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Remove the Poor Seed Handicap

By G. W. PUTNAM

INASMUCH as an appeal has been made to the farmers of Michigan for an increase in Michigan's food crops, it has been found necessary to promulgate the various ways and means by which this increase may come about. It has been estimated by field agents and other agronomic workers, who are in a position to know, that each year preventable losses of the cereal crops of Michigan amount to twenty-five to fifty per cent of the total crop production of the state. These losses are distributed as follows, based on the production for 1916 as given in the November Crop Reporter:

Due to preventable diseases in the small grains:

Wheat, 5 to 10 per cent, or \$1,240,471.00 to \$2,480,942.00; oats 5 to 10 per cent, or \$2,180,204.00 to \$4,360,408.00; barley 5 to 10 per cent, or \$98,434.00 to \$196,868.00. Total loss from smuts, \$3,519,109.00 to \$7,038,218.00.

Due to poor stands from using seed of low vitality, preventable by use of germination test. Small grains and corn:

Wheat 5 to 10 per cent, \$1,240,471.00 to \$2,480,942.00; oats 5 to 10 per cent, \$2,180,204.22 to \$4,360,408.44; barley 5 to 10 per cent, \$150,223.83 to \$300,447.66; corn 5 to 10 per cent, \$2,092,029.45 to \$4,184,058.90. Total loss from low vitality, \$5,662,928.50 to \$11,325,857.00.

Due to poor stands from using seed not properly graded, preventable by use of grader. This is of most importance in the case of the corn crop:

Corn 15 to 30 per cent, \$6,276,088.35 to \$12,552,176.70.

Total preventable losses based on the yields of 1916 are from \$15,556,560.00 to \$31,113,118.00, or at the least over three times the amount of the appropriation granted as a war policy for Michigan.

How to Prevent These Losses.

By the use of the fanning mill it is possible to remove all foreign material, noxious weed seeds, mixtures of other grains, cracked seed and any seed that may be light or chaffy, in fact, a proper use of the fanning mill leaves only those seeds that are normally developed and of the desired grain.

Most mills have special screens for the grading of the various grains. However, it is possible to obtain special graders for certain grains. This is often desirable in the case of corn. The use of the corn grader is very essential. Corn is a very heterogeneous type of grain and in any lot not graded it is possible to find all variations of size and shape.

If the grader is used the corn will be divided into classes. Now it is not the question of which class is the better, but rather the question is to get each class planted uniformly. The planter plate that drops the deep narrow shoe-peg type of kernel three in a hill is not going to drop a broad, flat type the same way. The problem then, is to sort each class out and then use a

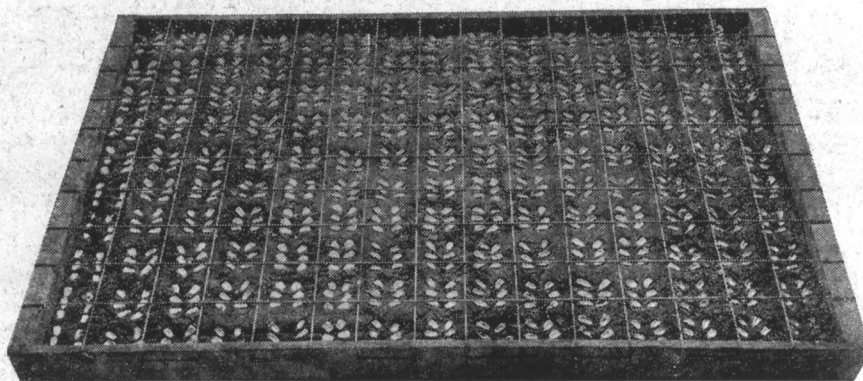
plate that will give the desired droppings. The plate to be used can be determined by jacking up the planter off the floor then by turning the wheel by hand note the droppings for one hundred hills. The number of perfect droppings recorded will approach the per cent of perfect planting you can expect.

To make this point clear let us figure the yield of an acre of corn. Allowing the hills to be three feet six inches each way, there are approximately 3,556 hills in an acre. If we plant three kernels to the hill then

fertility methods known because in planting only two-thirds of a crop we have assumed an unyielding limiting factor.

The Germination Test.

All seeds to be planted should have their germination percentage determined. It is important to know this point. If it is seed such that you could not easily separate out these portions of low vitality, then overcome them by increasing the rate of seeding. That is, if your oats show a germination test of eighty-five out of every one hundred then this means fifteen per cent is



Sand Germinator, Ready for the Last Layer of Sand.

we can expect 10,668 ears per acre. At eight ounces per ear we could expect 5,334 pounds per acre, or seventy-six bushels (allowing seventy pounds per bushel). The question may be raised that eight ounces is too light. We think not. But if we allowed ten ounces the yield would be ninety-five bushels per acre. On this basis if corn is not properly graded and if proper precautions are not used to insure uniform dropping we can easily cut down

dead if it is not advisable to secure seed of a higher germinability then increase your normal rate of seeding by fifteen per cent. If you were planting eight pecks, or sixty-four pounds, you would want to increase it to 73.6 pounds.

In the case of corn it is desirable to test the seed before shelling, then if any particular ears are shown to be of low vitality you can discard them. No ear should be saved that does not show

have a germinator ready for one hundred ears of corn. A suitable rack to hold one hundred ears of corn should be fixed up and labeled to correspond to the germinator. Then take an ear and remove from the butt end, two kernels; turn the ear one-third of the way around and remove two kernels from the middle; turn again and remove two from the tip. Now place the kernels in one of the squares, say 1A, and the ear on the rack to correspond. Now do the same for each of the one hundred ears and at the end of six days examine. Any square that does not show six good sprouts discard the ear from the rack that corresponds to it. Keep the soil well moistened and in a warm room the same as for small grains.

The Sawdust Box Similar to the Above.

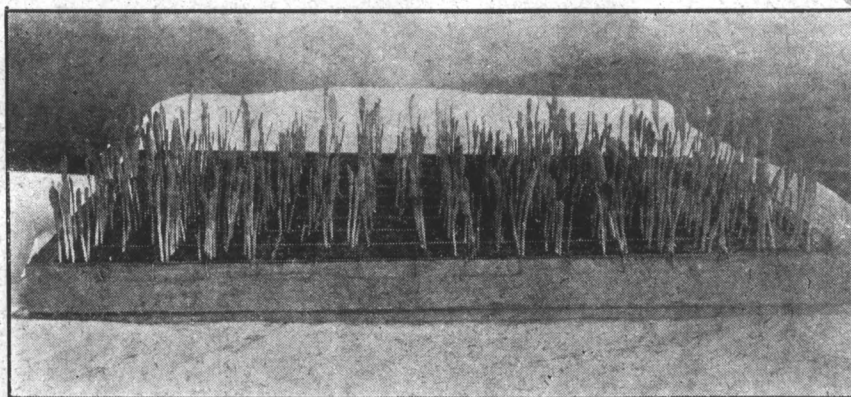
Put a layer of sawdust in the box. Take a sheet of plain white cloth the size of the box. Mark off in two-inch squares and label each square as in the case of the sand box. Place the kernels in the squares and the ears to correspond in the rack, the same as above method. When all squares are filled place a similar sheet over the box and cover with a layer of sawdust. Saturate with water and set away, the same as in the sand box.

The rag doll method, familiar to many farmers, is just as good a method and may be used in preference to either of the above methods.

ECONOMY IN LABOR.

It requires a good deal of ingenuity nowadays to farm successfully with the amount of help that is available. Most of us are engaged in producing milk, beef or pork. To be profitable, the feed must be largely home-grown. To accomplish this properly is a pretty fair contract under existing conditions, yet I have noticed time and again that some farmers attempt to raise almost every crop that will grow in their latitude.

In economics there is a principle known as the "division of labor," which may for the present purpose be best defined by means of an illustration. For instance, because a farmer in Maine grows potatoes on a large scale and makes money, it does not naturally follow that a busy dairyman in Michigan can add potato growing to his operations and be successful. The man who makes potatoes his specialty must employ modern machinery to reduce the cost of production to its lowest possible point. He is therefore able to sell his output to the dairyman at a figure even lower than it would cost the latter to grow his own supply. The suggestion is plain. If farmers would give their undivided attention only to such crops as are necessary to their special line, and which they are equipped to produce cheaply, buying other supplies from other specialists, both parties to the transaction would (Continued on page 563).



Sand Germinator, Ten Days After Planting.

Notice that some of the squares show no sprouts, others show spindling ones, the ears belonging to these squares should be discarded.

the average for the field from three kernels to two. This, then, would give us an absolute limiting factor of about sixty bushels as a maximum yield. We know that this maximum is never reached. There are insects, unpreventable plant diseases, unfavorable weather conditions, etc., that must take their toll from this possible sixty bushels. The result is a mediocre corn crop that will not respond to the best tillage and a test of at least ninety-five per cent viable. Use a shallow box two to three inches deep and twenty inches square. Mark off the edges in two-inch blocks, then string strings across each way by use of tacks, making one hundred two-inch squares. Then fill the box with some fine sandy soil. Now label one edge of the box from one to ten; the adjacent edge from A to J. We now

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DETROIT, MAY 5, 1917

CURRENT COMMENT.

When the United States was forced to enter the world war, the government was at once confronted with the stupendous problems of hasty preparation. With a broader knowledge of the world conditions affecting this great military contest than is enjoyed by even the best informed private citizens, government officials at once set about preparing the country for the eventualities of war by giving first attention to the most important of the many important problems involved.

This first step toward preparedness was the inauguration of a campaign to increase agricultural production, to the end that the country might be well supplied with food, which is the first essential of preparedness, and in addition be able to supply food to the European Allies with whom we are now allied for the successful termination of the great war. When plans for this important phase of preparedness were well under way, attention was next turned to the problem of the transportation of food stuffs to foreign countries. The purely military problems involved are, of course, receiving the most careful consideration, and military preparations are being hastened with all possible speed, but it is significant that this phase of the work of preparedness was not the first or most important phase as indicated by official consideration. The same thing has been true with war preparations in our own and other states.

While these preparations have gone forward, a great many people whose patriotism cannot be questioned have been slow to realize the necessity for the propaganda for increased production, believing that such a program might easily stimulate over-production and prove a consequent hardship to the farmers of America. There is no reason to question the patriotism of the men who honestly hold such an opinion. Once the facts have been properly placed before them and they become convinced of the necessity of increased production for the nation's safety, their patriotic response will be universal.

In the last issue we commented upon the world food situation and the economic soundness of the plea for increased production on American farms. Let us for a moment now consider such need from the purely military standpoint of a nation at war. Having declared war on the imperial German government, it is obviously the duty of this country to do everything within its power to bring this disastrous world war to an early and successful termination. To this end the very first

consideration is providing the allied nations of Europe with food stuffs in sufficient quantity to prevent the effectiveness of unrestricted submarine warfare in its intended object of starving the peoples of those nations into submission.

The thinking person who has followed the history of this warfare must realize that there is a possibility that it may yet be successful in the attainment of its object. The most effective aid which can be given by this country during the coming year is to provide those countries with food stuffs. The government is engaged in a stupendous ship-building campaign to provide the means of transporting our surplus from this year's production to those countries, but in its final analysis, the success of this plan, which is absolutely essential to the winning of this war on European soil, depends upon the response of the farmers of America to the plea for an increased production of food stuffs so as to provide the great surplus above our domestic needs which will be required to feed the peoples of the allied nations and to satisfy the toll of submarine frightfulness. Should our country fail in this program and the allies be starved into submission, through unrestricted submarine warfare, the outlook would not be pleasant to contemplate from our standpoint.

If, then, the United States is to take an effective part in the early winning of the European war in its present stage, that result will be accomplished through the effort of American farmers. Increased demands will also be made upon American factories, while hundreds of thousands, and perhaps millions of men must be used for the making of an efficient army at the earliest possible date. This means increased efficiency on every farm, and greater efforts and greater sacrifices on the part of our farm people during the coming year. This effort and these sacrifices will, however, be cheerfully made, once their patriotic significance becomes fully appreciated.

Unquestionably the farmers of America are in charge of the nation's destiny today as perhaps never before. Their obligation in this connection will be discharged to the full extent of its recognition. We bespeak on the part of every Michigan Farmer reader the careful consideration of his own opportunity to aid this campaign of increased production, and his patriotic obligation to live up to his opportunity in this regard.

Government Price Fixing.

In the campaign for an increased production of food stuffs the argument is often met that the farmer should have some assurance that he will get a compensatory price for his products after they are grown if he is to enlist in this campaign of increased food production. The favorite scheme for accomplishing this result is the fixing of minimum prices by the government which will insure the producers that values cannot fall below the indicated level during the crop year. On the other hand, the consumers in the large commercial centers urge price fixing to insure that food stuffs will not continue to soar above present price levels due to the shipment of vast supplies to foreign countries.

This proposition has been thoroughly discussed at a number of conferences, notably at the St. Louis conference called by the Secretary of Agriculture. That conference reached the conclusion that the very low food reserve of the world due to last year's short crops, the increased demands due to the consumption and waste of war, and the disappointing condition of the winter grain crop give ample assurance of profitable prices to producers this year, therefore it was recommended that the fixing of maximum and minimum prices by the govern-

ment be not undertaken at the present time. But in view of the fact that such a course may become necessary in the future it was recommended that agencies be created through which the government might take such action in price fixing as emergencies might make necessary, including the power to purchase, store and subsequently distribute food products or to fix prices in any national emergency caused by a temporary or local over-production, or by a sudden ending of the war, or by restraints of trade due to manipulation or speculation. In his report to the Senate in answer to a request from that body for the submission of a plan for increasing the production of food supplies, Secretary of Agriculture Houston followed these recommendations closely, suggesting that the power of price fixing be lodged in the Council of National Defense, to be used at the direction of the President.

In some agricultural bodies where this subject has been discussed the view was taken that price fixing at this time might operate to the disadvantage rather than the advantage of the producer, since the fixing of a minimum price might establish the actual price basis for the crop year.

In any event, producers need not be apprehensive about future prices. Minimum prices will not be fixed at a point so low as to discourage production, since this would defeat the very object of such price fixing. The creation of an agency with the price fixing power to be used only in case of emergency would seem to be adequate protection to producers, and at the same time prove a discouraging influence in the matter of manipulation and speculation which will be beneficial to consumers, perhaps without the actual exercise of that power. In any event, recognizing the need for increased food production and enlisting the farmers of the country in a campaign looking toward that end, the government is morally bound to take such steps as may be necessary to safeguard producers against financial loss from this cause.

We believe that no farmer need fear to increase the output of his farm to the maximum because of any doubt as to a compensatory price for two reasons: First, the statistical situation relating to the world supply and demand, and second, the good faith of the government which is appealing to every farmer for his aid in the present grave emergency.

At a meeting of the Michigan Bean Jobbers' Association held in Saginaw on April 26 at the call of President Orr of the organization who is also a member of the Food Preparedness Board, the following resolutions relating to seed beans were unanimously adopted:

First. That no Choice Pea Beans suitable for seed be offered out of the State of Michigan until June 1 after date.

Second. That seed beans shall be sold to the farmers at the same price that the members are paying for them the day the sale is made.

Third. That all seed beans, before being delivered to the farmers, shall be tested for germination, and in order that the food supply may be conserved, the seed shall be picked so closely that all frosted beans shall be picked out of the seed and conserved for food.

The prevailing patriotic spirit of the meeting was that dollars and cents should be forgotten and everything done to further the production of the Michigan pea bean.

The present emergency Mobilization has brought forth a multitude of plans for the mobilization of the country's agricultural resources and of labor for the promotion of maximum production. Many of these plans emanate from sources which bespeak for them the most careful consideration. Others are less practical from the standpoint of general application, but

may be workable locally or where similar local conditions obtain. So many and so diverse are these plans that their publication is impossible, and in view of the fact that the preparedness propaganda is now well organized and under way, extended comment on them would seem superfluous. Any individual idea or any organization plan which can be given local application should be locally encouraged, but not to the detriment of the general plan which has been adopted and is being worked out in Michigan. Every citizen should do his utmost along both lines. The local phases of the work will afford plenty of opportunity for initiative, but in the larger way team work will count most toward the right kind of preparedness, hence the desirability of co-operating with the organization already established, of which the county agent is the local representative in each county.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Although the great drive of the allied troops on the western front continues, the resistance of the Germans the past week has been more desperate and the territory taken from them less extensive than for the first weeks of the spring campaign. British troops occupied positions of advantage before Daulai an objective on the front near the northern border of France, and the French advanced to the northwest of Rheims. On the Russian front there have been no important activities to report.—In Asia Minor the Turks attempted to take advantage of the reorganization of the Russian forces by attacking the lines in Armenia and forcing the Russians to retreat. The loss, however, was recovered in counter attacks. The Russians also beat off all the enemy's efforts to the west of Balumer on the same front. The British expeditionary forces now operating in Palestine have advanced during the week and those in the Tigris valley have improved their position.—The offensive of the Italians which was reported last week does not appear to have been launched as yet as no news has been published from that quarter.

