 120 acres, and a short time ago he marketed 45 head of steers and heifers raised from his cows, being grass-fed and two years old. Owing to the low maintenance cost, he has found it profitable to hold cattle that long.

Extremely sensational hog markets have been witnessed in Chicago in recent weeks, enormous booms in prices being followed by as startling declines. The remarkable boom culminated with prime hogs selling up to \$20 per 100 pounds, being a far higher price than was ever attained in any former year. Turning backwards two years, it is found that the best swine were selling at that time for \$8, while at the same time in 1904 hogs sold for \$4.45@5.80. Pork has traveled the same road as the raw material, with sales as high as \$43.45 a barrel, comparing with \$27.05 a year ago, at about the same time hogs were making their high record. This was the highest price ever paid for pork, and lard and other lines of provisions made similar high records. Later hogs climbed off their high perch, and pork slid down at a lively pace, after leading packing interests had sold large quantities, according to general reports. Later on meager receipts of hogs caused new sharp advances, but the previous fluctuations of as much as \$1 per 100 pounds in a single day were not repeated. Whether hogs go higher than ever or lower, it may be taken for granted that extremely high prices are going to remain indefinitely, and owners can not take too good care of their swine that are doing well on corn. Late receipts have averaged in weight 230 pounds, comparing with 231 pounds one year ago, 246 pounds two years ago, 248 pounds three years ago and 230 pounds four years ago.



THIS IS THE LAST EDITION.

LIVE STOCK NEWS.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

DETROIT LIVE STOCK MARKET.

Thursday's Market. September 6, 1917. Cattle.

Receipts 3788. Canners and bulls steady; all others 25c lower; will go lower before week is over.

We quote: Best heavy steers \$10@11; best handy weight butcher steers \$3.50@9.50; mixed steers and heifers \$7.50@8; handy light butchers \$7@7.75; light butchers \$6.50@7.25; best cows \$7.50@8.50; butcher cows \$6.50@7; common cows \$5.50@6; canners \$4.50@5.25; best heavy bulls \$7.50@7.75; bologna bulls \$6.50@7; stock bulls \$5.50@6; feeders \$7.50@8.25; stockers \$6@7.25; milkers and springers \$50@95.

Sandel, S. B. & G. sold Breitenbeck 24 steers av 783 at \$7.25, 26 do av 836 at \$8.25; to Newton P. Co. 22 do av 800 at \$7.35, 19 do av 900 at \$7.35, 3 bulls av 923 at \$7.25, 3 cows av 950 at \$6.50, 7 steers av 720 at \$7.65; to Sullivan P. Co. 5 do av 868 at \$7.75, 28 do av 930 at \$8.25, 2 do av 735 at \$7, 1 ox wgh 1500 at \$8.50, 1 do wgh 1320 at \$7, 3 cows av 1100 at \$6, 23 butchers av 774 at \$7.75, 10 do av 832 at \$8.25; to Mich. B. Co. 3 cows av 1100 at \$7.25, 2 bulls av 1285 at \$7.50, 2 do av 1000 at \$7.25; to Culver 6 heifers av 583 at \$7.25; to Walk 11 butchers av 604 at \$6.60, 5 do av 506 at \$6.35; to Applebaum 10 do av 613 at \$6.40; to Graves 9 do av 483 at \$6.50, 5 do av 734 at \$7.65; to Thompson 4 do av 715 at \$7.50; to Goodgold 13 do av 380 at \$5.50; to Bray 2 cows av 1000 at \$6; to Masch B. Co. 21 steers av 965 at \$9.25, 20 do av 772 at \$7.70, 12 cows av 912 at \$6.50, 3 do av 833 at \$5; to White Bros. 24 do av 820 at \$5.75; to Costello 8 butchers av 704 at \$6.75.

Erwin, S. & J. sold Thompson 1 steer wgh 970 at \$9.50, 1 bull wgh 980 at \$7; to Graves 14 steers av 785 at \$8, 4 do av 690 at \$7.75, 5 do av 736 at \$7.75; to Sullivan P. Co. 2 cows av 1060 at \$7, 4 butchers av 1112 at \$7; to Applebaum 4 do av 552 at \$6.60; to Bray 2 cows av 1050 at \$7, 4 do av 865 at \$5.50; to Kamman B. Co. 7 steers av 837 at \$8; to Smith 4 feeders av 790 at \$7; to Thompson 10 steers av 913 at \$9.50; to Sullivan P. Co. 13 do av 923 at \$9.50, 2 do av 880 at \$8.50, 2 cows av 985 at \$8; to Bishop 19 stockers av 583 at \$6.70, 5 do av 790 at \$7; to Mich. B. Co. 9 steers av 864 at \$8.25, 5 do av 770 at \$7, 16 do av 722 at \$8, 30 butchers av 660 at \$6.70, 6 cows av 945 at \$7, 2 bulls av 760 at \$6.75, 2 steers av 800 at \$8.

Veal Calves.

Receipts 697. Market steady. Few choice \$16.50; bulk of good \$15.50@16; others \$7@14.

Sandel, S. B. & G. sold Thompson 6 av 155 at \$16, 2 av 135 at \$15.

Erwin, S. & J. sold Parker, W. & Co. 6 av 120 at \$13.50; to Thompson 3 av 210 at \$12, 7 av 180 at \$16, 2 av 125 at \$15.

McMillen, K. & J. sold Parker, W. & Co. 10 av 162 at \$14.50, 6 av 375 at \$9, 7 av 180 at \$15; to Mich. B. Co. 7 av 150 at \$15.50.

Sheep and Lambs.

Receipts 4571. Market steady. Best lambs \$15.50@16; fair lambs \$13@15; light to common lambs \$11@12.50; fair to good sheep \$8.50@9; culls and common \$5@7.50.

Bishop, B. & H. sold Swift & Co. 20 lambs av 85 at \$15.50, 198 do av 80 at \$16; to Newton P. Co. 23 do av 65 at \$14, 26 do av 60 at \$14.50; to Sullivan P. Co. 15 sheep av 105 at \$8.50; to Newton P. Co. 7 lambs av 62 at \$14; to Sullivan P. Co. 31 do av 65 at \$14; to Nagle P. Co. 2 sheep av 100 at \$9.50, 36 lambs av 70 at \$15.50, 13 sheep av 95 at \$8.75; to Sullivan P. Co. 84 lambs av 83 at \$16, 14 sheep av 110 at \$8, 26 lambs av 95 at \$14; to Parker, W. & Co. 78 do av 70 at \$16, 37 do av 70 at \$16, 2 yearlings av 110 at \$13, 13 lambs av 80 at \$16; to Swift & Co. 61 lambs av 75 at \$15.75, 114 do av 77 at \$16; to Rhinehart 98 do av 60 at \$14, 46 do av 55 at \$14, 11 do av 45 at \$13.50; to Swift & Co. 141 do av 70 at \$15.75, 104 do av 75 at \$16; to Hammond, S. & Co. 18 do av 65 at \$14.

Sandel, S. B. & G. sold Thompson 20 lambs av 55 at \$13.25; to Sullivan P. Co. 49 do av 65 at \$14, 8 sheep av 115 at \$7.50, 60 lambs av 75 at \$15.25.

McMullen, K. & J. sold Mich. B. Co. 28 lambs av 60 at \$14.25, 130 do av 78 at \$15.50, 40 do av 60 at \$14, 42 do av 80 at \$15.75, 10 sheep av 132 at \$9.50, 6 do av 125 at \$8.50, 9 do av 115 at \$7.50, 28 lambs av 85 at \$15.60, 31 do av 60 at \$13.

Hogs.

Receipts 2120. Pigs steady at \$15@16; mixed hogs 25@50c lower at \$16.75@17.75.

On a late Monday sales were made on the Chicago market of prime beef cattle, including small yearlings, long yearlings and weighty long-fed steers, at from \$16@16.30 per 100 pounds. Cattle averaging only 900 pounds brought \$16. As the previous high-water mark stood at \$15.50, the best steers showed an advance of 80 cents per 100 pounds. Surely this is going it some and it is a good illustration of the eagerness on the part of the packers and smaller butchers to get hold of prime beef cattle. Transactions of this character certainly show that experienced stockmen who practice making prime beeves are reaping liberal profits, and farmers who own plenty of land are finding it pays well to have big tracts devoted to pasturage. For instar e, there is H. R. Boyden, of Ringgold county, Iowa, widely known as a farmer who believes in owning plenty of pasture land and always using it. He has several hundred acres devoted to permanent pasturage, and this land has been so used for fifteen to twenty years. He intends to leave all this large tract of land in grass, although it would yield from sixty to seventy bushels of corn to the acre if plowed up. He says bluegrass sod is too hard to get, and he has other tracts he can till. Mr. Boyden recently marketed cattle that had been on his farm for two years, having been calves when he bought them. He has plenty of roughage and always keeps cattle for utilizing it.