Political relations and conditions the world over are in a very unsettled state. It is expected that China will declare war on Germany within two weeks. Russia's war policy remains undecided and while the reports at hand would indicate that the new republic is planning on prosecuting the war to a successful issue in alliance with her British and French allies, there is some doubt existing as to the ability of the new leaders to carry out effectively such a program. Austria-Hungary is facing grave internal questions. Her people are asking for a democratic form of government in which the common classes will enjoy full political and property rights, and it has been suggested that an agreement may be reached with Russia whereby both countries will lay down their arms. Spain and Sweden are also disturbed with the same spirit, and in Germany there is great unrest over the outlook. Food strikes are more common and political reforms are being demanded with great insistence.

Forthcoming crops in France will be short according to the report of the French Department of Agriculture. Lack of labor, heavy rains and an insufficient supply of fertilizer are the reasons given for the light crops.

National.

Apparently the American congress favors selective conscription as the best method of raising a large army, for both houses passed bills to that effect last week by large majorities. The measures differ somewhat in detail, but these differences will no doubt be settled in conference. The senate measure provides for a maximum conscription age of twenty-seven years, while the house measure makes forty years the limit. Both agree on twenty-one years for the minimum. It is expected that the provisions will be harmonized and that the president's signature will be affixed this week.

Eighteen public officials of Evansville, Ind., pleaded guilty last week to charges of conspiracy to violate the election laws of the state.

A mine explosion at Hastings, Colo., entombed 119 miners of which only 18 had been removed after sixty hours of rescue work.

The British and French commissions now in Washington are aiding this government with their experiences of the first thirty months of the war.

Farm Notes

Planting Beans on Thin Land.

I have a sand loam field which has failed twice to grow clover. Last year it raised 100 bushels of rye and was seeded to sweet clover. The sweet clover made a fair stand but the extremely hot, dry weather of August killed it out badly. At present there is some sweet clover and a good stand of volunteer rye. I have plenty of barnyard manure and thought of covering it well and plowing down rye and manure for beans. Would this raise a crop of beans without fertilizer? Or would it be better to plant it to soy beans and harvest for seed?

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It is difficult to advise intelligently regarding the best treatment for this field without a more extended knowledge as to its previous handling. While it could not be expected to grow as good a crop of beans as a clover sod given similar treatment, yet with a good crop of volunteer rye and some sweet clover to plow under, and plenty of stable manure available for its fertilization, it can by supplementary treatment be placed in condition to grow a fairly good crop of beans, and also to give better promise of a stand of clover when next seeded.

It is very probable that one reason why this field has failed to catch in clover is that the soil is in an acid condition. If so, it will be necessary to correct this acidity by the application of lime or marl before a stand of clover can be gotten with any degree of certainty. In that event, it would be better to apply the lime when fitting the ground for beans, since it would then have plenty of time to neutralize the acid condition of the soil before it is again seeded to clover. This would also probably increase the yield of either beans or soy beans, both of which are leguminous plants, although it is probable that the presence of nodule forming bacteria is not as essential to a good crop of beans as it is to the growing of clover.

The best way to handle this field for either beans or soy beans would be to apply a reasonably liberal coat of stable manure, say eight or ten loads per acre, then plow before the rye heads out, so as to get as much vegetable matter as possible, yet have the rye and sweet clover which is plowed down decompose quickly, thus insuring against its interference with the capillary connection of the soil at the bottom of the furrow slice, which is essential in conserving the moisture to grow beans or any other crop with maximum success.

After plowing, make a test of this soil with litmus paper, and if an acid condition is indicated, apply say two tons per acre of ground limestone or the equivalent of marl.

The probable yield of beans will be also increased by supplementing the stable manure with a moderate dressing of 200 to 400 pounds per acre of acid phosphate, since this soil is undoubtedly deficient in phosphorus. This would also help the grain crop which follows, and increase the insurance of a good stand of clover when same is next seeded.

As to the choice between beans and soy beans, much depends upon whether a cash crop or a forage crop is desired. While soy beans are often recommended for thin land, it is the writer's experience that they cannot be depended upon to make a good yield on soil which has an acid reaction generally indicated by its failure to grow clover. It is probable that the loss of the sweet clover during the hot weather was due to such a condition of the soil and a consequent lack of inoculation with the nodule forming bacteria essential to the growth of all clovers rather than primarily to the midsummer drouth. It will be profitable to amend this condition by the application of lime, and if this is done, and supplementary fertilization given as above advised, this land should pro-

duce a paying crop of beans and at the same time enable you to place it in condition to be successfully seeded to clover.

Methods of Sowing Fertilizer.

I have been a reader of your paper for many years and would like to ask you a few questions if you will please answer them through your paper. Farmers here are beginning to use fertilizers, but they all have drills without fertilizer attachment. Some think the fertilizer must be put in the same drills with the grain to get the best results. Now, will a lime and fertilizer spreader to go ahead of grain drill and covered with drill disks be just as good? The reason for the question is this, the farmers have grain drills, and when buying a drill with fertilizer attachment the grain drill would be on hand, and standing idle, to take space in shed and be taxed. By using lime and fertilizer spreader the investment would be less and the implement could be used to sow lime, and further we would not have to pull the fertilizer attachment around over the ground when not using fertilizer.

Leelanau Co.

J. O.

While for grain crops the combination fertilizer drill is the favored implement for sowing fertilizer, this is due largely to the fact that the task can be accomplished at the same time the grain is sown, thus saving time when time is valuable. While the young plants may get a little better start from having the seed sown in the drill row with the fertilizer, yet there are disadvantages to this as well, since such contact sometimes tends to injure the germination of the seed.

Fertilizer can be just as successfully sown with a lime and fertilizer distributor. The best time to sow it with such an implement, however, is after the land is plowed and when it is being fitted for the grain or other crops, since this permits a thorough mixing of the fertilizer with the soil when the land is being worked in preparation for a seed bed, and the fertilizer is subjected to the solvent action of the soil moisture.

ECONOMY IN LABOR.

(Continued from first page.)

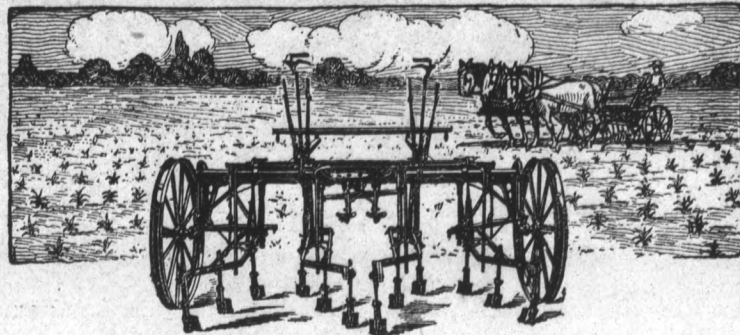
benefit and the cry for help would, in a large measure, cease.

It frequently happens that a good deal of labor is wasted in trying to crop land that is not in condition for cultivation. Suppose it needs under-drainage. Several things are likely to happen that will make cultivation unprofitable. Delay in spring means that in order to get the work done on time, probably double the help will be required. Then, too, undrained land requires two or three times the amount of labor in preparing a seed bed. It is not an uncommon sight to see men shoveling furrows across a field to let off the surface water. Ten chances to one the crop on this field will not pay expenses. Figure up the cost of opening these furrows, add the extra labor in tillage involved, plus the difference between a poor crop and a good one and the result ought to balance the outlay for tiles to put the land in first-class condition.

Sometimes, owing to size or peculiarity in shape of a farm, there are fields so far removed from the barn that much time is lost during seeding and harvest in going back and forth. Would it not be better to utilize this land for pasture, giving an occasional dressing of phosphorus. Then, instead of having the remainder of the farm laid out in many small fields, have but one to each year of the rotation. That is, if a three-year rotation is followed, only three fields will be required. This means an absence of weedy fence rows that require attention at a most inconvenient time, larger machinery may be used and there is less turning with teams and implements.

In most cases it will be found that the man whose work is systematically directed will accomplish more than the man who has plenty of help but no system.

J. H. McKENNEY.



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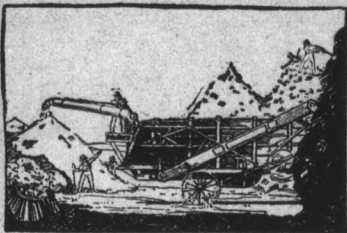
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It Saves the Farmer's Thresh Bill

If you own a tractor, hook it to Junior Red River Special and clean up an extra income this fall. Thresh your own grain and your neighbors' too. Our "Junior" is the ideal thresher for working with a tractor or gasoline engine. It is a younger brother to the Red River Special. Small enough to make home threshing pay—big enough to make money in custom work. Has every needed feature of the big Red River Special—famous "Man Behind the Gun"—shakers, large sieves, etc. Write for circulars.

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Builders Exclusively of Red River Special Threshers, Wind Stackers, Feeders, Steam Traction Engines and Oil-Gas Tractors
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Aphids, Red Bug and similar insects are a serious menace to orchards in spring. Do thousands of dollars' damage annually. Black Leaf 40 (nicotine sulphate) kills these pests. Recommended by Experiment Stations.

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Contain facts worth hundreds of dollars to orchardists, especially apple growers. Latest information on spraying for aphids and other soft-bodied, sap-sucking insects. Spraying time is here, so write at once.

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Black Leaf 40
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That secures highest prices for your fruit. Write for 1917 catalog showing our complete line and secure your baskets and crates at FACTORY PRICES

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BEES PAY WELL

Free catalog and Poultry Feed price list upon request. S. J. Griggs & Co. Dept. No. 27, Toledo, Ohio

The answer to the Health Question often lies in a change of table drink



LILLIE FARMSTEAD NOTES.

Sweet Corn Stalks for Silage.

We are now feeding the cows sweet cornstalk silage, the ears having been picked off and sold to the canning factory last fall. Sweet cornstalks may be said to be a by-product of the canning factory, the crop having been paid for when the ears were sold to the factory, and the stalks are a by-product, on the same principle that in butter-making skim-milk is a by-product. A good crop of sweet corn will produce around four tons of ears per acre for which the factory pays \$8.00 a ton and upward, depending on the variety of corn, and the farmer has the by-products—the stalks left at home and the husks from the ears and the cobs after the corn is sliced off—so that really all he sells is the green kernels of the corn sliced off from the cob for canning purposes. Really, a man sells but little of his crop and gets a fair price for the whole crop.

In ordinary times I don't think there is any question about its being profitable to grow sweet corn for the canning factory, where one has such a market, in preference to growing corn solely for feeding purposes although I don't think that the price from the canneries has advanced in proportion to the price for feed corn. Undoubtedly the factory people are absolutely fair about this because their product must be sold a year in advance, that is, they have sold this winter to jobbers, their sweet corn which is to be grown this summer, consequently they cannot advance the price in proportion to feed prices, although the price for sweet corn this year from the canneries is higher than ever before.

I have said before in the Michigan Farmer that if anyone can get a profit from canning factory crops, it is the dairy farmer because he can utilize all the by-products to the greatest advantage. The pea vines that the factory has no use for make a splendid food for dairy cows, and so the sweet cornstalks and the husks and the green cobs make good silage for the dairy cows and every bit of it can be utilized.

A question comes up occasionally as to the quality of this sweet cornstalk silage—is it good? Some farmers have heard that it is not. I heard a farmer say once myself that sweet corn was not good for silage. Now, that man didn't know. He probably never had tried it, he simply heard someone else say so and he took it for granted. His theory was that there was so much sugar in the juice in the sweet corn that when it was ensiled it created such a large percentage of acid that it was not a good food. All of us are apt to take somebody's "say-so" as a fact without questioning it and it may be that they received the information from someone who didn't know the facts and, therefore, it is handed down and a wrong idea is given out, simply because the facts were not actually known.

A number of years ago I raised Stowell Evergreen sweet corn on purpose for ensilage. We filled the silo with it and it made good ensilage. The cows ate it with relish. It perhaps was a little more acid than silage from well matured Dent corn, but this didn't seem to injure its food qualities, neither did it seem to destroy its palatability because the cows ate it with a relish. The only reason I didn't continue to grow it for silage was because I didn't think I could raise as many tons to the acre as I could with a rather late maturing Dent corn.

Again, for three years now I have put the sweet cornstalks into the silo after we picked off the ears and sold them to the factory so that I have had three years' experience in feeding this kind of silage, and when someone tells me that you cannot feed cows this kind of silage I realize that that

man doesn't know what he is talking about, he is basing his information on false premises without any actual facts. I cannot see but what sweet cornstalk silage, pound for pound, is just as good as any silage. Of course, we don't have as many tons of silage to the acre after we pick off the ears as though we would put ears and all into the silo. About half of the actual weight of the corn crop has been removed in the ears, but you can haul the cobs and the husks back and put it into your silo. This product being lighter and more bulky, it should be tramped better in the silo. It won't settle as well of its own accord. It would be a nice thing if one had a heavier product to fill in the last few feet of the silo so as to weight it down, because there is considerable loss on the top of this silage simply because it is lighter in proportion to its bulk.

I am of the opinion that pound for pound, the stalk of the corn cut at the stage of development when the corn is fit for canning purposes contains just as much digestible nutriment, or nearly so at least, as the corn, ear and all. At first this may seem unreasonable but you must consider that the ears are picked when the corn is in the roasting stage and that some of the nutriment would go to ripen these ears but if the ears are picked off when they are green that nutriment remains in the stalk and it is palatable and digestible, and consequently is a valuable food. We have never noticed any shrinkage in the milk supply when we changed from other silage to sweet cornstalk silage, consequently I believe

that sweet cornstalks are well worth preserving as feed and I believe that the green husks and the green cob after the kernels are sliced off if they are put into the silo before they get too heated and mold, make good silage. This being so, my idea is that the dairymen can afford to grow sweet corn for the canning factory because the \$8.00 a ton he gets for the ears, with the privilege of hauling the cobs and husks back is more than he could get out of corn crop by putting it all into the silo in the first place or by maturing the crop, husking it and feeding it in that way. It seems to me that we ought not to lose our heads just because this great war has produced abnormal conditions. We are coming back to terra firma some of these days and then we will want the canning factories, and to have them then we must support them now.

FERTILIZER FOR CORN AND POTATOES.

I am thinking of using fertilizer on some of my corn this year. Would like to know what analysis would be best suited for corn, also for strawberries and potatoes.

Shiawassee Co.

G. J. F.

Nitrogen and potash are so high in price, especially potash, that it is questionable if one can afford to use these ingredients at all. Phosphorus, in the form of acid phosphate, is not much higher than formerly, and usually gives results on all crops. My candid opinion is that it will be most profitable to use only acid phosphate, at least until prices become normal again.

COLON C. LILLIE.

The Small Fruit Garden

IN the producing of small fruit such as blackberries, raspberries, currants and gooseberries, the distance to market is of prime importance. Berries are more or less of a perishable product and if they are picked at just the right time for the consumer's table they must be hurried to market immediately. The farm close to a local market large enough to handle the crop is the safest proposition as a berry farm. A farmer located twelve or fifteen miles from a local market can possibly overcome his disadvantage with a motor truck but the expense of this means of transportation may make it unprofitable until the small fruit business is conducted on a very large scale. As a usual thing the farmer distantly located from a local market must depend on shipping from his station to the commission men in large cities where there is al-

labor market. The scarcity of labor makes berry production a hazardous occupation in some districts. No farmer should go into the fruit business until he makes an estimate of his possible labor supply at the time of harvest. The proposition can only be fully worked out through experience as every district has its own problems.