A short time ago W. P. Carpenter, of Atchison county, Missouri, marketed in Chicago fifty head of strictly choice branded Hereford cattle which averaged in weight 1363 pounds at \$15.50 per 100 pounds, having bought them as feeders last January in the Denver stock show. On the same day Ollie Arthur, of Edgar county, Illinois, marketed in Chicago a carload of prime fate cattle which averaged in weight 1387 pounds at the same price. The Arthur cattle were fed shock corn and clover hay up to the first of March, and after that were put on a full feed of corn on grass. They were on feed for 18 months, were in good flesh and were coming three-year-olds. They were of mixed weights, some of them being quite heavy.

Some of the dairymen of Kane county, Illinois, are talking of going out of the industry and engaging in feeding cattle for the market, and one of them says he has already made the change. They claim that milk does not sell high enough in view of the cost of feed, labor and cows to make the industry a profitable one.

Some of the Minnesota stockmen are feeding rations of half corn and half soaked barley to their hogs with highly satisfactory results. The Minnesota pig crop is reported as only about two-thirds of a normal one, and stockmen are exerting themselves to make their hogs as valuable as possible.

The Union Stock Yards & Transit Co., of Chicago, is selling corn to be fed to stock in the yards at \$2.50 per bushel, and timothy and clover hay at \$30 per ton.

The Chicago Live Stock Exchange has adopted the following amendment to its rules: "No live stock shall be fed after the sale has been made except as agreed between buyer and seller, provided that in the event that live stock is not weighed the same day of sale, that the salesman shall have the privilege of feeding and watering such live stock a reasonable amount until same is weighed."

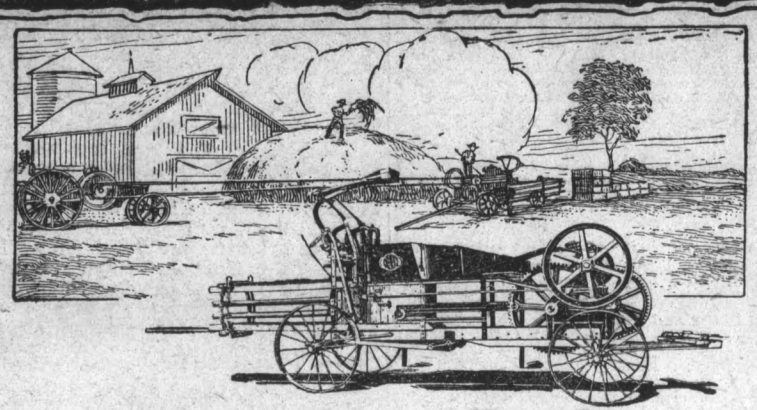
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Big Type O. I. C'S, & Chester Whites. Special prices on all boar pigs for the next 30 days. Will sell sows only when bought in pairs. These pigs are sired by our three Champion boars that have not an equal in the country. School master King of the breed Crandell's wonder & Callaway Edd both champions. All stock shipped on approval, satisfaction guaranteed. Get our catalogue. Harry T. Crandell & Son, Cass City, Mich.

O. I. C. & Chester White Swine. Strictly Big Type, with quality. One yearling sow & two gilts bred for Sept. farrow. Guaranteed safe with pig. I have the finest lot of early Spring pigs I ever raised, can furnish a few in pairs not akin. Address, NEWMAN'S (STOCK) FARM, Marlette, Mich. R. 1.

O. I. C. An extra fine lot of last spring pigs, either sex and not akin, from good, growthy stock. Farm 1/2 mile west of depot. Otto B. Schulze, Nashville, Mich.

BOARS

Big growthy fellows. The kind that pleases. ship C. O. D. and pay express. J. CARL JEWETT, Mason, Mich.

O. I. C. Boars and Gilts all sold. I am booking orders for March and April pigs either sex, single, or in pairs not akin. A. J. BARKER, Belmont, Mich. R. R.

O. I. C. Thorough bred O. I. C. Swine all sold out except fall pigs. O. D. Somerville, Grass Lake, Mich. R. D. 4.

O. I. C'S. All sold. Booking orders for the best of our winter and spring pigs. C. J. THOMPSON, Rockford, Michigan

O. I. C'S. Spring pigs and Reg. Holstein heifers for March and April pigs either sex, single, or in pairs not akin. CL OVER LEAF STOCK FARM, R. 1, Monroe, Mich.

P. G. SWINE Big boned Apr. boars. Sows bred for fall farrow. Satisfaction guaranteed. R. W. Mills, Saline, Mich.

BIG TYPE POLAND CHINAS

For Sale from the CHAMPION and GRAND CHAMPION and our other GREAT HERD BOARS and big STRETCHY SOWS of very best breeding and individuality. HILLCREST FARM, F. B. Lay, Mgr. Kalamazoo, Mich.

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LARGE Type P. C. Largest in Mich. Spring Boars ready to ship. The kind that make good. Come and see the real big type kind. Expenses paid if not as represented. Free livery from Parma. W. E. LIVINGSTON, Parma, Mich.

Big Type Poland Chinas: April and May pigs, healthy and growthy: Prices right. L. W. BARNES & SON, Byron, Mich.

LARGE Strain P. C. everything sold except 1 husky Yearling boar that is long, tall & deep. 1 extra choice fall boar. H. O. SWARTZ, Schoolcraft, Mich.

LARGE type P. C. Some very choice summer gilts bred to farrow in August. Will sell 1 of my yearling herd boars. W. J. Hagelshaw, Augusta, Mich.

Large Stiled Poland Chinas, fall and spring pigs, at farmers prices. B. P. Rock eggs \$1.50 per 15. Robert Neve, Pierson, Mich.

POLAND Chinas bred gilts all sold, still have some choice fall pigs of large and medium type, at farmers prices. P. D. LONG, R. 8, Grand Rapids, Mich.

Big Type Poland Chinas Sept. farrow, either sex, sir hog. A. A. WOOD & SON, Saline, Michigan

Big Type Poland China boar now ready to ship, buy now and get choice. G. W. HOLTON, KALAMAZOO, MICHIGAN.

HAMPSHIRE Boar pigs only for sale \$15 and up as to age. JOHN W. SNYDER, R. 4, St. Johns, Mich.

FOR SALE

Yorkshire Sows and Gilts, bred for fall farrowing. Also boar pigs for fall service. Waterman & Waterman, Meadowland Farm, Ann Arbor, Mich.

SHEEP

Shropshire Ewes Good ones 5 & 6 years old \$30.00 each. Yearling rams & ram lambs \$35 up. KOPEKON FARMS, Coldwater Mich. Sheep at Lupton, Ogemaw County.

Standard Delaine Rams Big fellows with splendid heads, Legs and fleeces. C. R. PARSONS, Saline, Mich.

Shropshires Big, early, reg. ram lambs, for coming fall trade, sired by imp. Nock ram. Milo M. Gibson, R. 5, Lapeer, Mich.

For Shropshire Yearling or Lamb Rams and P. C. Hogs, write or call on ARMSTRONG BROS., R. 3, Fowlerville, Mich.

Shropshire Ram Lambs, nose to toes. A. E. BACON & SON, Sheridan, Mich.

Additional Stock Ads on Page 205



## POULTRY.

## Homestead Farms

We have a special offer which will interest poultry people who want Laying Hens for Winter. Since we do not feel that we can dispose of any more Pullets, we have decided to offer for immediate sale:

## 300 Laying Yearling White Leghorn Hens

These are from our choice colonies which as Pullets began laying last September (see descriptive circular), and which are still laying. Favorable prices in lots from 6 to 50 for immediate sale. Also other stock as follows:

## Yearling Hens

Brown Leghorns, Barred Plymouth Rocks (limited) White Wyandottes, Rhode Island Reds, Rose Comb Black Minorcas.

## Yearling Cocks and Cockerels

Barred Plymouth Rocks, Rhode Island Reds, White Wyandottes, Single Comb Black Minorcas, White and Brown Leghorns, Anconas.

## Geese and Ducks

50 Fine Young White Pekin Ducks.  
30 Young Gray Toulouse Geese.

All of these are pure breed practical poultry which daily prove their practical value in the direct market for poultry and its products which we have begun to build up.

Everything we sell is guaranteed; each customer is to be fully satisfied. Do you want some of these Yearling Hens or some of the Young Ducks or Geese? They are to be sold at once.

We are planning for a more extensive sale of Day-Old Chicks next Spring, so that all orders may be filled.

HOMESTEAD FARMS, Bloomingdale, Mich.

## 2000 - Pullets - 2000

## "200 Egg" Pedigree White Leghorns

"Bred-to-lay" Strain.  
These vigorous, May-hatched pullets will be laying in a few weeks. These birds of quality are the choicest ever offered for sale. Price in hundred lots, \$1 each, for one week only. Our White Leghorns lay large, white eggs, and plenty of them. They are bred right. Book your order at once. Thousands of satisfied customers. Catalogue.  
MICHIGAN POULTRY FARM, Lansing, Michigan  
"Michigan's Largest Poultry Farm".

## Yearling Hens For Breeders

S. C. White, Buff and Black Leghorns at \$1.00 each. SUNNYBROOK FARM, Hillsdale, Mich.

JOHN'S big beautiful hen-hatched Barred Rocks, good layers. Breeding pens (5 birds) \$10 to \$20. Eggs \$3, \$2.50, 100, \$7. Circulars. Photo. John Northon, Clare, Mich.

Barred Rocks: EGGS FROM STRAIN with records to 297 eggs a year, \$2 per 15. Delivered by parcel post, prepaid. Circular free. Fred Astling, Constantine, Mich.

Barred Rock Hens Great Layers first class breeders 10 for \$25.00.  
W. C. COFFMAN, R. 3 Benton Harbor, Mich.



## Ferris White Leghorns

A real heavy laying strain, trapnested 17 years, records from 200 to 264 eggs. Get our special summer prices on yearling hens, breeding males, eggs for hatching, 8-week-old pullets and day old chicks. We ship C. O. D. and guarantee results. Catalog gives prices; describes stock; tells all about our farm and methods; results you can get by breeding this strain. Send for your copy now—it is free.

GEORGE B. FERRIS 934 Union, Grand Rapids, Mich.

Fowlers Buff Rocks. Eggs one half price for half of season.  
\$ .75 for 15; \$1.50 for 30; \$2.00 for 50; \$3.50 for 100.  
R. B. FOWLER, Hartford, Mich.

Buff Leghorns. August sale 25 hens one dollar each. 16 two dollar hens and cock bird for \$40.00.  
Dr. William A. Smith, Petersburg, Mich.

Laybill S. C. W. Leghorns Large, great layers. Pure white. Bargains in choice breeding hens now. Everfresh Egg Farm, Ionia, Mich.

Pine Crest S. C. White Orpingtons, special sale of year old cocks and hens, also young cockerels. MRS. WILLIS HOUGH, PINE CREST FARM, Royal Oak, Mich.

Pure Bred W. Plymouth Rock Cockerels and Mammoth W. Pekin Ducks and Drakes for sale. Buy early.  
CHAS. KLETZLEN, Bath, Mich.

RHODE ISLAND REDS and PLYMOUTH ROCKS Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 10 lbs. age 15 for \$1.00; 100, \$5; 120, \$6.00. Mammoth Bronze Tom Turkeys, 8 to 28 lbs. according to age \$6 to \$25, 10 eggs \$3. A. E. Cramton, Vassar, Mich.

R. and S. C. Reds. Good breeding hens at \$1.50 each for short time. Also Belgian Hares. O. E. Hawley, Ludington, Mich.

R. I. Red Summer Sale. Rose Comb cocks and hens. Single comb hens and pullets. All at bargain prices. Cockerels after September 15th.  
INTERLAKES FARM, Box 39, Lawrence, Mich.

R. C. Br. Leghorn Cockerels, Pekin Ducks, W. China Geese. Order early, the supply is limited.  
MRS. CLAUDIA BETTS, Hillsdale, Michigan

Silver Spangled Hamburg Eggs setting \$1.50 Balance season, young Belgian Hares pedigreed \$6.00 pair. Pedigreed Persian Kittens great hunters \$10 each. Send stamp. Riverview Farm, Vassar, Mich.

S. C. W. Leghorn hens for breeding \$1.50 each. Cockerels from trap nested stock we have them priced \$3 to \$5 each. O. S. Starkevart & Sons, Ypsilanti, Mich.

SILVER Golden and White Wyandottes. Choice breeding stock of sale after Oct. 1st, a few bargains in yearling hens. C. W. Browning, R. 2, Portland, Mich.

S. C. W. Leghorns. April Hatched. Standard Bred Cockerels on free range at \$2.00 each. White Line Poultry Farm, Hillsdale, Mich.

WHITE Wyandottes. A. 1 layers. Eggs for hatching, \$1. \$2. \$3 for 15, \$7 per 100. Special matings \$5 for 15. DAVID RAY, 709 Norris St., Ypsilanti, Michigan.

## DOGS

Fox Hounds of all ages, Skunk and Rabbit dogs. Send 2c stamp.  
W. E. LECKY, Holmesville, Ohio

AIREDALE PUPPIES, females, 10 weeks old. \$5. Pedigree furnished. Paul Povenz, R. 3, Holly, Mich.

THOROUGHbred COLLIES "Natural Healers." Ernest Williams, Edmore, Mich.

## Poultry Query Department

## Ducks Have Digestive Troubles.

Am writing you in regard to my little ducks. They began to get sick when about two weeks old. At first I thought the sun was too warm for them and so I moved them where they would be in the shade more. Some of them get weak in legs, as if their legs were broken, and others get so weak they can hardly walk. They have spells that they fall over backward and squawk as if they were having a fit, and run around the pen as if they were crazy. Their eyes stick shut (not swollen), and when I wet and open them there is a white flake like corn meal that comes out. If they live very long they get blind. They sit around and won't eat much, and finally die. I had over 60 and over half of them are dead. Several of my neighbors are losing theirs and they have the same symptoms as mine, as near as I can find out. I feed corn meal and bran and proportioned it different and thought it would make a change. They have gravel and plenty of water (with the chill off), and a warm place to sleep.

Hillsdale Co.

W. M.

The trouble with your ducks is a digestive one which probably results from their eating food which had been left over from one meal to another and has become contaminated; this, and the hot sun are the chief causes of

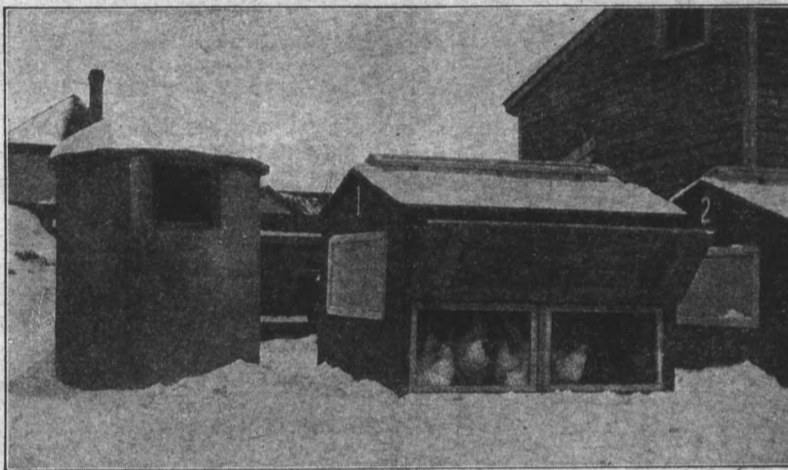
of a pea just below the vent. The ointment should be thoroughly rubbed in, otherwise the bird may pick it and get poisoned. Of course, good lice powders are also effective if thoroughly applied.

Thoroughness and eternal vigilance are necessary in the control of these external parasites of poultry. However where proper methods are used there should be no trouble in controlling them.

## A PRACTICAL CHICKEN SILO.

Eleven eggs from a pen of twelve pullets three times in six weeks in December and January is the record achieved by Mr. E. W. Doak, of Escanaba, Michigan. Mr. Doak was enabled to secure these results by having an abundance of green feed.