In selecting the varieties the time of ripening is important in its relation to the labor market. If too large an acreage is planted to one variety the bulk of the fruit will mature at one time and an inability to obtain pickers may result in severe losses. If the small fruit business is to be continued indefinitely it pays not to plant all of the land available for that purpose in fruit the first year. After a few years in one place a rotation is desirable to aid in producing an abundance of healthy canes without the great danger of insect pests and fungous diseases which may become serious in a patch remaining on the same ground for many years.

Consider the Market.

In supplying a local market the berry business pays best if it can be continued moderately over a period of several weeks. Instead of going heavily into blackberries or raspberries it pays to plant a moderate acreage of blackberries and raspberries, with some currants and gooseberries. By feeling the market it will soon be possible to determine which fruit is paying best and the future development of the fruit garden can be carried on along profitable lines.

In planning the small fruit garden special markets can often be studied to advantage. I know of one grower who grows raspberries extensively and dries them on long trays for a firm in Chicago which pays him a good price and uses the berries for jam. By studying his labor market this man is enabled to do quite a business in a few weeks of hustling and the remainder of the year he is not overworked by the routine duties of caring for a few acres of berries. Another grower ships entirely by crate to a large city. He



Cuthbert, the Best Red Raspberry.

ways a fairly steady demand for his produce.

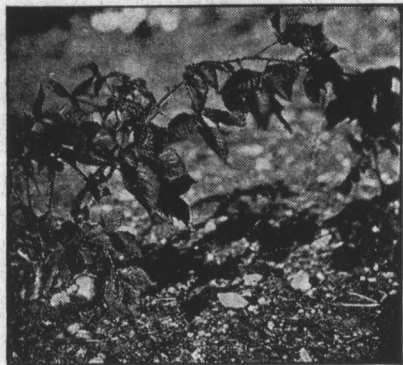
Quality Pays.

Regardless of the location of the farm, quality crates will bring a profit and poor packed crates of mushy berries will scarcely pay for the trouble of harvesting and packing. The location of the farm has a bearing on the

hires foreigners to come in and camp on his farm during berry season and carries on everything by wholesale. Berries have paid him an excellent income and he has made more money by specialization than he could have made from general farming.

Waiting for Profits.

A berry patch is not an immediate profit winner. It requires attention and patience. The first year all of the blossoms should be picked from the plants, thus enabling the energy to go into the production of wood. It is sometimes hard to remove the blossoms as there is a tendency to desire "just a taste" the first year to find out if the fruit really is as good as expected. Allowing fruit to mature the first year will be a serious tax on the energy of the canes and they will probably never be as profitable as they would



Eldorado is a Popular Blackberry.

have been if the energy which produced the fruit had produced fruit-bearing canes. It pays to nip back the first canes which grow until they are about eighteen inches high. This will induce more canes to spring from the ground and thus increase the fruit-bearing area for the next year.

Fertilization Pays.

Fertilization of the soil is important and cultivation is necessary to conserve the moisture and keep down the weeds. During the past year I allowed seven or eight hundred young chicks to run among the blackberry and raspberry bushes. When the berries were cultivated the chicks enjoyed a rich harvest of bugs and worms. They also ate many small weeds and weed seeds which would have developed but they never picked the leaves of the berry plants and certainly added some desirable fertility to the soil. While waiting for profits from berries the use of the ground in raising poultry proved very desirable.

It is, of course, best to fence the berry patch the first year to prevent injury from any live stock that may take a notion to ramble in that direction. Fencing the berry patch still leaves it as a desirable range for young poultry and from my experience this year the chicks were of some value to the fruit and did no injury that I was able to discover.

There are many points to consider in the growing of small fruit and often disease and glutted markets make the business rather discouraging. However, in general it is as safe as any phase of fruit farming and there is much satisfaction in cleaning up a good berry crop. In a successful season it makes a farmer feel that he is doing mighty well financially at least, for a few weeks and many farmers are finding that well managed berry patches are becoming more profitable every year.

Ingham Co.

R. G. KIRBY.

BOOK NOTICE.

"Strawberry Growing," is the title of a book by Prof. S. W. Fletcher, which is a practical guide to strawberry culture and also a sketch of the evolution of the strawberry in North America. It is full of suggestions on the various phases of strawberry growing and splendid illustrations which are of practical value. The book contains 320 pages, is published by the Macmillan Company, of New York, and can be purchased through the Michigan Farmer for \$1.75.

\$1150 F. o. b. Racine

Mitchell Junior—a 40 h. p. Six 120-inch Wheelbase
Price will be advanced to \$1195 on May 10th

Mitchell
SIXES

\$1460 F. o. b. Racine

7-Passenger—48 Horsepower 127-inch Wheelbase

Mr. Bate's Lifetime Car

Sturdy—Enduring—100% Over-Strength

The latest Mitchell is the 19th model built under Mr. Bate. It is the final result of 700 improvements.

It is the first car to announce our 100 per cent over-strength. Our former standard was 50 per cent over-strength. In the past three years, that standard has been doubled.

Over 440 parts are built of toughened steel. All safety parts are vastly over-size. All parts which get a major strain are built of Chrome-Vanadium. The gears are tested for 50,000 pounds per tooth. The springs we use—Bate cantilevers—have never yet been broken.

Several Mitchells have already run over 200,000 miles each. The Mitchell of today is built to be a lifetime car.

Costly Extras

This vast over-strength is a costly extra in these days of high-cost steel.

But the Mitchell, in addition, has 31 features which nearly all cars omit. Things like a power tire pump, ball-bearing steering gear, dashboard engine primer, etc.

And this year we have added 24 per cent to the cost of finish, upholstery and trimming. This makes the Mitchell the luxury car of its class.

All Are Free

These Mitchell extras, on this year's output, will cost us \$4,000-000. But they cost you nothing, because we save this on our factory cost.

TWO SIZES

Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor.

Price \$1460, f. o. b. Racine

Mitchell Junior—a 5-passenger Six on similar lines with 120-inch wheelbase and a 40-horsepower motor— $\frac{1}{4}$ -inch smaller bore.

Price \$1150 f. o. b. Racine

Price will be advanced to \$1195 on May 10th
Also six styles of enclosed and convertible bodies. Also new Club Roadster.

John W. Bate built and equipped this mammoth plant to build this one type economically. He has spent millions of dollars and years of time to do that. His methods have cut our factory cost in two. And the savings pay for these extras.

All the added luxury on this year's models is paid for by savings in our new body plant.

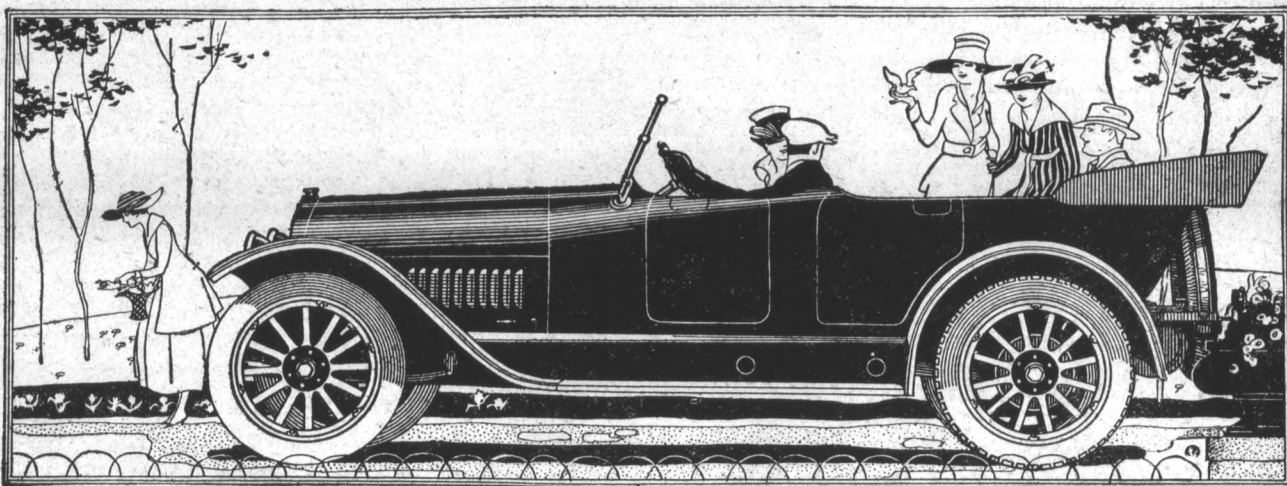
See Our \$1150 Six

Mitchell Junior—the smaller Mitchell Six—costs only \$1150. Yet the wheelbase is 120 inches. You have never seen anything like this value in a car around this price.

See also the larger Mitchell. Note all its extra values. You will want all these extras, when you know them, in the car you buy to keep.

If you do not know our nearest dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.



2 for 30¢



TALBOT 2 $\frac{3}{4}$ in.
TYRONE 2 $\frac{1}{4}$ in.

ARROW FORM-FIT COLLARS

The curve-cut top and band assures perfect sit and fit as well as healthful ease and comfort.

CLUETT, PEABODY & CO., Inc., Makers

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SEED BARLEY \$2.00 BU
RECLEANED. BAGS EXTRA 25c.
YOUNG-RANDOLPH SEED CO., Owosso, Mich.

15 H. P. Second Hand Gasoline Engine, running condition, for sale by The Dighton Grain Co., Dighton, Mich.
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Choice Northern Grown SEED POTATOES

DORR D. BUELL,
The Seed Potato Man of the North
ELMIRA, OTSEGO CO., MICHIGAN

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Fox and Wolf Hounds



of the best English strains in America: 40 years experience in breeding these fine hounds for my own sport. Save your pigs, sheep and poultry. Send 4 cents for catalog.

T. B. Hudspeth, SIBLEY, JACKSON COUNTY, MO.

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

FOR SALE Another fine lot of Collie Puppies, females \$3, males \$5. Ward W. Dunston, Clarkston, Michigan

SCOTCH COLLIE PUPS: Pure bred stock, Males \$5, females \$3. O. E. Hawley, Ludington, Mich.

When Writing to Advertisers Please Mention The Michigan Farmer.

Better Cut Silage

Helps To Increase Stock Profits

THESE animals were fed on silage cut by Silver's "Ohio." Note their records. "Ohio" cut silage makes better feed than ordinary silage. Better because it's cut more uniform—picks air-tight in the silo—free from air pockets—mold-proof—ferments properly—gives the animal all of the good food value of the corn or silage material.

Silver's "Ohio"

The Logical Silo Filler

The secret of cutting Silverized silage is all in the construction of the "Ohio"—the pioneer silo filler. The strength of the machine, the giant grip feed rollers, and double-bearing, non-springing knife cylinder all combine to give you a fine, evenly-cut silage no matter how hard you crowd the machine. You can set the knives at half inch cut and you get half inch. With heavy bearings at both ends, they cannot spring away from the cutter bar. Silage is all mold-proof—no shreds nor leaves can work through.

But there are many other big features in the "OHIO." The beater feed, friction reverse, direct drive, single lever control, non-explosive blower, etc. Write and let us tell you about them—and why more "Ohios" are used by Experiment Stations and Colleges than all other fillers. Backed by 62 years' manufacturing experience.

Two Books—FREE

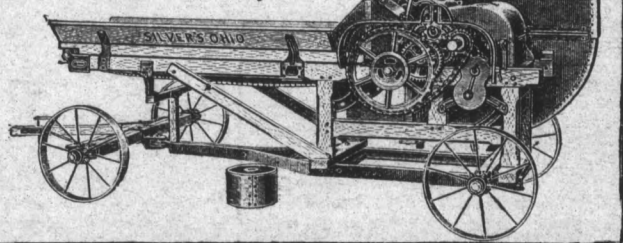
One is our four-color catalog. The other is our booklet on "Silverized Silage." Write for them today.

The Silver Mfg. Co., Box 390, Salem, O.

Animals illustrated here are owned by the Maplecrest Stock Farm Co., Kalamazoo, Mich. They have had an "Ohio" Cutter for about 12 years.

Silver's "Ohio" is made in seven sizes—fit any farmer's needs. 40 to 300 tons a day. Four horsepower up to big tractor power.

Special Light Draft Model—adapted for home silo filling. For four to ten horsepower gas engine. Write for three-color folder on these.



High Lawn H. Dekol
25592.5 lbs. milk;
1247.92 lbs. butter
in 365 days

Banostine Belle
Dekol
27404.4 lbs. milk;
1322.92 lbs. butter
in 365 days

Maplecrest Pontiac
Flora Hartog
25106.3 lbs. milk;
1232.64 lbs. butter
in 365 days

Corn for Silage

The originators and handlers in the east of a well-known brand of ensilage corn state that the corn plant is merely an overgrown grass, and should be treated as such and put in the silo when in blossom, the same as we would grass—that the place for mature corn is in the crib and not in the silo. This is contrary to the general opinion in this section of the state.

Cass Co. G. R. W.
At one time I discussed briefly the very same question in the Michigan Farmer. At the time I imagined it would lead to much discussion, but the article never brought out one single inquiry. No one seemed to notice it or did not deem the question of sufficient importance to make any comments. It strikes me that it is a very interesting and important question. After a man has grown and fed silage for twenty-five years he knows something about it from his own experience. Now, my experience warrants me in saying that corn ought to be ensiled before it is ripe. I don't like ripe corn for the silo. The cows don't like it and I am convinced that corn ought to be ensiled before it gets ripe. Just the right stage of development is the question at issue.

Green Corn Makes Good Silage.

Many years ago, we had a very wet period the last half of May and the whole month of June. I remember it well. We got our corn ground plowed the first part of May and expected to get the planting done in good season, but the weather turned wet and kept wet. We never had such a time, not even last year was as bad. The fact is, we never got our corn planted until the twelfth day of July. One would scarcely believe it but it is a fact. At that time we had no silo but built one on purpose to save this crop of corn, for I did not believe it would mature and it did not. We had a frost when the corn was just in nice condition to cook for green corn. In fact, we were eating some of it as green corn when the frost came. The frost was severe enough so when the sun came out the next day the leaves all shriveled up and turned white. The air was filled with a peculiar sugary odor that comes from frozen green corn. We were ready, and began cutting the corn at once and put it into the new silo. A neighbor who came over while we were filling the silo remarked that it was too bad to lose so much good feed (the corn made a fine growth), when a few days more would have saved the crop. I felt pretty blue myself. But we did not lose that crop. We had fine silage. I have often remarked that our first silage was as good as we ever had.

Ripe Corn Silage Not Satisfactory.

Since then I have ensiled corn that was ripe. Some of the ears were ripe enough to crib but we did not seem to get the results we did with this first crop of silage. I have often heard people advocate ripe corn for the silo but my experience will not warrant me in approving this idea. I have always said mature corn, not ripe corn.

The chemists tell us that at the period of glazing, which is right following the milk or boiling stage, the corn crop contains the maximum amount of food nutrients. As it ripens it contains a little more dry matter, but no more nutrients, with perhaps a little more fat, which is stored in the kernel.

Yet, there is another principle to take into consideration, and that is digestibility. This the chemist can not tell us, only the cow can do this, and so far as I know no experiments have been made to give us the coefficient of digestibility of corn silage at different stages of the development of the plant. We know, however, that in all plants as they become ripe they are not as digestible, some of the starch has changed the cellulose or woody fibre which is not dissolved by

the digestive fluids. Therefore, even if ripe corn shows chemically more nutrients it is no sign it is more valuable as food because it is not so thoroughly digestible.

Palatability a Factor.

And yet again, there is another important factor to consider and that is palatability. This is of more importance in getting results in feeding than many seem to realize. If animals do not like the taste of the food, they eat less of it, no matter whether it is digestible or whether it contains the largest per cent of nutrients or not. We can't get around this fact. Why don't we wait until sweet corn contains the largest per cent of digestible nutrients before we eat it? Simply because it is not so palatable then.

Now, to come to the question asked by G. P. W. Corn is the giant of the grass family of plants. What will apply to preserving the other grasses for food will apply largely to corn as well. The chemist will tell you that timothy hay, cut when ripe, will contain more dry matter and more total nutrients than when cut green, but we know we can not get as good results in feeding. The reason is it is not so palatable nor as digestible.