The green feed question has been a stumbling block to many poultry keepers who wish to secure a maximum of winter eggs. Many welcomed the advent of the oat sprouter as a remedy, but many, like Mr. Doak, found the work of sprouting oats for a big flock to be very irksome. None, however,



A Chicken Silo Solves the Winter Green Food Problem.

trouble with ducklings. One of the essentials in feeding ducklings, which you probably know, is the keeping of plenty of water near by at feeding time, so that the ducklings can wash the dry feed down. Some successful duck feeders feed everything in water or whey, and after the ducks are done eating everything is thrown away.

## Lice and Mites.

I would like your opinion about getting rid of mites. Have been spraying with kerosene but in a few days they are as bad as ever and do not even leave the chickens in the daytime. What can I use to get rid of the pests on the roosts and chickens. Have them roosting outdoors but are as bad outside as in.

Monroe Co. T. T. S.

Your hens are probably troubled with lice as well as mites and it will be necessary to dust them or apply mercurial ointment as well as to spray the coops.

The most effective way to control the mites is to spray the coop thoroughly with a mixture of three parts of kerosene and one part crude carbolic acid. The advertised coal tar disinfectants used as sprays are also effective, but to make any spray application effective in a coop where the mites are very bad the spray should be repeated every few weeks.

Carbolineum used as a paint on the roosts, nests and droppings boards is also very effective. The chickens should be kept out of the coop for at least a day when the carbolineum is used.

Thoroughness is very essential in the control of the mite, and therefore before spraying the coop should be cleaned of all droppings and other litter.

For lice the best treatment is blue ointment, which can be purchased of druggists. Ask for blue ointment U. S. P. and apply a piece about the size

grow rapidly, big-boned and have the best plumage, should be marked now and held for future breeders. Breeding from inferior turkeys is the same as breeding of any other stock undersized and weak.

During the late summer and early autumn is an important stage in the life of the young turkeys. At this time they are so apt to wander far and forget to come home at night. Drive them home every night for a week, never allow them to stay out and they learn the trick of coming home. When out on the range they will go a long ways to find water. Keeping plenty of fresh drinking water handy makes home more attractive. An impure water supply is a frequent source of disease with turkeys. The stagnant water such as they get when streams are low, or around stables in a warm, dry time, is bad for them.

Turkeys grow fast and are voracious eaters and they get too much food and not enough exercise when they hang around waiting to eat with the chickens. We never allow them to form this habit. Keep them going out on the range as long as possible. Picking up a grain here and there is the natural way for a turkey to eat and there is no danger of the digestive mill becoming clogged. The digestive organs must have a chance to develop as the turkey grows, then they are better able to do their work when liberal feeding is required later on.

Turkeys grow fast when they get old enough to eat whole corn and a little corn helps to bring them home at night, but we are careful not to feed too much till the weather gets cooler and fattening time approaches.

Size must be maintained with turkeys, but we need not worry about the size or the weight at maturity if we can secure thrift and large frames now. The rangy big-boned birds look slender now, but if they have plenty of range they are sure to develop into large birds that will meet all market requirements.

Indiana. FRANCES WOOD.

## FRESH AIR AND SUNSHINE FOR POULTRY.

The "fresh air and sunshine" rule, now so liberally applied to the building of homes for humans, can be applied with just as much benefit to houses for hens, in the opinion of the poultry husbandry department of the Michigan Agricultural College.

The question, "How much open front should be allowed, and how much glass used?" is one frequently asked by builders of poultry houses, the department says. A house 20x20 feet, or one having a floor area of 400 square feet, should have fifty square feet of wire screen, one-fourth inch mesh, and twenty-five square feet of glass. An opening twenty feet long and two and one-half feet wide, placed ten inches from the floor, is about right. Cover this opening with one-fourth inch mesh galvanized wire—the kind of screen used by masons for sifting sand. We use this mesh because it prevents snow from drifting through and keeps the rain from beating in. Four window sashes with nine lights, each eight by ten inches, will serve for windows. Place the windows either above the screen or in the west end of the house.

Use a good gravel floor, one that can and will be renewed every year, or use boards or cement. If gravel is employed, cover the floor with one-inch mesh poultry wire and then fill in above it with eight to ten inches of gravel. This wire will prevent rats from gaining admittance to the house from below. If board floor is used, put the house up ten inches to a foot above the ground and leave it open beneath. If a cement floor is used, build it with a rough surface and cover it eight to ten inches deep with straw.

found the solution of the problem as Mr. Doak did.

While reading an article in a farm paper on ensilage for cattle, he was suddenly struck by the thought that perhaps ensilage would be good for poultry also. His thoughts soon took definite form and he built a silo on purpose for his chickens, which is thought to be the first silo ever built for that express purpose.

The silo is three and a half feet in diameter and eight feet high, three and a half feet of which are underground. The bottom is of cement. The framework is made of two-by-two's set vertically one foot apart. To these laths are nailed diagonally, inside and out. A coat of hair plaster is applied on each side and over this a coat of cement. The roof is made of thin boards covered with tar paper roofing and is removable. A hole is left in the roof till after the silo is filled, then this is covered with roofing. A small door near the top affords a way to take out the ensilage. This hole is lathed and plastered on the inside before filling the silo. This enables it to be filled clear to the top. When ready to take out, the ensilage has settled enough so the lath may be knocked off.

Almost any kind of green feed can be used for the ensilage, but Mr. Doak prefers golden bantam sweet corn with as many ears as possible, mixed about half and half with lawn clippings. He uses an ordinary hand cutting box for cutting the corn, but on a larger scale the power outfits should be used.

Wayne Co.

H. SPOONER.

## SUCCESS WITH TURKEYS.

If one would build up a profitable flock of turkeys it is essential that only the finest and most vigorous birds be kept for breeders. The birds that



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Think of what this means in saving of time and labor. You get a better seed-bed too, by using the famous

**Cutaway Double Action Disk Harrow**

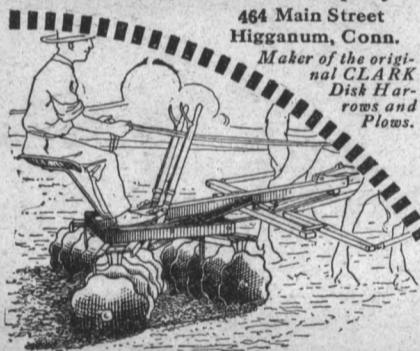
The rigid main frame makes the forged disks double cut, pulverize and level the ground. Closehitch. Lightdraft. All sizes.

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Maker of the original CLARK Disk Harrows and Plows.



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The original and the up-to-date Standard Veterinary Remedy for Heaves; free booklet explains fully. 35 years sale and veterinary use.

**CURES HEAVES BY CORRECTING CAUSE—INDIGESTION. IT'S A GRAND CONDITIONER AND WORM EXPELLER**

Safe. Most economical. Excellent for Cattle and Hogs. \$1.00 per can at dealers, at same price by parcel post.

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**MINERAL HEAVE COMPOUND** CURES HEAVES

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MINERAL HEAVE REMEDY CO., 463 Fourth Ave., Pittsburg, Pa.

High Grade  
**Rosen Rye**

\$2.50 PER BUSHEL  
Winter Vetch Seed \$10 Per Bushel, Sacks Free.

Orders Not Accepted for Less Than One Bushel.  
**Dorr D. Buell, Elmira, Mich.**

Mention The Michigan Farmer When Writing Advertisers

## Grange.

THE GRANGE AND THE FARMER.

The Grange should represent agriculture, indeed this is its most important function. It should be the organ through which the man and his family on the farm, acquire information and disseminate it to others. It should be the medium through which farmers as a class, or in individual groups, make known their wishes, their needs, and their demands. It should be a great school in which many important things pertaining to the welfare of people in the country are taught. It should be, at all times, a splendid forum in which agricultural questions, questions of rural betterment, and questions relating to the welfare of the state and nation, be freely discussed.

In times of stress, in seasons of national anxiety, the farmers should be able to use the Grange, and the nation at large should look to it as competent and trustworthy in voicing the needs and the sentiments of agriculture.

Never before in our history did farmers occupy so important a position in the nation. The world needs food today more than ever before in the memory of the writer. Hungry nations are looking to the farmer for relief. To grow the products of the farm requires labor, labor is scarce and hard to find. The question of what to grow is also important and must be considered from the standpoint of labor involved as well as from the requirements of the public. Most of our farmers are overworked, those who perform the labor of the household, in many cases, are more weary than they who toil in the fields.

Last spring, we were promised large numbers of factory hands, who would leave their jobs in town to assist the farmer, in seasons when the work was very pressing but I could never think of these plans without wondering how the extra work inside the house was going to get done. I have been pretty nearly all over Michigan among the people of the country, and I can shut my eyes at any time and see thousands of tired men and women past middle life, their sons and daughters gone to the city, and they toiling day by day at their individual tasks, in many cases because they must, and in others, because they believe that farming is their work in the world and they are determined to do it the best they can.

In this season of food shortage the condition of the average farmer is a matter of national importance, not especially upon his account, but because of his relation to those who need and must have the product of his labor.

For this reason, both the state and the nation are coming to his aid to a degree never before experienced.

The United States Department of Agriculture and State Agricultural Colleges, seem to be working overtime to furnish him with information and practical suggestions. The great newspapers are devoting much space to matter pertaining to agriculture and, in short, everybody seems anxious to help in this time of the nation's need. But to use Brother Horton's expression, "The farmer must be in at the hearing." The farmers of Michigan should find the Grange an instrument through which their needs may be made known and their power to measure up to their demands made upon them increased.

The question of farm labor should be discussed thoroughly in every Grange, if important conclusions are reached they should be published for the information of the public.

Doubtless more wheat will be sown in Michigan this fall than ever before in the history of the state, the preparation of the seed bed for this crop is of vast importance. Many otherwise good farmers are not wheat grow-

## Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. J. S. Brown, Howell, Mich.

**Associational Motto:**

"The skillful hand with cultured mind is the farmer's most valuable asset."

**Associational Sentiment:**

"The Farmer: He garners from the soil the primal wealth of nations."

FARMERS' CLUB FAIRS.

Of the special features which have been adopted by local Farmers' Clubs by way of varying the trend of their meetings probably none have been more universally popular than has the Farmers' Club Fair. It is a noticeable fact gathered from the reports of delegates to the annual meetings of the State Association of Farmers' Clubs that the Club fair in a great majority of cases, becomes an annual event in the Club that once tries out the fair as a special feature meeting. It is also noticeable that this feature is always spoken of with pride and satisfaction at the annual Club conferences by the delegates from Clubs which make a practice of holding a fair meeting.

The experience of others is always the best guide, next to actual personal experience, in matters of this kind as well as along business lines. If the members of other Farmers' Clubs and the organizations with which they are affiliated have gotten so much benefit from these fair meetings, is it not a good indication that they would be a valuable addition to the yearly program of your own Club? It will require some work on the part of the membership as well as the committees having the matter in charge to stage a good Club fair, but everything worth while requires effort. If your Club has not yet tried out this special feature why not try it this year? It has been demonstrated beyond any question of reasonable doubt that special feature meetings add to the interest in Club work and help the organization. Why not try it out in your own Club by inaugurating this feature which has proven universally popular in other similar organizations?

They do not know the need of properly preparing the soil. Then there is the matter of the variety of seed to be sown. An effort is being made all over the state to push red rock wheat. This is a splendid variety of winter wheat, practically as good as the Northwestern spring wheat for milling purposes. It has been thoroughly tested in Michigan and yields abundantly.

Questions of fertilizers, questions of crops to be grown, of methods of cultivation and harvesting, and plans for selling should all be discussed in the Grange.

As I write I am wondering how many Michigan Granges are really measuring up to their privilege in this regard.

The question of farm labor, the subject of co-operative marketing, and the matter of live stock improvement should come in for their share of attention in the lecturer's hour in every live Grange. Thus will the Grange represent agriculture, but if these things are to be, farmers, generally, must ally themselves with the Order.

One reason why many Granges do not efficiently represent agriculture is because there are so few representative farmers that belong. I often wonder if farmers outside the Order read the Grange page. If they do I want to ask them for their own sakes, and for the sake of the community where they live, to join the Grange. We need young men and women in the Grange. We need boys and girls on the program in the lecturer's hour, we need entertainment—recitations, dramas, essays and music and all that—but may we never forget how much we need progressive, broad-minded, intelligent farmers. The Grange will never adequately represent agriculture until we have more of them inside its gates.

W. F. TAYLOR.

## Sure Death to Rats!

After all, there is just one SURE, QUICK and SAFE way to kill rats, and that is to feed them the one poison that they CRAVE for, and to get which they will pass everything else in their way. That poison, a marvelous new formula, is

# RAT NIP

Rats can't resist it. IT KILLS THEM EVERY TIME. It succeeds where all others fail.

Special directions are given to prevent rats dying in walls or under floors. This is the one satisfactory, modern and absolutely RELIABLE method of exterminating this dreadful pest.

Do your share in the great campaign against the rat. Use Rat-Nip. Remember the name, RAT-NIP,—as attractive to rats as Catnip is to cats. For sale in 15c and 25c safety tubes at all reliable dealers. Sent direct if dealer cannot supply.

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

**GUERNSEYS** Bull calves for sale, from A. R. dams and cows on test. GEO. N. CRAWFORD, Holton, Mich.

**Registered** and Grade Guernsey cows, bulls, yearlings, heifer calves; will sell 20. Some with records; choice of 45; must reduce herd; tuberculin tested. Avondale Stock Farm, Wayne, Mich.

**FOR SALE** Seven reg. Guernsey heifers and one reg. Guernsey bull, no kin. All nicely marked and fine specimens of the breed. G. F. COLE, Bancroft, Mich.

**REG. HOLSTEINS:** Herd headed by Albina Bonte Bantler Boy No. 93124. Dam's record at 6 yrs. butter 28.53 lbs. milk 619.4. Yearly record at 2 1/2 yrs. butter 802 lbs. milk 1822 lbs. W. B. READER, Howell, Mich.

#### 842 Lbs. BUTTER

Is the average of the semi-official records of our herd bull sdam (at 2 yrs.), his grand-dam (at 3 yrs.) and his great grand-dam. Three choice young bulls from A. R. O. dams. Herd tuberculin tested annually. Holsteins of course. Penciland Stock Farm, Three Rivers, Mich. Chas. Peters, Herdsman, C. L. Brody, Owner, Port Huron, Mich.

**For Sale** A Yearling Heifer, pure bred Holstein. Sire, Oolantha Johanna Cream-elle Lad, Dam, Elizabeth Segis Lyons. If you want something good, write, Geo. D. Clarke, Vassar, Mich.

**Registered Holstein** Friesian Heifers. 3 to 6 mos. old. Some from 30 lb. sires. Priced to sell. Fred J. Lange, Sebawaing, Mich.

## HOLSTEIN BULLS

6 to 10 months old.

From cows with A. R. O. records—Sired by a Son of Spring Farm King Pontiac 6th.

**The Great Young Holstein Bull**  
His first 14 tested daughters average over 20 pounds butter in 7 days.

The past year there were 14 bulls sold for \$10,000 or more.

The half sisters of the sire of these bulls, I have for sale, won as much prize money, as all the daughters of those sold for \$10,000 combined. Priced from \$75 up.

**Bigelow's Holstein Farms,**  
Breedsville, Mich.

## CLUNY STOCK FARM

100 REGISTERED HOLSTEINS 100

For Sale:—17 mos. old bull whose 7 nearest dams average 560.1 lb. milk and 25.679 lb. butter in 7 days. Sire is by the son of a 32.9 lb. cow and from a 31 lb. 4 yr. old cow. Dam is a 22.5 lb. Jr. 3 yr. old daughter of a 26.5 lb. Jr. 4 yr. old cow, whose dam is a 27 lb. cow.

Ready for immediate heavy service. Priced to sell immediately. Send for pedigree and price.

**R. BRUCE McPHERSON, Howell, Mich.**

**Buy Your Bulls From Parham's Pedigree Stock Farm**  
Choice Registered Holstein calves from A. R. O. cows. RAY B. PARHAM, Bronson, Michigan.

## WINNWOOD HERD REGISTERED HOLSTEINS

Holton, Mich.

Reference: Old State Bank, Fremont, Mich.

**Flint Maplecrest Boy sire in service**  
His sire is Maplecrest Korndyke Hengerveld, his 8 Nearest Dams each over 30 lbs. of butter in 7 days. His dam and grand dam both made over 122 lbs. of butter in 1 year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vasser Bell, 30.57 lbs. of butter in 7 days and 120 lbs. in 30 days. Her butter fat test is 5.27. This looks about right to the man who goes to the creamery. We have Bull Calves from 2 weeks to 8 months old for sale at dairy farmers' prices all out of A. R. O. Heifers. Write & tell us the kind of a bull you want.