I never have been able to get as good results with ripe corn as with the green corn. For the same reason, I do not believe in ensiling corn when it is half grown, or when just tasseled out, or even when it is in the milk. It doesn't contain then sufficient nutrients. Neither do I believe in waiting until the starch has turned to cellulose and has become indigestible. I believe the proper time to ensilo corn is when it is just past the boiling stage, just glazing. Then it contains about the maximum of food nutrients and these nutrients are digestible and last, but not least, the silage is most palatable.

COLON C. LILLIE.

SOUR SKIM-MILK FOR CALVES.

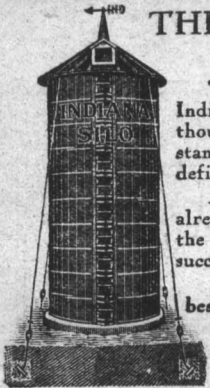
That calves do as well or better on sour skim-milk in summer as they do on sweet will be interesting news to many farmers who have hitherto been kept from raising calves by the expense of keeping the milk sweet in hot weather. This expense, experiments carried out by the Department of Agriculture, indicate to be quite unnecessary. The calves will make as rapid gains on sour skim-milk. In winter this is not as satisfactory. It chills the calves, and some of them drink it with great reluctance. Very young calves have ever been known to refuse it altogether. On the other hand, of course, it is much easier to keep the milk sweet in winter.

But there is need of precaution in this matter of summer feeding of milk. Unless the milk is produced and kept under cleanly conditions, it may become contaminated with disease-producing bacteria. Farmers should therefore allow the milk to sour quickly and then feed it without delay.

In the course of the experiments, sour skim-milk is fed to twenty-two calves, Holsteins, Jerseys and Guernseys, at different seasons of the year. In no case did it cause digestive disturbances even when the change from sweet to sour milk was made abruptly when the calves were only a few days old. Moreover, no evil results followed the alternate use of sweet and sour milk. It seems, therefore, that the common conception that sour milk leads to scours is quite unfounded. It is in the care of the milk.

The calves, it was found, did not like the sour milk as well as the sweet, but in the majority of cases soon became accustomed to it. The aversion, however, increased when the milk was fed them at low temperature.

THE INDIANA SILO



Thousands of farmers in all parts of the United States have put the Indiana Silo to the test of service during the past fourteen years. Fifty thousand are now in use. The first Indiana Silos ever erected are still standing, still in excellent condition and still apparently good for indefinite years to come.

A large per cent of our 1916 sales were made to farmers who were already using Indiana Silos. Many of these repeat orders came from the owners of the finest farms in America—from the largest and most successful breeders and feeders everywhere.

These men could have bought any silo at any price—they buy the best of everything—that's why they continue to buy Indiana Silos.

If you are going to buy a silo—this satisfactory service rendered everywhere—should be of special interest to you.

The cost of all materials is advancing like the price of wheat and corn.

Why not save money by contracting for your silo now. It undoubtedly will cost you more next spring or summer.

Let us send you our proposition—to contract now for your silo and deliver it later. We still have openings for a limited number of farmer agents.

INDIANA SILO CO.

582 Union Building, ANDERSON, IND.
582 Exchange Bldg., KANSAS CITY, MO.

582 Indiana Building, DES MOINES, IOWA
582 Live Stock Exch. Bldg., FT. WORTH, TEXAS

Offset Fertilizer Uncertainties

by using green manures. Cover crops may be sown between the rows at last cultivation of corn, cotton, etc., and plowed under in Spring. They protect the soil and increase the next yield.

Eureka New Seeder

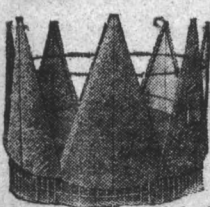
3 Feet Wide

sows clover, rape, rye, turnips, etc., and covers seed. Makes dust mulch and kills weeds. Pays for itself by seed saved. Quick delivery from stock near you. Send for catalog.

EUREKA MOWER CO., Box 1226, UTICA, N. Y.



Cuts fertilizer bills in two.
Adds humus to soil.



Winner Opening Silo Roof

Gives 6 to 9 feet more silo space and 15 to 40 tons more silage worth up to \$160 each year. Delivered prices quoted. Special discount to Early buyers. Act quickly. Write to day.
Silo Specialty Mfg. Co.,
229 19th St.,
Clinton, Iowa.

121 Market Bank Bldg., Minneapolis, Minn.

LEARN AUCTIONEERING at World's Original and become independent with no capital invested. Every branch of the business taught in 5 weeks. Write today for free catalog.
JONES' NAT'L SCHOOL OF AUCTIONEERING,
28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

SEED BARLEY \$2.00 BU

RECLEANED. BAGS EXTRA 25c.

YOUNG-RANDOLPH SEED CO., Owosso, Mich.



ZYRO Metal Silos

Keep silage sweetest and better tasting. ZYRO Pure-Galvanized-Iron or Black-Enameled Silos are proof against wind, fire, shrinking, swelling, collapse and repair. Anti-corrosive, rust-resisting.

Cost less to erect

Flanged metal sheets fit easily and are fastened in place by two men. Positively air and moisture-tight. FREE BOOKLET tells whole story why ZYRO Metal Silos give best results. Write today for your copy.
The Canton Culvert & Silo Co.,
Box 108, Canton, Ohio. Makers of ZYRO Corn Crib and Grain Silos.

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The Brood Mare

Will you kindly publish as soon as possible a short article on the care of a brood mare, before and at foaling time, so that a novice in the business will know what to do to insure a healthy live foal?

Genesee Co.

W. E.

THE brood mare that seems to have the least trouble and produces healthy sound colts, and also has little trouble at foaling time, is one which had been worked moderately, or has had regular daily exercise. Of course, she should have plenty of nourishing food of good quality, especially during the latter gestation period. It is also important that she should be supplied with clean drinking water, groomed once a day and her stable well supplied with fresh air. The brood mare does best when kept in a box stall. The writer knows of no very good reason why a brood mare cannot be used to do moderate work up to within ten days or two weeks of foaling time. A box stall should be thoroughly cleaned and disinfected with either coal tar disinfectant or white-washed with fresh lime wash for her to foal in. She should be kept in this stall for a week before she foals. The bedding should be clean. A quiet secluded place where the mare can hide away from other horses seems to be her choice location. Her food supply should be nourishing, but of a laxative nature. A few well-salted bran mashers or roots will open her bowels. A mare that is constipated sometimes has trouble foaling. When she foals, notice if she cleans properly. The udder of mare should be washed clean before the colt is allowed to suck; this will often prevent the young colt from becoming infected. The navel of colt should be washed with one part bichloride of mercury and 1000 parts water; or one part coal tar disinfectant and twenty parts water, then the cord immediately painted with one part tincture iodine and two or three parts of glycerine or olive oil two or three times a day until it shrivels completely. It is not necessary, and sometimes a great mistake to tie the cord. If there is much hemorrhage, it sometimes has to be done to stop the bleeding, but the string should not be left on more than twelve or twenty-four hours. The bowels of the new born colt are usually costive, but if it is allowed to suck the first milk from mother, it will usually loosen its bowels, but if not, inject two or three ounces of olive oil cautiously into rectum occasionally until bowels move fairly free. Both the mare and colt should be kept in a warm, dry, clean portion of stable until the colt is two or three days old; then you need to pay little attention, more than to feed the mare. During warm pleasant weather the brood mare that is running on pasture seldom requires much watching or special care.

For many years the writer kept twenty or more brood mares on his farm and in order to save colts, he always cautioned his men to leave the mares alone at foaling time; unless they really required assistance. This plan proved much more successful than when the mares were constantly being watched.

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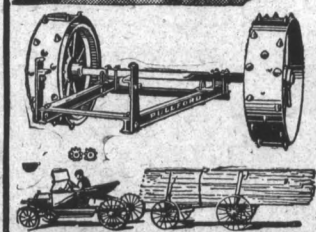
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LITERATURE
POETRY
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MICHIGAN FARMER
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PUBLISHED WEEKLY.
JOURNAL.
ESTABLISHED 1843.

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

MRS. BELINDA BROWN responded to the knock at her door to find Asaph Allen standing on the porch.

"I thought maybe it was you," she greeted cheerily. "Come in and tell me how Hepsibah 's gettin' on. I haven't heard from her since you stopped in last week on your way down to the auction."

Asaph moved solemnly toward the proffered chair. His bent frame almost creaked as he sat down. Mrs. Brown resumed her mending close by the patch of sunlight at the south window.

"Well, Hepsibah 's bad off." The old man spoke in a mournful and discour-

Putting Backbone Into Asaph

By ORIN CROOKER

aged tone. "She's real bad. I don't see no change over a week or two ago. We had Doc Splinters out from the city to see her the other day but he didn't give us no encouragement. She 's all sort of to pieces and run down and—"

"So you've decided on a silver gray coffin, I suppose," interrupted Mrs. Brown, "and picked out the hymns to have sung at the funeral."

Asaph's backbone stiffened and he

straightened up with a jerk which caused some of his rheumatic joints to snap audibly.

"What 'do you mean, Belinda? I didn't say nothin' about funerals did I?"

"No, but you looked 'em," she replied kindly. Her face brightened in a genial smile. "I was thinkin' I heard church bells a tollin' just before you set foot on the porch. Guess it must have been a case of comin' events cast-

in' their shadows in advance."

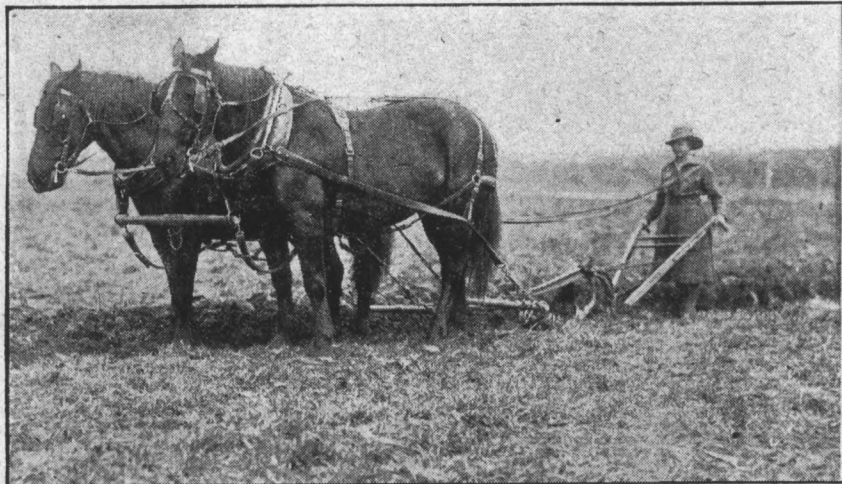
"Well—you wanted to know how she is gettin' on," he parried.

"True enough," Belinda assented, "and you and I have known each other long enough for you to realize that I'm not in the habit of makin' sport of anyone's troubles or burdens."

Asaph creaked somewhat uneasily in his chair.

"You didn't say nothin' about funerals," continued the woman, "but I'd like to know how you expect to keep from havin' to call in the undertaker if you inflict Hephzibah day in and day out with the same kind of an atmosphere that blew in at the door the mo-

WORLD EVENTS IN PICTURES



Women Preparing to Take the Place of Men Behind the Plow.



Battlefield on Western Front After Germans Had Been Driven Out.



Preparedness Parade of Fifth Avenue, New York.



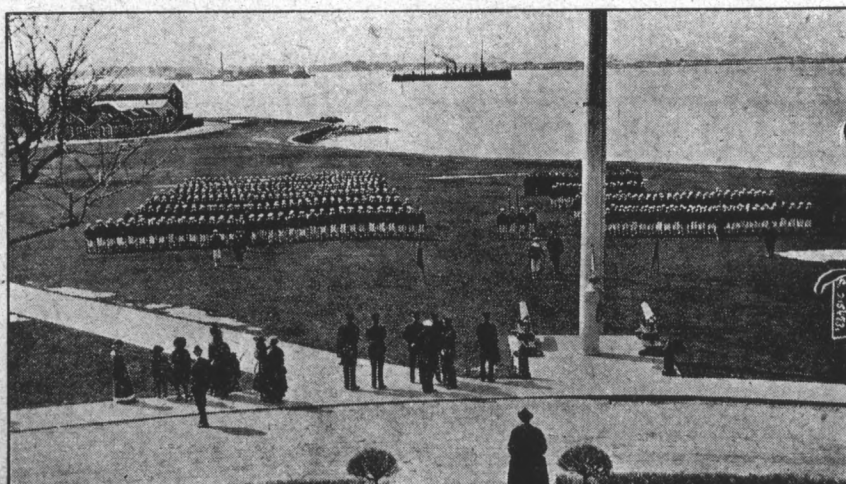
Showing Naval Rookie How to Load Rifle.



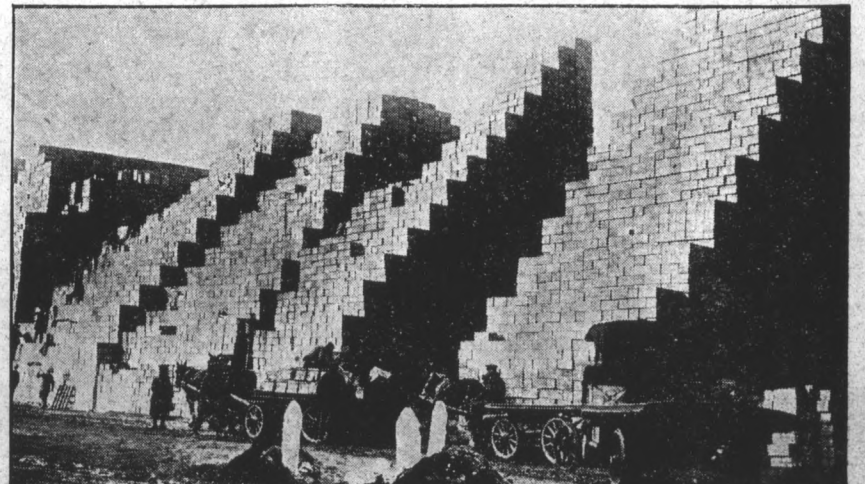
Young America.



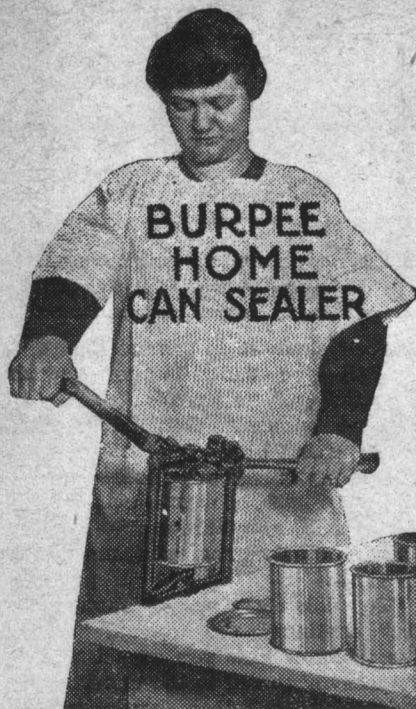
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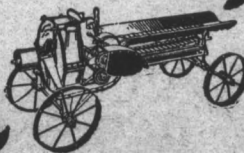
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ment I opened it and found you standing on the steps."

"But Doc Splinters said—"

"Who cares what Doc Splinters says so long as Hephzibah hasn't yet started for heaven? I'm sure the good Lord doesn't intend that those nearest her should make her feel that they're disappointed because she's upset their calculations by postponing her departure."

The old man's furrowed face had grown red and angry but the woman before him never relaxed her grip on the kindly smile which played about the corners of her lips and eyes.

"Asaph," she said, as her visitor rose and moved toward the hall, "I won't blame you one bit if you go out that door mighty provoked with me. Sometimes it makes folks mad to know the truth; then again it isn't possible to make 'em see the truth without makin' 'em mad. Perhaps in your case it's sort of worked both ways. Now you go home and make Hephzibah feel certain that she's goin' to get well. With the high cost of livin' hittin' everyone of us every time we turn around there isn't no sense of even thinkin' of holdin' that funeral until it's absolutely necessary."