**John H. Winn, (Inc.), Holton, 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**

### THE VALUE OF THE SILO.

(Continued from page 196).

not supply the demand. Today he has as fine a business as anyone would care to wish for. The most remarkable part of his success lies in his teaching the system of crop rotation and maintaining of live stock on the grain farm. On thirty acres of land that produced such a small yield of wheat the first year, wheat was planted last year and produced an average of thirty-five bushels per acre. The increase was due to rotation of crops and liberal use of manure.

#### What the Silo Saves in Feed.

Because of the silo more live stock can be kept on a farm. Without a silo there is a great waste. Agriculturists claim that in a ripe corn plant sixty per cent of its feed value is contained in the kernels, and forty per cent in the leaves and stalks. At least ninety per cent of the fodder's value is lost under the old system of handling the corn crop. Such a waste has brought failure to many farmers throughout this country. Take, for instance, the year of 1915, when the early frost killed the corn crop before it was matured. That year many settlers started in for their first year through the cheap land districts of Michigan. Many of them started in with a fair-sized herd of cattle, and had they not been caught by the frost would have gotten a good start. Being without feed for the winter these people were compelled to sell their stock and leave their farms. If these same people had had a silo to utilize the frosted corn, and a fair amount of straw, they could have pulled their herds through the winter and had an income from their cows to meet some of the farm expenses. Under the system of feeding cows in winter on dry feeds, a large amount of grain must be fed to maintain a flow of milk. With the rapid increase in the price of all grains, it is almost impossible to realize a profit wintering cows on the dry feed, while during the hard winter I have seen any number of herds of dairy cows wintered on just silage and mixed hay. One place I visited in Green county, Wisconsin, the owners had a herd of eighteen milch cows. They were fed the above mentioned roughage, and no grain. His milk check averaged close to \$200 per month, and I challenge any farmer to show a greater profit from the same number of cows by the dry-feeding method.

To clearly demonstrate the economy of the silo one dairyman of my acquaintance had his silo empty early in winter. While feeding silage he fed very little grain. When the silo was empty he fed clover and alfalfa hay and doubled the grain ration. Even with the increased amount of grain the cows decreased in their milk flow. With the cheapest cow feed, bran, selling at \$40 per ton, and other grains much higher, the dairyman could easily feed grain to his cows so they would be fed at a loss.

#### Silage for High Production.

Another stand I wish to take in behalf of the silo is on feeding test cows. Quite often the remarks are made, that all the great cows make their records mostly on grain rations. Anyone familiar with handling test cows knows such ideas are unfounded and to give an idea as to the amount of feed consumed by test cows, I will describe my feeding methods in handling the two world's champion Guernsey cows, which at the present time are under my personal care. They are Murne Cowan, with a record for one year of 24,008 pounds, containing 1098.18 pounds of butterfat, and Jehanna Chene who, as a three-year-old, produced 16,186.7 pounds of milk containing 863.36 pounds of butterfat. On the twenty-fourth of June Murne Cowan completed a one-year test as an old cow and made the record of 795 pounds of butterfat. This cow came under my care one month before com-

pleting the above record. Her feed per day was 42 pounds of beets, 35 pounds of silage, all the green and dry alfalfa she would eat, and 14 pounds of grain. The year she made her world's record she consumed 33 pounds of silage daily with other feeds mentioned.

Jehanna Chene, probably the greatest Guernsey cow in the world, through the misfortune of losing one-quarter of her udder, which handicaps her from making any more great records, is a great feeder. Through an experiment with her while off test, she clearly demonstrated the value of the silo feeds. She had been milking for six months when she came under my care, her former handler, or herdsman, was feeding her 16 pounds of grain per day. That amount I consider too much for a cow when not on test for records. So I cut her down to 12 pounds of grain, and increased her silage 10 pounds more per day. And after feeding this ration for several months I haven't had the slightest decrease in her milk flow, and she has kept up well in flesh, which shows she did not take the fat from her body to provide this steady flow of milk.

These cows have been eating silo feeds all their lives. They are valued at not less than \$25,000 apiece. Now if ensilage rots a cow's teeth why has it not affected these cows. And if there was any truth in the story, would the owner of these great cows take any chances?

And right here I might ask, why is it that during the past ten years all world's records made on milk and butterfat, were made in this country? Because we have the great crop, King Corn, and we have learned to utilize it to the best advantage. The silo has come to stay, and will increase in popularity in all parts of the world.

Ohio.

LOUIS BIEMLER.

### FEEDERS' PROBLEMS.

#### Feeding Rye to Young Pigs.

Kindly let me know how to feed rye to young pigs. We will not have any corn this year and we have never fed rye, so a little information along this line will do us a lot of good.

Kent Co.

C. J. W.

The very best way to feed rye to the young pigs would be in combination with skim-milk, feeding one to three pounds of skim-milk to one pound of the grain for most economic results, the same as if corn were being fed.

Rye does not differ greatly in feeding value or analysis from corn, but it is not as palatable a feed for hogs, and is even less well suited as an exclusive ration than is corn. If skim-milk is not available with which to feed it to the very young pigs, it should be combined with nitrogenous feeds, using some middlings and a little tankage in the mixture.

Rye should always be ground and fed in a rather thick slop to young pigs. For fattening hogs on pasture, rye meal may be fed dry in a self-feeder if desired.

Hogs arriving on the Chicago market are averaging in weight 232 lbs., comparing with 231 lbs. one year ago, 247 lbs. two years ago, 244 lbs. three years ago and 235 lbs. four years ago. Hogs are selling at an extremely wide spread in prices, the average grading being unsatisfactory. Corn has been fed sparingly as a general rule, and grassy offerings predominate and sell at a big discount from prices paid for prime lots. Provisions and fresh pork products are having a large sale in spite of their extreme dearthness, having advanced along with hogs.

Farmers of Graham county, Wisconsin, have been using the land along the highways for raising crops of sweet clover. The dairy farmers have used this forage extensively, and speak well of it. The seed is sown in the spring at the rate of a bushel to seven acres. The crop is usually pastured, but in some places where used for hay it is cut before becoming too woody. Many grass-fed cattle are produced in Graham county, and there are quite a number of cattle and swine left.



# Veterinary.

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

**Tetanus.**—Will you please tell me what is wrong with our dog and cats? They are dumpish, refuse to eat, grow poor, but are thirsty, slime runs from mouth and finally take lockjaw and die. J. T., Ypsilanti, Mich.—Lockjaw in dogs and cats is an incurable ailment, but it occurs to me that perhaps only a portion of your animals suffer from this ailment, as it is usually the result of a wound becoming infected with lockjaw germs. As soon as you notice wound on either your cat or dog, paint it with tincture iodine and bandage it in absorbent cotton.

**Obstructed Gullet.**—I have a year-old colt which has always discharged water and a portion of the food through nostrils ever since it was two days old. Do you believe this case curable? B. B. B., Trenton, Mich.—I am inclined to believe that the throat and gullet of colt is in such a condition that it will never get well. Apply to throat one part tincture iodine and two parts of camphorated oil three times a week.

**Eczema.**—I have a brood mare that is troubled with chronic skin ailment; last fall she had an itchy condition of skin, quite a lot of pimples form and break open, but soon heal. When the skin is itchy she bites herself, making angry appearing sores. I forgot to say that she had a colt on June 25, and her colt is in much the same condition. L. Y., Leer, Mich.—Give her a tablespoonful of cooking soda and a teaspoonful of Glauber's salt at a dose in drinking water twice a day. Wet sores with one part coal tar disinfectant and forty parts water twice a day.

**Barren Cow.**—I have a valuable grade Guernsey cow five years old that fails to get with calf. Last year she was bred nine different times to two different young bulls, also had Vet. open her once. Since turning her out to pasture she has run with fine young vigorous bull, comes in heat regular, but fails to get with calf. She appears to be in good health and milking well. C. F. C., Alma, Mich.—I am somewhat inclined to believe that your cow may not breed; however, you might try flushing vagina with a soda solution soon after she comes in heat. Dissolve three ounces of bicarbonate of soda in three pints of clean boiled water and wash out vagina, using a fountain syringe three or four hours before she is mated.

**Shy Breeder.**—I have a 15 months old high-grade Jersey heifer that comes in heat every three weeks and has been bred to three different sires, but fails to get with calf. She seems to be in fine condition. A. F. D., Stephenson, Mich.—Dissolve 3 ozs. of cooking soda in 3 pts of clean boiled water and wash out vagina three or four hours before she is mated.

**Warts on Teats.**—I have a young cow whose teats are badly covered with warts. A. D. P., Kalamazoo, Mich.—All the warts that have long slender necks should be clipped off with a pair of sharp scissors, then apply boric acid to sores twice daily. Oiling the warts thoroughly with either castor oil or olive oil after each milking will very often remove them; or apply one part salicylic acid and 15 parts olive oil daily.

**Chronic Cough.**—I have a cow that is occasionally troubled with a cough, but so far as I can tell it does not affect her health in the slightest; besides, she is giving a nice mess of milk. Mrs. O. E. F., Hillman, Mich.—Doubtless your cow suffers from a slight irritation of throat and will be benefited by rubbing on camphorated oil once a day. It is not necessary to give her drugs.

**Ringworm.**—My cattle, especially the young stock, have been troubled for several months with a rough crust-like skin disease which causes considerable itchiness and I am inclined to believe the trouble is catching. I forgot to say that during last winter these cattle were troubled with chicken lice as my cow stable adjoined the chicken house. I applied one part kerosene and 30 parts sheep dip lightly to them. This mixture perhaps caused some of the skin soreness. J. A. D., Otisville, Mich.—Apply one part iodine and 15 parts wool fat to sores three times a week. Spraying your cattle with one part coal tar disinfectant and 49 parts water will have a good effect.

**Rheumatism.**—I would like to know what ails my chickens? They get lame first in one leg then in the other. They are fed oats, wheat, corn, corn flakes and have plenty of good water to drink. Mrs. R. W. W., Webberville, Mich.—Give each chicken 1/2 gr. sodium salicylate at a dose in feed night and morning.

## Detroit Guarantee Sale

Every animal over six months of age will have been tuberculin tested and guaranteed against tuberculosis for a period of 60 days, according to the usual conditions laid down in such cases.

## Dispersion Famous Holstein Herd

YPSILAND HERD, not only one of the best in the state but one of the leading herds in America, goes at your price. This herd includes the famous champion, Pontiac De Nijlander (35 lb.), her daughter (the State Champion two-year-old, 26 lb.), her son and many granddaughters.

This herd is being sold for no fault but because the farm is to be subdivided into city lots.

LAKEVIEW FARM CO. are selling their entire young herd. Thus every one in this offering has her best days still ahead.

E. LEROY PELLETIER will sell ten. He'll make up in quality what he lacks in quantity. (You remember he did that at Worcester, selling the highest price female ever offered at auction).

### Several Other of

## Michigan's Leading Herds Will Be Represented

PERSONALLY INSPECTED. A committee has been selected to inspect every animal. None will be accepted for sale whose last calf was not born alive and fully mature. Nor will any be accepted that are not a credit to the sale or the herd from which they come.

### 150 Head --- Oct. 3-4, 1917

At The Michigan State Fair Grounds, Detroit, Mich.

Sale Cataloged and Managed by  
**Liverpool Sale & Pedigree Co., Inc., Liverpool, N. Y.**  
Haeger, Wood and Kelley on the Job.

## The Barry Co. Swine Breeders' Association

Offers Pure-bred Durocs For Sale. Uniform Hogs at Attractive Prices.

- 1 Yearling Boar } Thomas Frye, Doster, Mich.
- 2 Spring Gilts } E. J. Barchett, Doster, Mich.
- 10 Spring Gilts } Stanley Warner, Doster, Mich.
- 3 Spring Boars } 1 December Boar—Dewey, Doster, Mich.

Get Our Prices on Fall Pigs. Address

Stanley Warner, Pres., or Ernest Hall, Secy-Treas., Doster, Mich.

## Jerseys and Duroc Jerseys

The most important thing in buying a Jersey bull is to get one backed up by generations of high producers.

Brookwater offers to sell a few choice bull calves of this kind.

H. W. MUMFORD, OWNER. **BROOKWATER FARM** O. F. FOSTER, MANAGER.  
Ann Arbor, Mich., R. 7.

### OAK LEAF FARM

Ypsiland Sir Pictertie De Kol  
Registered Holstein cows & bull calves fine individuals cows safe in calf satisfaction guaranteed.  
E. H. Gearhart & Son, Marcellus, Mich., R. No. 4.

**WOULD** You want a bull from a 30 lb. dam and a 30-30 lb. sire for \$400? Can't be had, but we have one for \$900, also one from a 25.58 lb. heifer for \$299, and one from a daughter of Pontiac Aagie Korndyke for \$260. Good ones as low as \$80. All from World Record Sire.  
LONG BEACH FARM, Augusta, Michigan.

### Butter Fat Counts

Holstein Bull Calves from a 30 lb. 6.53% Sire. Dam are grand daughters of the King of the Pontiacs. Their dams grand daughters of Sadie Vale Concordia the first 30 lb. cow. Edwin S. Lewis, Marshall, Mich.

**3 Holstein Heifers** 30.21 lbs. sire. Their dam's dam A. R. O. sister to dam of 35 lb. cow, bred to 3/4 brother to 30 lb. 4 yr. old. Terms if wanted. M. L. McLAULIN, Redford, Michigan.

**Registered Cows**, heifers and heifer calves. Priced reasonable. Noted breeding and good individuals. R. E. Reavey, Akron, Mich.

**On Our Easy Payment Plan** we will ship you any registered Holstein Bull calf in our stables. Prices from \$50 up. Ypsilanti Farms, Ypsilanti, Michigan.

**RINKLAND HERD BULL CALVES** from A. R. O. cows at farmers' prices. JOHN A. RINKE, Warren, Mich.

**For Sale** 2 Reg. Holstein cows 7 years old due to freshen Sept. 1 and 8. Well marked, price right. C. L. HULETT & SON, Okemos, Mich.

**REG.** Holstein Bull Calf. The last one until winter a good one with A. R. O. backing. Write for pedigree and price. Elmer E. Smith, Redford, Mich.

**Holstein Bull Calf** two months old. Dam sixty pounds milk A. R. O. Sire from 30 lb. cow. A. R. GRAHAM, Flint, Mich.

**FOR Sale** One registered Holstein bull calf. Sire's twenty nearest dams have 7. da. records av. 25.53 lb. butter. Dam to be tested. A finely marked, growthy individual. Long Veiv Farm, R. 3, Box 10A, Rochester, Mich.

## HEREFORDS

Sires in service, Governor by Prince Donald Militant Farmer by Farmer (Imp), Bonnie Brae Jr. by Bonnie Brae 24th. Inspection invited.

**ALLEN BROS., PAW PAW, MICH.**

**Wanted** Fifty head high grade Hereford heifers—Calves or yearlings. Kindly specify breeding and price. W. E. MOSS, 726 Union Trust Bldg., Detroit.

### The Wildwood Jersey Farm

offers for sale choice young bulls from R. of M. dams, good enough to head any herd. We invite inspection.  
ALVIN BALDEN, Capas, Mich.

### Get Rid of the "Boarders"



Do you keep cows or do they keep you? Do you know which are earning a profit and which are merely paying their board? One community increased the average net profit per cow 129% in a few years by testing. Cows from regularly tested herds sell for more money and so do their offspring. Knowing beats guessing in dairy work. Get our free booklet, "What is Accomplished by Testing Cows" and learn how to build up your herd from animals of known production. Every farmer should read this booklet. It's free. Send a postal today.

**The American Jersey Cattle Club**  
346 West 23d St. New York City

**Jersey Bulls for Sale** from high-producing dams, with semi-official test. C. E. Weber, R. 6, Allegan, Mich.

**Jersey Bulls** for sale, ready for service. Out of good producing dams. Prices right. R. E. FOWLER, Hartford, Mich.

**Hillside Farm Jerseys.** For sale ten months old bull backed on both sides by R. of M. dams with high official records. C. & O. DEAKE, Ypsilanti, Michigan

**Little Farmstead Jersey Cattle.** Bull calves from R. of M. Cows, also heifer calves and several bred heifers for sale. Colon O. Lillie, Coopersville, Mich.

**For Sale** Two registered Jersey bull calves, Splendid individuals. Good pedigrees. Priced to sell. Long Veiv Farm, R. 3, Box 10A, Rochester, Mich.

**Maple Lane** R. of M. Jersey herd offers for sale tuberculin tested cows, bulls, bull calves and heifer calves, carrying the best R. of M. blood of the breed. IRVIN FOX, Allegan, Mich.