"Belinda," replied Asaph, as he laid

his hand on the knob, "I don't know whose turn 'll come first to knock at the Pearly Gates—yours or mine. But if it should be yours I'll send you some flowers to take along. I guess you're right. Hephzibah's havin' a hard enough time without me addin' to her burden. I'm goin' home and put on a clean smile—as Nate Odle always says every time he changes his collar. Perhaps Hephzibah won't want to leave us yet awhile if we make her think life is worth livin' down here."

The two looked into each other's eyes for a moment. The anger was gone from Asaph's face. The genial smile still lightened the features of Belinda.

"Good-by, Belinda."

"Good-by, Asaph."

The woman watched her caller as he turned up the road in the direction of home and Hephzibah.

"Asaph's got a good heart," she mused. "I didn't want to hurt his feelin's. But sometimes the only way you can put backbone into a man when he's clean discouraged is to make him downright ashamed of himself."

Then Mrs. Belinda Brown picked up her mending and sat right down in the midst of the patch of sunshine at the south window.

"Contraband" RANDALL PARRISH

It was no small job getting to him, using the slippery rail for a ladder, and I was knee deep in water when I finally found foothold in the ruffle, and rolled the spar off the imprisoned limb. He was lying flat on the deck, his head barely free of the waves, but was able to clutch the nearest stanchion and haul himself up to the protection of the rail. His face was but a blurred outline, although I could perceive the glimmer of a white shirt. I stared beyond him into the black silence.

"You say Seeley is down there?"

"I fell on top of him," the words scarcely audible. "He was trying to get into the cabin, when he lost his grip. I tried to catch him, and he took me along. 'Say,' he was breathing hard, 'do you know if there was a girl on board?'"

"Yes, there is. I met her night before last on deck. Seeley was trying to reach the cabin, you say? He was endeavoring to save her?"

"Ay; I only got a word of it. But I thought the fellow had gone mad! Who is she?"

"I do not know; but never mind who she is. Did Seeley tell you where she was hidden?"

"In a storeroom, next to the steward's pantry; he said the door was locked."

Desperate as our own situation was, all thought of personal danger left me in sudden realization of the awful horror fronting her almost under our very feet. I could picture the darkness, the swash of the water, the helpless beating against the locked door. I gripped McCann by the arm.

"We must get her out of there," I cried. "Come on with me."

"Where, down—down there?"

"Yes; of course; you are a man, I take it. The lantern is still burning, and we have a chance. If the yacht goes down we might as well be below decks as up here. Come now, wake up, McCann—we are Americans, and it is women first, you know."

If he was a coward he had no wish to let it be known, although the suddenness of disaster had broken his nerve. The words spoken, the tone of my voice, touched his pride, his real manhood.

"Ay, you're right, Hollis," he said heartily, and the grip of his hand

tightened. "I'm no seaman; I hate the sea, but no one ever called a McCann a quitter. I'll go as far as you, and we'll get that girl out, or drown together."

I was climbing the rail before he finished, reckless of all else except the task confronting us. There was a sturdy ring to the man's utterance which yielded me new courage. I had found a comrade upon whom to rely. He was following me inch by inch, fighting for hold along the stanchions, every nerve and muscle braced for the effort. Yet, had he not responded, just the same I should have gone on alone. The face of the girl whose hand I had held in mine under the light of the stars, seemed to rise before me, her eyes pleading for help. The vision urged me forward. I know not what strength, or skill, enabled me to swing from the rail and grip the cabin front, but I hung there with one hand, my feet finding slight support on the slippery slope of the deck, and reaching back gave McCann support, while he also made desperate passage to the safety of the companion. An instant later I was beside him, and we crept together down the inverted stairs.

The frightfulness of our position became more evident as we advanced. The dead bodies, the smashed furniture, the horrid swaying of the hulk beneath us, suspended, we had to use the forward wall as a floor, crawling through the litter, made us feel that certain death must end the adventure. The steward's body had slid forward, and I crept past so closely that I could scarcely escape touching the dead fact. There was a hook in the deck below—for what purpose it had been placed there I do not know—but it gave me a foothold, enabling me to kneel.

"Here, McCann, climb to my shoulders," I ordered, "and take down the lantern. Quick now, I'll hold you all right."

His face was ghastly, and he obeyed as though he moved in his sleep. Every muscle in me felt the strain, but I held him, straightening out my body, and balancing myself, until his uplifted hands gripped the light.

"Have you got it?"

"Yes; let me down slowly."

"All right; hang on to it for your life—now."

My arms gave under the strain, and

a sudden surge of the sodden wreck, but he held to an end of the overturned piano, the light still burning feebly, threatening every instant to flicker out. I caught and steadied it, turning up the wick, and casting the faint glimmer along the passage leading to the steward's pantry. I had never been beyond those swinging doors, which now stood wide open because of the position of the vessel, but I realized clearly enough what the probable arrangement would be. This was a pleasure yacht, and next to the pantry would come the officers' quarters, the steward and waiters bunking opposite. Doubtless there would be some entrance forward, as the captain was the only one ever seen in the main cabin, but if so it would be through the bulkhead, which was now tightly closed, and which now alone held the vessel swinging like a pendulum, scarce a third out of water. If my theory was right, and it must be, then the woman would still be alive, a helpless prisoner, yet still living. But how we were ever to get to her, down that sheer cliff of deck, was as desperate a problem as I ever fronted. Nor was there time for ingenuity to discover a way. I could hear a lapping of water, the groaning of wood, and once, far away, the muffled voice of someone shouting. McCann was breathing heavily, and his eyes meeting mine were vacant of thought, filled with terror. If he would be of any real use I must arouse him, give him work to do.

"You are safe enough," I began sharply. "That piano can't fall; you kick those chairs out—yes, down the passage; they will catch somewhere and give us foothold. Good! Can you reach the edge of that rug? Brace yourself, and haul it loose; now pull, man, this is life or death. Fasten it through the hinge there—no, pull it through, and tie a knot. Lie down to it—I'll hold your foot; that's is! Now let me pass, and you follow."

I slipped down, gripping the rug with one hand, the other clinging to the lantern, the dim, smoky glow of which made the passage visible. The pantry door stood open; indeed, I doubt if it had a door, but everything else was closed. I could not see the end of the passage, but sufficient water had already either seeped through the bulkhead, or found entrance through an open port, to flood the lower portion. I could see the glimmer within a few feet of me, and hear it swash back and forth as the sodden hulk rolled. Two of the chairs which McCann had kicked loose in the cabin above, had lodged in the doorway below. How firmly they were caught could not be determined, but I must take the risk that they would sustain my weight, for I had reached the end of the rug. McCann was just above me and I sung out to him to hold fast, then, the lantern wire gripped in my teeth, I lowered myself the full length of my arms. This brought the water to my knees, while the lodged chairs were a foot or two below. As I hung there, dreading the plunge, my eyes were directed opposite the pantry, and the gleam of the lantern glittered on the blade of a hatchet just inside the door. Never was a tool more welcome.

"Hold tight above there."

"What are you going to do?"

"Swing in toward the door on the

A GIFT—IN TIME OF ILLNESS.

BY CORA A. M. DOLSON.

"I've brought some water from our spring."

The little maiden said;
"Tis cooler than is in your well,
And I remembered
Maybe your father'd like to drink
Of this, now he's in bed."

Dear little maiden! would we all
In our remembering
Could be as wise in choice of gifts
That we in love would bring,
As you—in giving of the draught
From the cool woodland spring.

right—there is a hatchet lying there.” The rug would hold! I had no doubt of that, for it was strongly woven, and the knot could never pull through the hinge. With feet braced against the opposite wall I forced my way across, making three efforts before my fingers finally gripped the hatchet handle. Clinging with one hand I thrust the tool into my belt, fully prepared now to let go.

CHAPTER VI. The Rescue of Vera.

TAKE this lantern, McCann,” I called, and held it up to him, “I’ll need both my hands free. Hold it as low as possible. Now, here goes!”

I did not pray audibly, but a prayer was in my heart, as I released my grip on the rug and took the plunge. The first chair crumpled up beneath my weight, but by good luck the second held just long enough to enable me to grip the latch of the door and cling tight. The slant of the deck gave one groping foot precarious purchase on the threshold, although water swept nearly to my waist, and for a moment I tottered there, helpless to do more than merely sustain my position. The noise made by this struggle must have been heard within, for I became aware of water splashing, and a fist pounded the door.

“Help! is that you Mr. Seeley?”

“No,” I answered, nerved to new effort by the sound of her voice, and the knowledge that I had indeed located the right spot, and found her still alive. “This is Hollis. Is the door locked?”

“Yes, Mr. Seeley has the key; you must be quick—the water is already above my waist.”

“No time for keys then,” I said. “Stand back until I cut a way in. Throw your light down, McCann—ay, that’s better!”

The latch of the door was forward; I could cling to it, and have my right hand free with which to wield the hatchet, keeping both feet wedged on the threshold. The light was the merest glimmer, yet sufficient to reveal the paneling of the door, and I hacked at this fiercely, exerting the full strength of my arm. Whatever the wood might have been, it was no light pine. A dozen blows, however, splintered the upper panel, and then I sent the keen blade crashing downward, gouging out great chunks, and splinters, until a jagged passage had been made, sufficiently large for the passage of a body. I could see nothing within; the darkness was intense, and the girl must have drawn back to escape injury, and hence was invisible. The water was deeper in the cabin than in the passage without, and now came pouring forth through the opening, drenching me nearly to the arm-pits. McCann called in warning, his voice cracked with terror he no longer could control.

“Wait; I’ll be there in a minute!” I shouted back, my only fear lest he desert us. The bulkhead still held; this torrent was water which had found other entrance; no doubt it would eventually increase in volume, and sink the vessel, yet there was still ample time for us to escape. There would be no sudden plunge while that bulkhead held.

“Are you all right, Miss Vera?” I asked anxiously. “Where are you? Can you see me?”

“Yes; I am clinging to the berth.” Her voice was excited but clear. “The water is up to my shoulders. Is the opening sufficient?”

“For you I think, if you can make it alone. I should have to knock out another panel to get through myself.”

“There is no time for that, and no need. I’m coming now; watch out.”

Our two bodies so obscured the faint glow of the lantern dangling from McCann’s hand above, that I could see nothing, yet I managed to grapple her arm, and thus assist in dragging her

into the jagged opening. The water, surging to the sodden roll of the doomed yacht, and now dammed by her body, poured over us both in suffocating volume, but the struggle was only for a moment, and then I had the girl safely clasped in my arms, her head elevated well above the receding flood. “Now, grasp the rug,” I ordered, as I thrust the light form upward. “It will help you creep up the slope of the deck. Creep on back, McCann, with the lantern; never mind me—I’ll find a way out.”

She possessed sufficient nerve and strength for that effort. There was no hesitance; no word of protest. Silently, inch by inch, she fought her way aft, her feet slipping on the wet planks, but her fingers gripping desperately at the sustaining cloth. I could only see the outline of her revealed against the gleam of the lantern, as McCann clambered upward in advance. My struggle was to keep my own feet in that torrent of water; it was deepening rapidly, and there seemed to be a more violent surge to the hull as though the sea without was growing disturbed. I could hear the groaning of the bulkhead to the strain, and realized that the timbers could not long hold against the immense weight. I could perceive nothing, save the faint radius of light above, now nearly obscured by the two forms creeping upward; and the water, surging back and forth from wall to wall, already slapped me in the face. Yet I clung there, my hand gripping the jagged edge of the hole in the door, my feet still firmly planted on the sill, until assured both the others had attained the after cabin safely. Then I sprang for the lower end of the rug, and went up hand, over hand, reckless of the strain, my one desire to get out of that black hole again into the open air. Suddenly the fear had come into my heart; not until then had I paused to think—effort had obscured all conception of danger; but waiting there in that black hell, the creaking of timbers in my ears, the water clutching at my throat, the full horror of it overwhelmed me with sudden terror.

Yet, once I had attained the cabin, all this left me. Ghastly as the wreck of that interior appeared, the wider space brought back to me a seaman’s courage. There was hope yet, an opportunity to fight. McCann had dropped the lantern on the overturned piano, and was urging the girl forward toward the stairs. Terror made him oblivious to everything except a mad desire to escape, but she was glancing back, as though in search for me. I clambered to my knees amid the litter of furniture, and snatched up the light barely in time to keep it from smashing on the deck.

“I am all right,” I called confidently. “Get outside both of you as quick as you can.”

Never in all my life have I experienced the same sense of relief as when I stumbled out of that companion onto the open deck, and felt the night air in my nostrils; yet not until then did my brain truly grasp the desperate nature of our situation. Below, fighting fiercely for her life, my whole attention had been centered on the one object, but now the whole horror lay outspread before me in all its hideous details. The gleam of the lantern revealed the sharp slope of the deck, and the surge of water churning from rail to rail scarce a dozen feet away; the rattle of tangled spars and ropes to port under which I knew lay dead bodies; the smashed bulwarks, and a wrecked small boat hanging stern down from a davit, with a man’s arm and head dangling. All about us the night and sea was black as ink—not a glow anywhere except a single white gleam far away to starboard like a distant star. It was not a star—it was far too close to the horizon—beyond doubt it was a masthead light on the steel monster which had run us down.

(Continued next week.)



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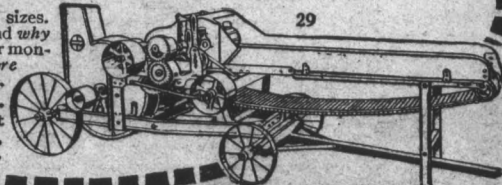
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Woman and Her Needs Success or Service

I SAW a successful man the other day. I know he is successful because the whole town says so, and he admitted it to the men about him as I passed by. The outward and visible signs of his prosperity are apparent. He owns a twenty-room house in a swell residence street, in which his wife lives surrounded by eight servants, not to mention the scrub-woman by the day and the seamstress who comes three days every week. Then there is a 400-acre country place (they used to be farms); a big twelve-story office building down town, mining stock and presidencies and directorates in corporations galore.

He started out as a bare-footed news-boy twenty-five years ago and is now rolling in wealth. Therefore he is a success. But let us not look too closely into the methods by which he got his money. It might set us to thinking, and thinking is bad for worshippers of success.

Let us look into other matters which might indicate his success. Has the man friends? He has hundreds of flatterers. He is always surrounded by both men and women, who smile on him and entertain him and laugh at his boorish attempts at wit. No end of people accept his invitations to dinner or week-ends at his country place. In fact, women have been known to shed real genuine tears when they were left out of some of the parties he gave. But of all the crowd who surround him I do not know one who does not at heart despise him. If there is one whom he has not insulted I have yet to learn it. And the whole crowd would be delighted beyond measure if he were to lose every cent he has, especially if part of it were lost to them.

How about the man's wife? Surely any woman could love any man who was able to surround her with such luxury. What more does a woman need for happiness than clothes, jewelry, autos, winters in the Bermudas, springs at Palm Beach, summers up north and the knowledge that every woman she knows, or who knows her, envies her? Isn't that enough to make any woman happy? Perhaps, but it does not make this one happy, for at heart she loathes her husband. She still lives in his home, not because she loves him, but because she loves the things his money can buy and has not the moral courage to break away from it all. If she could have his money without him she might have a good time. He is not in the least necessary to her happiness, but his money is, or to what she terms happiness.

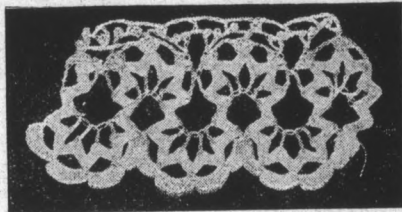
His children love him in much the same way. They are always glad when father goes away on a business trip, for then they can enjoy themselves. When he is about he keeps up a tirade on what he had to do when he was a boy; the coarse fare he was obliged to eat; the winter he went barefooted until January, and how grateful they should be to him. His table manners are atrocious, and the children, who have been well trained by governesses are ashamed of him. He ridicules their niceties, which he paid good money to have instilled in them; threatens to make them wear the same sort of clothes he had to, though he wouldn't do it for worlds, and, in short, nags them until they hate to see him coming. His absence is the one thing they pray for with real fervor.

Is he a success? Would you consider yourself a success if you were not necessary to the happiness of your wife and children? If you were sur-

rounded only by people who had a knife ready for you and were longing for a chance to use it, would you consider yourself a highly successful personage? If you would, then you have entirely missed the meaning of life.