**Maple Hill Farm Registered Jersey Cattle** Surplus stock all sold. J. R. Worthington, R. No. 7, Lansing, Michigan

**Jerseys**, Registered Jersey bull 4 mos. solid color, choice breeding \$25. Also heifers and Bronze turkeys. PETER H. DOUMA, R. 2, Holland, Mich.

**St. Clair County Jersey Cattle Club.** We have for sale 5 Bulls old enough for service and Bull calves, from best strains of Jersey Cattle. Majesty's, Noble of Onklands, Combination's Premier, etc. Write for Pedigrees, price and particulars. Fred A. Brennan, Sec. Capas, Mich.

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

**FOR Sale**—Reg. Short Horn Bulls by Maxwellton March 2nd, a son of Avondale, from 1 to 9 mos. old. John Schmidt, Reed City, R. No. 5, Michigan.

### Francisco Farm Shorthorns Big Type Poland Chinas

"They're rugged—They pay the rent." Nothing for sale at present.  
P. P. POPE, R. R. 3, Mt. Pleasant, Mich.

## Bidwell Shorthorns

"For Beef and Milk"

This heifer at 6 months has bone, size and quality—our own breeding. The blood of Scotch bulls, Imp. Shenstone Albino and Imp. Villager Registered stock always for sale.

**BIDWELL STOCK FARM,**  
Box B, Tecumseh, Michigan.

**Shorthorns**—Dairy or beef bred. Breeding stock all ages for sale at farmers prices. C. W. Crum, Secy. Cent. Mich., Shorthorn Breeders' Assn., McBride, Mich.

**Richland Shorthorns** Largest and best herd in the state. Tuberculin Tested by the state. IMP. Lorne one of the Sires in service. Entire Herd of Reg. Angus cattle, including the show cattle for sale at a bargain. Mostly Erics and Blackbirds. Herd at Prescott, Mich. Office Tawas City, Mich. **C. H. PRESCOTT & SONS.**

**For Sale** Shorthorns Bulls 3 mo. to 2 years old from good milking cows. R. R. Clyde Station, H. J. DeGarmo, R. 6, Milford, Mich.

**SHORTHORNS** Maple Ridge Herd, Established 1867. No stock for sale. J. E. Tanswell, Mason, Michigan.

**Shorthorns for sale**, 5 bulls Scotch top 10 to 14 mos. 3 roan, 1 white, 1 red, price \$150. to \$250. Leon of Maxwellton Sultan, 19 mos. \$350. C. Carlson, Leroy, Mich.

**Shorthorn** Cattle and Hampshire Sheep. Choice Hampshire Ram Lambs for sale. Good breeding. Floyd J. Anderson, R. 1 St. Johns, Mich.

### Cattle For Sale

2 Loads feeders and two loads yearling steers. Also 2 can show you any number 1, 2 and 3 years old from 600 to 1200 lbs. Isaac Shanstun, Fairfield, Iowa, R. 4.

### HOGS.

### Durocs and Victorias

Heavy bone, lengthy Spring Boars and Gilts from prize winners sired by one of the best Sons of the Great Defender & other noted strains. M. T. STORY, Lowell, Mich.

## BERKSHIRES

We Are Not Going to Show This Year and Therefore Offer:

A few choice boars and sows from our Champion and first prize Sows at State Fair 1916. These pigs are mostly April farrow. They cannot be beat for type. You do not often have the opportunity of purchasing this class of spring pigs.

They will be large enough for breeding and service by December. We can furnish a trio unrelated.

All stock guaranteed as represented

## SWIGARTDALE FARM

PETERSBURG, MICH.

**Berkshires**, Boars, serviceable age, best blood lines. Registered. ELMHURST STOCK FARM, Almont, Mich.

**Berkshires**, Bred gilts and sows for fall farrowing. Also Spring pigs, either sex. A few boars serviceable age, reg. Chase Stock Farm, R. 1, Marlette, Mich.

**Berkshire Pigs** going fast \$15.00 & \$20.00 each three months old. Registered & transferred, richly bred. Riverview Farm, Vassar, Mich.

### DUROCS BOARS

Have the biggest, longest, growthiest and bred bunch of Spring boars in the state. 3 last fall boars by Panama Special.  
NEWTON BARNHART, St. Johns, Mich.

### Duroc Jerseys

Spring pigs, either sex, not akin. Sired by Jennings Pilot Wonder and Orion Chief Perfection. Write for pedigrees and prices. The Jennings Farms, Bailey, Mich. V. M. Shoemith General Manager.

**Reg. Oxford Rams** 2 yr's \$35 each, seven very choice Rams lambs \$25 each, none weigh less than 110 lbs.  
J. R. HICKS, St. Johns, Mich.

### "Nothing But Spring Pigs For Sale"

CAREY W. EDMONDS, Hastings, Mich.

**Duroc-Jerseys** One Yearling Cherry King Boar, Gilts bred for fall farrow. J. H. BANGHART, East Lansing, Mich.

**Duroc** Sows and gilts bred to Eureka Cherry King and Orinson Critic son of Critic Model 1915 champion Iowa Fair. W. C. Taylor, Milan, Mich.

**Duroc Jerseys.** Fall Boars & Gilts all sold. I have some extra good heavy boned spring pigs for sale pairs not akin. F. J. DROTT, R. 1, Monroe, Michigan.

**Dobson's Durocs;** Pigs at weaning time; breeding. Ollie Paps, Orlo L. Dobson, Quincy, Mich.

**DUROCS** a few choice spring boars. Write for description & price. E. D. HEYDENBERG, Wayland, Mich.

**Durocs**, Good Spring pigs by Defender's E. E. Calkins. R. D. 6, Ann Arbor, Michigan.

**Durocs** A few good males sired by Joe Orion 2nd Dam by Orion Ch. King Jr.  
A. FLEMING, Lake, Mich.

### Raise Chester Whites

Like This

the original big producers



I HAVE started thousands of breeders on the road to success. I can help you. I want to place one hog from my great herd in every community where I am not already represented by these fine early developers—ready for market at six months old. Write for my plan—More Money from Hogs.  
G. S. BENJAMIN, R. F. D. 10, Portland, Michigan

**Chesters** Bred Gilts all sold. Special prices on March boars, also 6 months Holstein Bull. F. W. ALEXANDER, Vassar, Mich.

Additional Stock Ads. on Page 207



Live In Comfort At Lowest Cost This Winter



# Get the Heater You Want for Less Than You Expected to Pay

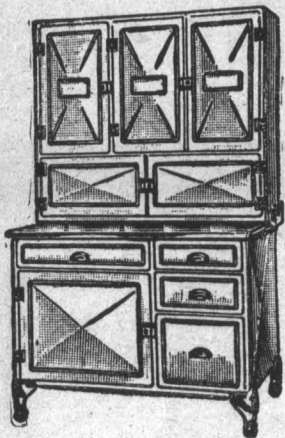


**M**AKE every dollar do extra duty this fall. Never before did the slogan "A Kalamazoo Direct to You" mean so much as it does right now. Prices everywhere have been going up, up, up. Here is your chance to **save money** and still get unbeatable quality. Kalamazoo Stoves are known and used from coast to coast and have built up the largest manufacturing plant of its kind in the world.

You can figure your saving for yourself. No one can quote lower prices than the people who make the goods. And in dealing with us you deal direct with manufacturers. You do your own wholesale buying. You know what happens to the products you sell. You know what the final buyer pays. Then think of what you save when you can go direct to the makers of your new stove, range or furnace and get the article you want for the lowest price that anyone can quote.

### Burn Soft Coal

If you cannot get, or do not want to pay the high price for hard coal, get a Kalamazoo Heater especially adapted for burning soft coal or wood and save money. Write for catalog.



**Kalamazoo Kitchen Cabinet**

All metal, white enamel. The kitchen cabinet that's different. Never cracks; never warps. Always easy to keep clean and sanitary.

## Write Today Get Our New Catalog of "KALAMAZOOS"

Get your new Kalamazoo at once and let it save you a big share of its cost in your saving in fuel bills this winter. Now is the time. A new stove burns less fuel than an old stove. Kalamazoo stoves burn any fuel and get all the heat from the fuel consumed.

Send us your name and let us send you a copy of our new book free. This is the greatest book that we ever published on home heating. It shows the full line of Kalamazoo Stoves, Heaters, Furnaces and Kitchen Ranges. Shows a stove for every home—the style and size you want and at the price you want to pay. Shows how Kalamazoos are made and

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