Life was given us for service, not for the accumulation of money. And the man or the woman who forgets, in the chase for material things, to become a necessity to family and friends, is a rank failure.

The most successful man I know of is not rich. He is not regarded as a great success by his acquaintances. In fact, I've heard him called a "dub." But he is absolutely essential to the happiness of his wife and children. When he goes away for two days the entire family goes into mourning. When he returns they literally fall on his neck and weep real tears of joy. They almost fight one another to see which can do most for him, and there is a



Serviceable Rickrack Edging.

regular "kill the fatted calf" celebration because father has come back.

To my mind this man is the real success, but he regards himself as a sort of failure, and sighs over his small bank account.

Some day the world is going to wake up. There are signs of it now. When it really rubs the sleep out of its eyes we shall all see that success is not measured in dollars and cents, but in honor, in truth and in service.

DEBORAH.

RICKRACK AND CROCHET EDGING.

BY GRACIA SHULL.

This design is extremely dainty and pleasing and promises to be a favorite trimming for children's clothing, undergarments, etc. Made of coarse braid and heavy crochet cotton it will make attractive edges for towel ends.

To make: Insert hook in point of braid, * 1 treble in each of next 4 points, 1 sc in next point, ch 7, turn braid over, sc 1 in next point, repeat from * to end of row.

Second Row.—* ch 7, 1 dc in point; repeat from * to length of lace.

Third Row.—11 dc over 7 ch, 1 sc over next, * 11 dc over same 7 ch, 1 sc over next, repeat from * to end of row. This completes the lower edge.

Upper Row.—Begin at point over second space, ch 5, * dc 5 in next point, ch 4, dc 5 in next point, 1 treble in each of next 2 points; repeat from *.

Second Row.—Double picot loops across made thus: * ch 7, catch back in 3rd stitch for picot, ch 7, picot, ch 3, sc 1 in center of group of 5 dc repeat *.

Third Row.—Dc 1 * between picots, ch 6, dc 1 in next, repeat * to end of row.

HOME QUERIES.

Household Editor:—I would like to say to Mrs. A. C. P., if she wishes her silk rug to wear well she should request the weaver to arrange the warp as follows: For a No. 10 reed, put 200 threads on the beam. Thread two threads, then back harness and same two threads through one space of the

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feed. Then two threads through the front harness and through the one space of the reed, leaving three spaces between. Do this all across, which very nearly, if not quite, hides the warp. I bought all black warp and am highly pleased with the rugs. It requires at least one-third, perhaps one-half, more rags to the yard but wears better, enough to pay four or five times over. I made a comfort I like very much, from two silk dresses, piecing each kind separately for one side, anyway to get it large enough. Of course, striped or plaid silk would not look so well pieced this way, but my figured silk, when tied, did not look so "crazy" as you'd imagine. We have pieced a number of silk quilts from scraps left. I am knitting a rug with the black warp, using "garter stitch," putting silk in two inches long and about two-thirds of an inch wide around every other stitch or every third stitch. This makes a very lasting rug. Forty stitches make strips about five or six inches wide. Then sew them together with warp. A cousin made portieres, but was sadly disappointed in them. Will gladly give any further explanations.—Mrs. G. E. G.

H. C.—We cannot publish songs in these columns.

Household Editor.—Information and recipes for making hard soap, white or yellow, from pork fryings and tallow, would be much appreciated. Will home-made soap loosen the dirt, like the commercial soaps containing naphtha, etc., in laundry work?—F. M. T.

Receipts for making soap are given on the cans of concentrated lye which most housekeepers buy now for household use. I have never used home-made soap, but do not believe it would loosen dirt as readily as do the naphtha soaps.

SOY BEANS.

Soy beans, introduced into the United States more than a hundred years ago primarily for use as a forage crop, are in reality one of the most nutritious of the legumes when used as human food, according to specialists of

the United States Department of Agriculture. The fact that they contain no starch makes them valuable for invalids who can not eat starchy foods. These beans may be grown easily in practically all sections of the country where corn is grown and give heavier yields than most other beans.

Soy beans have been so important for other purposes that until recently they have attracted little attention for food purposes in this country. The dried beans may be purchased now in a number of markets in various parts of the country, often under the name of togo beans, and should, with the increased acreage of the coming season, be more generally available. Soy-bean meal, a by-product of oil making, is a valuable food and no doubt will come into more general use with the increased production of soy beans.

Where dried soy beans are available they may be baked with or without pork, like navy and other beans. They should be soaked over night and should be cooked longer than other kinds of beans. Dried soy beans have been canned in considerable quantities during the past season, baked with pork, and are on sale in this form in numerous markets. Canned green soy beans, which may be compared with lima beans, also are on the market in some sections of the country. Both these canned products yield as high a proportion of energy, and a higher proportion of protein, than the canned beans with which they are most closely comparable, and so are more nourishing. Both are produced and handled usually at a lower cost than other beans and should therefore, be obtainable at much lower prices.

When Holland shades become somewhat stained at the bottom on account of open windows, cut off the hem, take the shade off the roller, turn it about, and stitch a new hem in the other end. In tacking the material back on to the roller, use very short tacks so as not to interfere with the shprings. —E. G. W.

Edible Ornamental Planting

By LULA G. PARKER

NOW-A-DAYS when old High Cost of Living is such a very real and terrible monster, the homemaker who sets out to beautify her yard with flowers and plants may well consider some of the sorts which have an edible fruit or stalk as well as mere beauty of flower or foliage to recommend them. Especially for the farm wife who feels that she has little time to care for anything which is not strictly useful, the following vegetables and fruits are recommended for planting in the yard, or in sight of the windows, where they will please the eye as well as the palate.

High bush cranberry, which may be found in the woods, is as beautiful in blossom as any shrub from the nurseryman. It grows from three to eight feet tall and has white blossoms something like the old-fashioned snowball bush. The flowers come in May and the red berries are beautiful in the autumn. The berries make delicious cranberry jelly or sauce. They are more seedy than the market cranberry but have the same flavor.

Elderberry bushes also come from the woods, are beautiful to set among other shrubbery, and the fruit is good to combine with more expensive berries in sauce or jelly.

The wild blackberry has a beautiful white blossom, and a hedge of it is far more ornamental than many more expensive things. The canes should be pruned severely after the berries are picked, in order to keep the hedge within bounds.

Plant asparagus roots at the back of a flower border. Cut the stalks after

the first year until peas come in the garden. Then let the weathery plumes grow up and furnish a background for the flowers.

Set a row of rhubarb roots along a fence and use them for a background for cannas, gladioli, or perennial flowers.

Where a quick growing vine is needed for shade or to hide objectionable objects, try the climbing cucumber or a pumpkin vine. Feed these with plenty of manure and the big leaves and yellow blossoms will surprise you.

In colonial times the tomato was called "love apple" and was grown in the flower garden. Try training a thrifty plant on a wire fence and have the fun of making your friends guess what it is. A lot of people won't know. Buckwheat and sunflowers are as good to look at as a lot of more expensive flowers and both will furnish chicken feed.

A grape vine makes a quick growing cover for a porch or trellis, and will furnish jelly galore. It is true that the grapes will not be quite so large and fine as if the vine were properly pruned each season, but a surprising amount of fruit will be secured.

Are you afraid that your friends will poke fun at such a utility garden? What if they do? It is a good thing in these solemn times to add to the gaiety of nations. But more people than anyone would think will not recognize these "common" things when they are put to a new use. They will think that you have discovered a new species of flowering plant.



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Markets.

GRAINS AND SEEDS.

May 1, 1917.

Wheat.—No. 2 red wheat reached the \$3 mark on the local exchange last Saturday. This establishes a new record price, but the situation is such that still higher values are likely to be recorded. September wheat is reflecting the price outlook for the new crop on a basis of \$1.98 per bushel. Crop conditions have shown some improvement since a week ago. Rains have materially aided winter wheat and reports are more encouraging from both high and bottom lands. Spring wheat farmers have also been able to crowd their work both in the northwestern states and in the provinces of Canada. Despite this improvement, the crop is going to be short, and large areas are already being plowed up for spring grains. Foreign demand is steady, while primary receipts are running just a little below those of 1916. One year ago No. 2 red wheat was quoted at \$1.23½ per bushel. Quotations for last week were:

	No. 2 Red.	No. 1 White.	July
Wednesday	2.80	2.77	2.21
Thursday	2.83	2.80	2.23
Friday	2.97	2.84	2.29
Saturday	3.00	2.97	2.29
Monday	3.00	2.97	2.29
Tuesday	2.85	2.82	2.20

Chicago.—May wheat \$2.57½; July \$2.13; Sept. \$1.82½.

Corn.—Corn values are ruling fully ten cents above those of a week ago, and the grain is in good demand at the new figures. Supplies are short and the United States visible supply shows a decrease of 2,333,000 bushels. While farmers are planning on increasing the acreage of corn, it is figured that the scarcity of wheat will overcome the depressing effect resulting from any extra supply of corn that may be grown this season. A year ago No. 3 corn was quoted at 76½c per bushel. Last week's Detroit quotations were:

	No. 3 Mixed.	No. 3 Yellow.
Wednesday	1.59½	1.61½
Thursday	1.60	1.62
Friday	1.62	1.64
Saturday	1.62	1.64
Monday	1.63	1.65
Tuesday	1.61	1.63

Chicago.—May corn \$1.45½; July \$1.39; Sept. \$1.32½.

Oats.—Oat values are about steady with those of a week ago. This crop is being sown generously, especially in the states that normally grow large crops. This with liberal stocks on hand has kept values from advancing with the quotations for wheat and corn. The visible supply decreased 833,000 bushels. Standard oats a year ago were quoted at 47c per bushel. Last week's Detroit quotations were:

	Standard.	No. 3 White.
Wednesday	78½	78
Thursday	79	78½
Friday	79	78½
Saturday	79	78½
Monday	78	77½
Tuesday	77	76½

Chicago.—May oats 67½c per bu; July 63½c; Sept. 55½c.

Rye.—Two cents more has been added to last week's advanced price, and No. 2 is now quoted at \$2.02 per bushel.

Beans.—Further advances are reported in this trade, and the local quotation is now at \$10 for cash and May shipment. Demand is firm and transactions are small, due to light stocks. At Chicago prices continue strong with Michigan pea beans, hand-picked, quoted at \$10.50@11; red kidney \$8.50 per bushel.

Peas.—Peas are firm at Chicago, with field varieties quoted at \$3@3.40 sacks included.

Seeds.—Prime red clover \$10.90; October \$11.50; alsike \$11.50; timothy \$3.50.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$14.90; seconds \$14.50; straight \$14.20; spring patent \$14.90; rye flour \$12 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$45; standard middlings \$45; fine middlings \$46; cracked corn \$64; coarse corn meal \$64; corn and oat chop \$57 per ton.

Hay.—In carlots at Detroit: No. 1 timothy \$15.50@16; standard timothy \$14.50@15; No. 2 timothy \$13.50@14; light mixed \$14.50@15; No. 1 mixed \$13.50@14; No. 1 clover \$13@13.50.

Pittsburg.—No. 1 timothy \$17.25@

17.75; No. 2 timothy \$15.75@16.75; No. 1 light mixed \$15.75@16.75; No. 1 clover, mixed \$16.50@17; No. 1 clover \$16.75@17.25.

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

DAIRY AND POULTRY PRODUCTS.

Butter.—The market is firm at 5½c decline from last week's prices. Quotations as follows: Creamery extras 37½c; do firsts 36½c; dairy 33c; packing stock 26c.

Eggs.—Prices declined 7c. Reaction to higher prices are usually expected after such a slump. The price, based on sales, is 37c, which is 7c lower than last week.

Chicago.—The trade is good, especially for the under grade. Supply and demand both good. Prices are 5c lower than last week. Extra creameries 38c; extra firsts 37½c; packing stock 29c per lb.

Poultry.—Market is steady with demand good at unchanged prices. No. 1 hens 24@25c; No. 2 do 22@23c; small do 22c; ducks 23@24c; geese 15@16c; turkeys 25@26c.

Chicago.—Prices are slightly lower for fowls and ducks. Receipts are moderate with market steady. Fowls 22c; roosters 17c; broilers 1½@1½ lbs \$8@9 per dozen; ducks 15@19c; geese 13@15c; turkeys 12@22c.

Eggs.—The demand is active and the market firm at a price 1½c lower than last week. Fresh firsts 33½c; current receipts 33½c.

Chicago.—This market is easier and prices 2½c lower. Receipts are good and many are going into coolers. Consumptive demand is fair. Fresh firsts 31@32c; ordinary firsts 30@31c; miscellaneous lots, cases included 30@31½c per dozen.

Dressed Calves.—Market at Detroit is steady. Fancy 17@17½c; No. 2, 14@15c per lb.

Chicago.—The trade is light, receipts being small; 50@60 lbs. weight 13½@14c; 60@80-lb. weight 14@15c; 90@110 lbs. 15½@17c; extra fancy 17½c.

FRUITS AND VEGETABLES.

Apples.—Market firm with prices unchanged. Baldwin \$5@6; Spy \$5@7; Steele's Red \$8 per bbl. At Chicago the demand is good for well graded stock, otherwise the demand is only fair. No. 1 stock sells at \$3.50@6.50 per bbl; No. 2 at \$2.25@2.75; orchard run \$3.25@3.50.

Potatoes.—The market is easier as consumers prefer new potatoes at the present prices. Quotations: In carlots at Detroit in sacks, Michigan \$2.90@3 per bushel. At Chicago no Michigan stock was reported. Market is slightly lower and easier. Prices range from \$2.25@2.75 per bushel. At Greenville potatoes are selling at \$2.95 per bushel.

WOOL.

Considerable activity attended operations in the wool market last week, with prices firm to higher. The old clip is being rather closely picked up, especially since manufacturers have taken on big orders from the federal government. Fleeces are being held firmly by producers, they believing that still higher price levels will obtain later on. At Boston last week 250,000 lbs. of fleeces were sold at prices ranging from 44@59c.

GRAND RAPIDS.

The egg market opens this week at unchanged prices. Creamery butter dropped off to 37c, which is 7c lower than last week, but dairy butter remains practically unchanged. Potatoes have not been in so strong demand of late and the price here is around \$2.80. On the contrary beans are higher, with \$10, or very nearly that figure, as the basis. Wheat is close to \$3 and other grain continues to climb.

DETROIT EASTERN MARKET.

The market was small on Tuesday morning of this week with former prices holding firm. Apples sold at \$1@2.50; lettuce 90c; rhubarb 40c per bunch; eggs 38c; no hay in sight.

LIVE STOCK MARKETS.

April 30, 1917.

Buffalo.

Receipts here today as follows: Cattle 150 cars; hogs 60 d. d.; sheep 40 d. d.; calves 2000 head.

With 150 cars of cattle here today the trade on the shipping steers was absolutely rotten, the bulk of them 25@50c lower. The cow and heifer stuff was very scarce and most of them sold about steady. There were very few stockers here and a good demand. The bull trade was slow and a little easier.

Receipts of hogs here today were

about 60 double decks. Liberal runs all over the west and lower prices forced our market down 10@15c from Saturday's best time, while pigs and lights were extremely dull and in most cases a strong quarter lower. A few selected loads sold at \$16.25, with the bulk around \$16; pigs and lights, as to weight and quality, from \$13.50@14; roughs \$14@14.25; stags \$12@13.

With a moderate run of lambs today our market opened up active and prices steady with the close of last week. About all sold and we look for steady prices last of the week, depending chiefly on receipts.

We quote: Clipped lambs \$14@14.25; clipped heavy lambs \$12.25@12.50; cull to common \$10@12.75; yearlings \$12@12.50; clipped wethers \$11.25@11.50; clipped ewes \$10@11; clipped bucks \$8@10; best calves \$12.50@12.75; common and light \$9@11; heavy \$8.50@11; grassers \$6@6.50.

Chicago.

April 30, 1917.

Cattle. Hogs. Sheep.
Receipts today..20,000 51,000 12,000
Same day 1916..14,318 49,997 7,045
Last week.....41,080 139,589 66,296
Same wk 1916..43,333 136,111 59,993

The week opens today with a large cattle supply for these times, but the prices are called steady to 10c lower, sales of desirable lots being at unchanged figures. Hogs are 10@15c lower, with a large supply and sales at \$14.50@15.90. Hogs received last week averaged 213 lbs. The lamb and sheep market is fully 50@75c higher, with prime clipped lambs selling at \$14 and choice woolled lambs at \$17.35 and some prime woolled lots held at still higher figures.

Cattle receipts last week underwent such a large falling off in numbers, following the sharp declines in prices of the preceding week, that sellers were in a position to demand higher prices for most kinds. There was an active general demand, with shippers doing their share in buying, and the offerings were readily taken, with the bulk of the steers going at \$10@12.50. The choice to extra class of long-fed heavy steers had quick sales at \$12.75@13.40, with sales of a good class of steers at \$12@12.70, while a medium class of light-weight short-feds sold at \$11@11.95. Ordinary to fair light-weight killers sold for \$10 and upward, and sales of inferior little steers were made in rather limited numbers at \$8.50 and over. Yearlings of a desirable kind found ready buyers at \$11.25@12.65, with sales made all the way down to \$9@10 for the commoner offerings of these steers. There was a lively market for butcher stuff, with cows taken at \$7.90@11.25 and heifers at \$7@11.75, while cutters sold freely at \$7.20@7.85, canners bringing \$5.85@7.15 and bulls \$6.75@10.25. Calves were much lower in prices than during the recent high time, with sales made all the way from \$6@12.25 per 100 lbs. for coarse heavy to prime light vealers. A moderate business was transacted in stockers and feeders, with the former going at \$7.50@9.65 and the latter at \$8.75@10.25. Sales took place of feeding cows at \$7@7.75, feeding heifers at \$7.65@8.50 and stock and feeding bulls at \$7@7.75. Milkers and springers were in fair demand at \$65@125 per head, the inquiry being mostly confined to good cows. Illinois and Nebraska prime heavy beef steers sold at \$13.40 for consignments averaging from 1468 to 1541 lbs., and steers weighing over 1300 lbs., comprised but a small share of the offerings. A big share of the steers received weighed from 1050 to 1200 lbs., being short-fed. Steers of a middling kind were largely 15@25c higher. Prime yearlings would have brought \$13, had they been offered.

Hogs were on the down grade in prices the larger part of last week, following the previous boom, with rallies at times on improved buying orders, although eastern shippers were usually only moderate purchasers, taking mainly the better class of heavy and light hogs. Heavy hogs continued the best sellers, the demand in the meat trade running largely on weighty hams and loins of fair weight. Light weight hogs, which make cuts too small for the popular taste, had the least action. Receipts of hogs have been increasing, and on the opening day of last week 45,491 head arrived in the market. Much of the time lack of aggressive buying by the local packers resulted in weakness of prices, but low priced hogs look a long way off. At this time in 1911 hogs were selling at \$5.60@6.15, while at the same time in 1904 they brought \$4.25@4.87½. Larger receipts of hogs and a poor shipping demand combined to put prices down some, but there was a late rally that landed prime hogs at \$16.05. On Saturday sales were made of heavy packing hogs at \$15.35@15.85; light bacon hogs at \$14.50@15.60; selected light

shipping lots at \$15.65@15.80; light singeing hogs, averaging from 170 to 200 lbs., at \$15.80@15.95; heavy shipping hogs at \$15.85@16 and pigs at \$10.50@13.85, according to weight and quality, the highest-priced pigs weighing 130 to 135 lbs.

There appears to be no limit to the advances in prices for lambs, yearlings and sheep, and several new high records were witnessed during the last week, quotations soaring far higher than were ever seen before in the history of the trade. The demand for choice live muttons continued in excess of the offerings. The week's receipts were materially reduced, and advances took place of 40@90c in lambs, prime lots rising the most. Sheep and yearlings advanced 25@50c. Lambs closed at \$13.50@16.90; fat heavy lambs at \$15.25@16.25; feeding and shearing lambs at \$14.50@15.50; yearlings at \$13.25@15; wethers at \$12.25@13.50; ewes at \$8.50@13.50; bucks at \$10@12; spring lambs brought \$14@17.50, and clipped lots sold as follows: Lambs \$12.25@13.50; yearlings \$11@12.25; wethers \$10.50@11.90; ewes \$6@11.50.

Horses were in unusually meagre supply last week, and there were too few desirable animals to meet the demand, prices ruling firm. Army horses were salable at \$120 for riders and \$150@160 for gunners, and the number-out horses rejected by army inspectors sold at low figures. Drafters were quoted at \$185@285, farm chunks at \$60@200 and expressers at \$75@210.

LIVE STOCK NEWS.

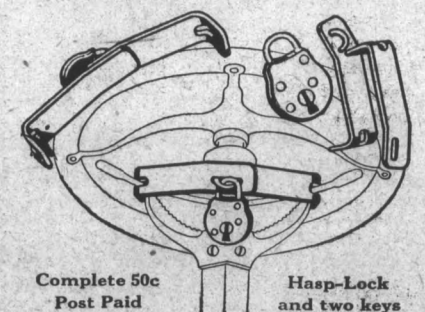
Provisions are selling at far higher prices than a year ago, and so are the fresh pork products, but this appears to have no particular effect in checking their consumption. The foreign demand for lard and bacon is well maintained, and exports from Atlantic ports are as large as a year ago, in spite of the kaiser's submarine warfare.

A short time ago an Illinois stockman marketed in Chicago a carload of prime heavy hogs which netted the nice sum of \$3,620. Hogs make big money at ruling high prices, the top for the year to date standing at \$16.50 per 100 lbs. There have been big breaks in prices since then, but prices are still far above those paid in other years. As is the case with cattle, the farmers are anxious to get their hogs to market without any delay, as they are far more impressed with the dearth of corn than with the high prices paid for matured hogs. Hogs are still marketed mostly short in weight compared with other years, although there are now weekly gains in weight. Recent receipts in the Chicago stock yards averaged 217 lbs., comparing with 212 lbs. a week earlier, 220 lbs. one year ago, 233 lbs. two years ago, 232 lbs. three years ago, and 245 lbs. four years ago. There is wide variation in the quality of the hogs, as well as in their weight, and the extreme spread of prices amounts to as much as \$1.60 per 100 lbs., with the bulk of the sales within a range of 45c. The best prices are paid for prime heavy shipping barrows such as are especially wanted by eastern shippers, with the best light shipping hogs selling about 20c below top figures. Common light bacon hogs are the lowest sellers, with pigs going at an extremely large discount, this being true even of pigs weighing up to 135 lbs. The demand for hogs to ship to eastern packing points, which was extremely large a number of weeks ago, has fallen off to extremely small proportions, and this renders competition between buyers much less keen than it was.

The Canadian government has begun a new system to help stock owners, the plan being to furnish four homesteaders with \$2,000 worth of live stock at terms of five per cent interest, with five years in which to pay.

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THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market.
May 3, 1917.

Cattle.

Receipts 2332. There was more good cattle than usual on the local market this week and this class of steers was 25¢ to 50¢ lower than at the same period a week ago. Cows, bulls and common butchers' stuff held about steady but slow. There was a more active demand from the country for stockers and feeders. Milch cows that are good are in active demand but common grades have to be sold for canner prices. Mr. Harry Conley, of Marshall, had the best lot of cattle on the market this week that was ever sold here. They averaged 1048 lbs. and were sold by Bishop, Bullen & Holmes to the Newton P. Co. for \$11.75 a hundred. President Thomas E. Newton, of the company, bought them himself and they will be slaughtered for their city trade. The case was dull at the decline. Best heavy steers \$10.50@11.75; best heavy weight butchers' steers \$9.50@10; mixed steers and heifers \$8.50@9.25; handy light butchers' \$8@8.50; light butchers' \$8@8.50; best cows \$8.75@9.50; butcher cows \$8@8.50; common cows \$6.75@7.25; canners \$6@6.75; best heavy bulls \$9@9.50; bologna bulls \$8@8.50; stock bulls \$7@8; milkers and springers \$5@9.00.

Sandel, S. B. & G. sold Mich. B. Co. 1 cow wgh 1140 at \$7.50, 3 do av 1207 at \$8.75, 2 do av 1060 at \$8.75, 2 do av 1350 at \$8.50, 3 do av 980 at \$7.50, 1 bull wgh 1430 at \$8.85, 20 butchers' av 879 at \$9.50, 2 heifers av 680 at \$8.50; to Newton B. Co. 15 steers av 1116 at \$10.60, 2 cows av 890 at \$6.50, 1 do wgh 880 at \$6.25; to Bresnahan 2 stockers av 650 at \$8, 4 cows av 707 at \$7, 2 do av 1060 at \$8.25, 3 do av 990 at \$7.25; to Mason B. Co. 1 bull wgh 1610 at \$8.50, 6 butchers' av 703 at \$8.25, 2 do av 765 at \$8.50; to Breitenbeck 26 do av 897 at \$9.60; to Mich. B. Co. 1 cow wgh 1230 at \$8.25, 15 steers av 827 at \$9.40, 1 bull wgh 1520 at \$9.25; to Standard 6 stockers av 530 at \$7.50, 4 do av 500 at \$8; to Bray 3 cows av 857 at \$6.75; to Goose 3 butchers' av 773 at \$8; to Thompson 12 do av 1022 at \$9.50, 13 do av 1061 at \$9.85, 8 steers av 970 at \$9.25, 3 cows av 907 at \$8, 1 bull wgh 1640 at \$9, 1 do wgh 1500 at \$8.75; to Hammond, S. & Co. 26 steers av 975 at \$10.25; to Mindick Co. 7 do av 1262 at \$10.85; to Sullivan P. Co. 3 cows av 1033 at \$8.60, 3 steers av 1187 at \$10.75, 8 cows av 990 at \$8; to Mason B. Co. 15 steers av 770 at \$9.85; to Burden 6 steers av 571 at \$8.10; to Bray 8 cows av 830 at \$6.75.

Calves.

Receipts 991. The veal calf trade was active from start to finish at last week's prices. Best grades \$12.25@12.50; culls \$9@11; heavy \$7@8.50; the close was steady.

Sandel, S. B. & G. sold Losier 3 av 145 at \$12.50, 5 av 125 at \$12.50, 4 av 103 at \$10; to Richmond P. Co. 5 av 118 at \$11.25; to Nagle P. Co. 5 av 125 at \$12.25.

Sheep and Lambs.

Receipts 1582. The sheep and lamb trade was strong 50¢ higher than last week and active at the advance. One bunch of good lambs brought \$13.75; bulk of sales for good were at \$13.50; the runs are very small at present and no spring lambs are coming at all. Prices averaged as follows: Best lambs \$13.50; fair lambs \$12.50@12.75; light to common lambs \$9.50@11; fair to good sheep \$9.50@10; culls and common \$6@8.

Bishop, B. & H. sold Mich. B. Co. 232 lambs av 75 at \$13.50, 15 do av 45 at \$13.50; to Newton B. Co. 25 do av 75 at \$13.50; to Thompson 105 do av 70 at \$13.50; to Sullivan P. Co. 107 do av 75 at \$13.50, 13 do av 50 at \$11; to Parker, W. & Co. 68 do av 65 at \$13.50, 16 do av 50 at \$11, 66 do av 83 at \$13.40; to Sullivan P. Co. 145 do av 80 at \$12.50.

Erwin, S. & J. sold Hammond, S. & Co. 100 lambs av 81 at \$13.50, 19 do av 50 at \$11; to Sullivan P. Co. 103 do av 73 at \$13.50, 3 do av 83 at \$13.50, 7 sheep av 105 at \$10, 7 do av 90 at \$7.50; to Nagle P. Co. 14 lambs av 75 at \$13.50; to Thompson 43 do av 65 at \$13; to Standard L. S. Co. 9 do av 50 at \$11, 3 sheep av 90 at \$8.

Hogs. Receipts 8609. The hog trade has been very dull all the week on account of the hog killers at two of the leading packing points being out on strike. Packers expect to have their troubles adjusted today or tomorrow and are killing a few today. Prices averaged as follows: Extra good heavies \$15.50; mixed \$15@15.40; pigs \$12@12.75.

Veterinary.

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

Partial Dislocation of Stifle.—Have a four-year-old mare which has occasionally for the past two years been troubled with dislocation of the stifle joint. C. S., Willis, Mich.—Clip hair off stifle and apply one part powdered cantharides, one part red iodine mercury and eight parts lard every two weeks.

Abnormal Appetite.—I have a ten-year-old mare that has an abnormal appetite, dating back to the middle of last winter. This same mare was punctured with fork, wounding hind leg. We also have two colts that have a great appetite for food, but are not thriving. C. W. B., Pinckney, Mich.—I am inclined to believe that all three animals are troubled more or less with worms; therefore, you had better mix one part powdered sulphate iron, one part salt, one part ground nux vomica, one part ground fenugreek, four parts ground gentian; give the mare a tablespoonful at a dose in feed three times a day, and the colts two teaspoonfuls at a dose in feed night and morning.

Chronic Grease Heel.—I would like to know what to do for a chronic case of scratches on a horse. One horse has had the scratches for two years, usually on hind legs. I can usually heal the sores, but they soon break out again. I have tried out all of the dope that our local Vet. prescribed and he has now given up the case. Have used all preparatory dope I have ever heard of, with poor success. Applying zinc ointment and giving Fowler's solution does more good than anything else. I also have another horse that has sore heels and is now in bad condition. For the past year and a half I have fed oats that slightly heated in the stack, but am told by local Vet. that this feed could do little harm. I am tired of experimenting and would like to know if there is a remedy. W. B. L., Sheridan, Mich.—A chronic case of this kind is incurable. The treatment can only be palliative. Paint sores with equal parts of tincture benzoin, "compound," and tincture iodine every two days and ten days later apply one part tannic acid and two or three parts glycerine, brushing it on two or three times a week. Give 1 dr. potassium iodide at a dose in either feed or drinking water twice a day.

Barren Sow.—I have a sow that does not come in heat, she is a natural hog and has already had two litters. I have fed her parched corn and oats several times. C. B. H., Bangor, Mich.—Give her 10 grs. of ground nux vomica, 40 grs. of ground capsicum and 60 grs. of ground ginger at a dose in feed two or three times a day. She may suffer from a diseased condition of the ovaries and will never breed.

Enlarged Knee.—We have a two-year-old colt that was kicked some time ago, injuring knee, causing a wound which healed, but a bunch remains. We have treated it with hot water and commercial remedies without satisfactory results. Please let us know if colt can be cured. C. N., Wallace, Mich.—Apply equal parts of tincture iodine and spirits of camphor every day or two.

Heal sores with Dr. LeGear's Antiseptic Healing Powder

It forms a powerful antiseptic protection against insects and infections and quickly heals the cut.

Dr. LeGear's Antiseptic Healing Powder is my own prescription, the genuine original healing powder used during my whole 25 years Veterinary practice. Its the handiest, most effective way to heal all sores on stock.

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Dr. L. D. LeGear, V.S.
(in surgeon's robe)
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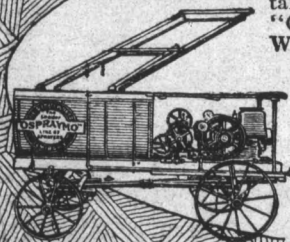
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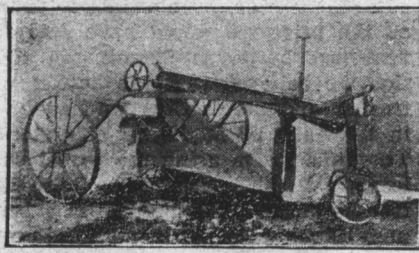


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The BANTING MACHINE COMPANY
114 Superior St., TOLEDO, OHIO

EGG'S

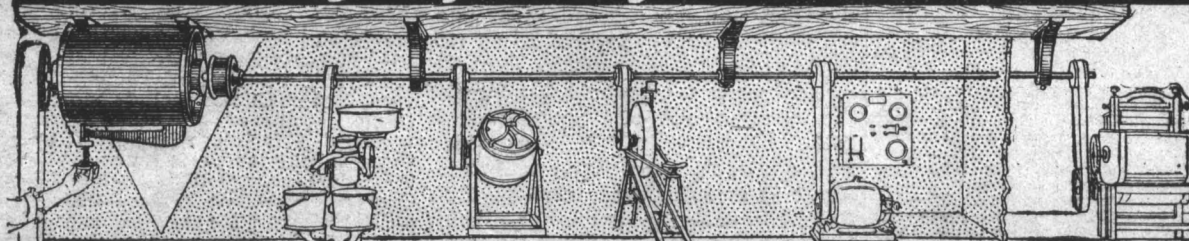
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—the speed governor of a thousand different speeds. Every turn of the hand wheel gives a different speed and each speed is absolutely steady and uniform.

Install it yourself with a screw driver. No figuring pulleys, no chance of installing it wrong for it runs in either direction, attached to the floor, the wall or the ceiling. It's as cheap as an ordinary line-shaft with the governor pulley thrown in.

Go To Your Dealer and see it. He'll demonstrate it and he'll show you what a profit-producer it will be for you. Get ALL THE FACTS. THEY ARE WORTH KNOWING.

THE Cedar Rapids Speed Governing Line Shaft is as cheap as the average friction-clutch pulley, yet it controls the speed of several pulleys at once without stopping your engine. The engine operates the governor—the governor controls the line-shaft.

The governor absorbs all jerky vibration. The power transmitted is steady and smooth. Runs all machinery at uniform speed. If you own an engine you need the Cedar Rapids Speed Governing Line-Shaft. One man saved enough labor fanning 50 bushels of clover-seed to more than pay for his governor outfit.

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Controls Them All

Cream separators require starting at slow speed. The Speed Governing Line Shaft makes any separator run smoothly.

Butter Churning necessitates slowing down the machinery to gather the butter. It regulates this. Your Grindstone can best be run from a pulley on the Speed Governing Line Shaft.

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\$50 in Cash Prizes to be awarded July 1st. Present owners and prospective buyers should write for full particulars.

88 Bu. Oats Per Acre

Mr. A. Taylor writes: "I had 315 acres in oats that averaged 88 bushels an acre, 30 acres in wheat that averaged 50 bushels an acre, 20 acres in barley that averaged 50 bushels an acre." This is only one of thousands of good reports from Western Canada. Yet nowhere can you buy good farm land at such low cost as along the Canadian Northern Ry.

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If you have not the capital to buy land you can still get one of the recently surveyed 160 acre fertile Homesteads along the Canadian Northern Railway, the newest transcontinental railroad, 'The Road to Opportunity.'

Free Book Be sure to write today for a free copy of the "Home-Seekers' and Settlers' Guide," full of complete and authentic information. A fortune is waiting for you.

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Great Northern Railway has just issued two beautifully illustrated descriptive bulletins. One describes opportunities in irrigated lands in West Okanogan Valley at the foot of the beautiful Cascade Mountains—fruit-growing and diversified farming paradise. Three crops of alfalfa first year after planting. One-third of entire new irrigated area settled in past year.

Investigate the Profits Made in Wenatchee North Country. This year's fruit crops amazing. Alfalfa—corn—a great stock-raising country. Small tracts mean big profits. You can buy on easy terms. Be sure to read Wenatchee North Country booklet. Either or both books about Washington's garden spots mailed on request. Write me personally.

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Please Mention The Michigan Farmer When
Writing to Advertisers

Selling Butter by Brand

A FEW years ago the average buyer of butter entered the grocery store and ordered the amount required, with the idea that all butter was alike and no questions were asked. The clerk scooped out some ragged chunks from a crock and slapped them on a wooden dish with a paddle. He sold the wooden tray to the customer at butter prices very frequently, but that phase of the deal was usually expected and the consumer found no fault.

Now many buyers of butter will enter a store and request a pound package of butter of the brand which they have tried and found satisfactory. If they enjoy a certain brand they will accept a substitute with reluctance, and for this reason the development of a good business in butter under a certain brand should be a profit winner for the business farmer who can work up a trade in such a brand. Butter can easily be put up on the farm in the oblong pound packages which are now used by many creamery companies and a few farmers. One farmer in Michigan is making a success of his butter business by shipping the pound packages by parcel post. The packages are labelled with the name of the farm as the brand name for the butter and find a ready sale at a price which returns a good profit for the extra work.

The parcel post should be used more generally for the shipment of butter, and this can be carried on very profitably in the first zone. While working at one time in Detroit we received butter by parcel post frequently, and it was greatly appreciated. The producer receives a couple of cents more per pound profit than would have been received on the local market and we saved about two or three cents per pound on the price we would have paid for first-class butter in Detroit. In addition we believed that the butter was fresher and better than we had been in the habit of buying at city stores. The difficulty in using the parcel post is to get the consumer to take the trouble of handling the deal in a business like manner. It is quite the popular thing to worry about the "fearful" lack of business ability among farmers but it is nothing compared with the careless manner in which some city buyers will treat their obligations while dealing with the farmer. Not all city buyers are that way, but there is a fine chance for the parcel post to make good even after the past two years of disappointment.

The value of selling butter by brand depends upon producing butter of excellent quality. If a brand name signified poor quality it would be much worse than no brand at all. In cities possessing a municipal market there is a good opportunity to dispose of first-class butter under a brand. City buyers liking good butter will go to the trouble of carrying home two or three pounds when they would hesitate at the inconvenience of lugging home a basket of vegetables. At the present butter prices the product can be produced at a profit, even with the high cost of feed.

The Michigan Legislature in 1915 passed what is known as the State Brand Butter Law and this law is fully explained in Bulletin No. 2 issued by the State Dairy and Food Department. The law is a good one and should have a wholesome effect on the production of good butter in Michigan. The law became effective on January 1, 1916, and it is reported that seven creameries have been licensed to use the brand and twenty or more have filed applications for the privilege. The value of using a brand on butter that will signify quality to the buyer, is evident to every creamery man and farmer. In the city grocery stores most of the butter sold in the pound packages seems to

be labeled with private brands or trade-marks. It is evident from some observation that consumers like to buy butter in that manner and while the selling cost is slightly increased by such a method the buyer seems willing to pay the bill.

When the farmer expends his energy in producing good butter and then delivers it to the customer with a "pretty picture" on the cover, the picture may not make the butter better, but the consumer knows what he buys. It is just like the silver dollar. It does not contain a dollar's worth of silver but when stamped with the name of a country with a record of manufacturing good money, we know that it is worth a dollar. If the creamery can make more money by handling butter of quality under a brand name there is no reason why the farmer with a small butter trade cannot make his business more profitable by adopting the same method.

R. G. KIRBY.

Wheat Standards

UNDER authority of the grain standard act the Secretary of Agriculture has fixed and established official standards for wheat. The classes named below are effective July 1 of this year.

The use of these standards after they become effective is required for wheat shipped from any point in the United States in interstate or foreign commerce and sold, offered for sale, or consigned for sale by grade. The act, however, permits the interstate or foreign shipment of grain sold by sample or by type, or under any description which is not false or misleading, and does not include any of the terms of the official grain standards.

The standards for wheat promulgated divide wheat into the following classes and subclasses:

Class I. Hard Red Spring.—This class shall include all varieties of hard red spring wheat, but shall not include more than ten per centum of other wheat or wheats. This class is divided into four subclasses, as follows: Dark Northern Spring, Northern Spring, Red Spring, Red Spring Humpback.

Class II. Common and Red Durum. This class shall include all varieties of durum wheat, but shall not include more than ten per centum of other wheat or wheats. This class is divided into three subclasses, as follows: Amber Durum, Durum, Red Durum.

Class III. Hard Red Winter.—This class shall include all varieties of hard red winter wheat, but shall not include more than ten per centum of other wheat or wheats. This class is divided into three subclasses, as follows: Dark Hard Winter, Hard Winter, Yellow Hard Winter.

Class IV. Soft Red Winter.—This class shall include all varieties of soft red winter wheat, also red club and red hybrid wheats of the Pacific Northwest, but shall not include more than ten per centum of other wheat or wheats. This class is divided into three subclasses, as follows: Red Winter, Red Walla, Soft Red.

Class V. Common White.—This class shall include all varieties, except Sonora, of common white wheat, whether winter or spring grown, but shall not include more than ten per centum of other wheat or wheats. This class is divided into two subclasses as follows: Hard White, Soft White.

Class VI. White Club. This class shall include all varieties and hybrids of white club wheat, and the common white wheat known as Sonora, but shall not include more than ten per centum of other wheat or wheats.

Each subclass of wheat is divided into six grades, described as No. 1. No. 2, No. 3, No. 4, No. 5, and Sample Grade.

All standards are fixed on a dockage basis. This contemplates that in the grading of the wheat all weed seeds, sand, and the like will be removed by proper sieves and that the residue of wheat will be graded according to its quality and condition.

Warranted to Give Satisfaction.

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A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeney, Capped Hock,
Strained Tendons, Founder, Wind
Puffs, and all lameness from Spavin,
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As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is
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increase your profits, comply with the sani-
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Smooth,
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Does not winterkill like other varieties, outyields them and is
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Alfalfa' with seed sample, free.

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Grange.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

STATE GRANGE OFFICERS.

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Lecturer—Dora H. Stockman, Lansing.
Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.

BUILDING THE HOME BY CO-OPERATION.

(Continued from last week.)

Paper read at Kent County Grange by Mrs. Clayton Johnson, of Bowne Grange.

But we must always remember the danger of overdoing the matter and we are overdoing it whenever we make ourselves mere machines that work and eat and sleep. The finest mind becomes dulled under these circumstances, and the keenest brain will lose its power to think. We do not expect a grain harvester to cut the corn for the silo, nor the cultivator to break the heavy sod. And yet we use less judgment when we train the human machine so rigidly to one line of action and then expect it to turn easily to another.

If people are to think broadly and kindly as men and women they must begin to think broadly and kindly very early in life. And no place has been discovered yet where right thinking can be taught as successfully as in a home. That brings the two points of our circle together. We cannot give our children what we have not yet learned for ourselves. At first this looks like a hopeless undertaking, a vicious circle. But right here we catch a glimpse of infinite wisdom, in setting the adult mind to learning and doing for the sake of the child. Parents instinctively seek to give their children what their own childhood lacked. Some people carry bitter memories that time can never change, because of a dwarfed and starved childhood. They determine that no child in their home shall ever suffer as they suffered. But unless they do some very careful thinking they will send their children out in the world with equally bitter memories, though of another sort.

The perfect home with perfect people in it who never made a mistake, has never existed. But there can be kindly spirit and constant study and effort to be fair and right and unselfish, which will so stamp itself upon the mind of the child that whatever mistakes are made will not give the pain of selfish motive. This unselfish spirit reacts on everything in and about the house and makes the home complete. The spirit of fairness puts into every room some small comfort, some touch of beauty.

Things that merely give pleasure become worth while and take their place among the necessities, not to any extreme but within justice. Even the outside grounds, the yard, the fence and the trees take on an air of protection and interest. There are breaks in the work-day program, holidays and pleasure trips and plans that reach out far beyond the fleeting dollars to the things of life that endure.

All these things and many more of this kind go in a family so nurtured by the right co-operation that it is alive and growing, and evidence of such growth accumulates, just as nature clothes every bare spot with life and beauty. This is healthful co-operation. The sunshine and food and exercise which makes the very best crop of boys and girls that can be grown. There is a contrary atmosphere too, and you will not miss one guess in a hundred as to its quality, from what you see of the place where the crop is grown. Believe me, friends, we have it in our power to make of our children what we will. The opportunity is not next year or when the farm is paid for, but right here and now. No school or college can do for them what you can do for them by the co-operation you have in your home.

Farmers' Clubs

CLUB DISCUSSIONS.

Discuss Pertinent Agricultural Topics.—Forty-five members and visitors attended the last all-day meeting of the Washington Center Farmers' Club at the home of Mr. and Mrs. Henry English on April 12. The meeting was called to order by President F. L. Cook. After the regular order of business, the question, "What was your best paying crop in 1916?" was answered by some by giving hay, barley and lambs. A portion of the farm loan law was then read by Mrs. O. J. Campbell and discussed by Mr. Bowen, who thought the farmers in the south and southwest who must pay ten per cent interest will consider the law of more benefit than those who do not have to pay so high a rate of interest. Dinner was then announced and immediately the meeting adjourned. After enjoying a very fine dinner the meeting was again called to order and was entertained by violin and piano music. Roll call was answered by naming a noted statesman of today. Question, "Are we, as farmers' justified in fixing prices of our products?" was led by F. L. Cook. The farmers are justified in fixing prices the same as any other business concern, but we need co-operation and organization to do it. "What breed of cattle is best for this community?" was the next question, led by Mr. English, who favored the Durham as they bring better prices as beef when they are ready to turn over to the market. Others favored the Holstein for their milking qualities. Mildred English then entertained with a piano solo. Lewis Franklin gave a recitation, and Mr. English also recited. The time was so well taken up and the hour was growing so late, the question box was omitted. The Club adjourned to meet at Elmdale Stock Farm, with Mr. and Mrs. Frank Hunden, the second Thursday in May.—Cor. Sec.

New Club Organized.—A very profitable and interesting meeting was held Monday evening at the school house in District No. 8 of Brockway township, St. Clair county. This was arranged by the teacher, Miss Willey, for the purpose of organizing a boys' and girls' bean club, and was attended by over thirty parents and young people of the district. While it was called primarily to organize a bean club, the older people did not propose to be left behind, and so organized a thriving Farmers' Club of eighteen members. Miss Willey called the meeting to order and the program was opened by singing several patriotic songs. The St. Clair County Agricultural Agent then explained the objects and benefits to be derived from club work, and assisted the boys in organizing a promising bean club. The following are the officers and members, and each will grow an acre of beans, keeping a record of all expenses, labor and proceeds from the sale of the crop: President, Herbert Zinzo; vice-president, George Connell; secretary, Roy Carless; treasurer, Lester Zinzo. Elmer Carless, Hugo Carless, William Meharg, Verna Zinzo, Thomas Carless and Craig Adams will serve as the advisory board, Miss Zinzo acting as local leader. The boys decided to name their organization "The Buds of Promise Bean Club." This not only serves as a name for the club, but shows also that the young men are taking up the work seriously and with the idea of making the best possible preparation for full and useful lives. Matters concerning a Farmers' Club were then taken up by the adult people and one of the most promising organizations of this kind in the county was formed, and the following officers were elected: Wallace Adams, president; Thomas Carless, vice-president; Verna Zinzo, secretary; Nicholas Meharg, treasurer. Program committee, Craig Adams, Mrs. Thomas Carless and Mrs. William Newell. Entertainment committee, Mrs. Nell Connell, John Cavanagh and Bert Holden. Menu committee, Mrs. N. Meharg, Mrs. Chas. Zinzo and Mrs. David Rose. Other families represented in the membership are those of John Edgerton, Horace Hall, Walter Brown and Joseph Cavanagh. The first meeting will be held at the home of Mr. and Mrs. Thomas Carless on May 17, at which time a permanent date for the sessions each month will be selected and a name for the Club adopted. This makes a total of ten of these splendid organizations wholly or partly in St. Clair county and they are proving to be one of the most vital factors in developing a more profitable agriculture and a better and richer rural life.

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Carefully Selected -- True to Name -- High Germination

Dent Corn		Fodder Corn	
Reid's Yellow Dent	\$2.75 per bu.	Red Cob Ensilage	\$2.00 per bu.
King of the Earliest	2.75 " "	Leaming Fodder	2.00 " "
White Cap Yellow Dent	2.75 " "	Evergreen Sweet Fodder	5.50 " "
Pride of the North	2.75 " "	Stowell's Evergreen	10.00 " "
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Strawberry Dent	2.75 " "	Longfellow Flint	3.50 " "
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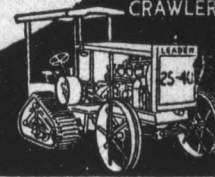
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Leaders in their line for the past five years. All 'round tractors for any size farm. Use in all soil and weather conditions. Most efficient, in the field or at the belt. The tractor with the big pull where the pull belongs—at the draw bar. A big profit producer, but a small fuel consumer. Three sizes—12-18, 15-25, 25-40.

12-18 3 Plow Tractor over 2500 lbs. pulling power at the draw bar. The ideal tractor for the moderate size farm. Will turn in twelve ft. circle. A wonder at the price.

25-40 Leader Crawler, over 4,000 lbs. pulling power at the draw bar. Has the famous Leader Crawler wheel. Operates where no other tractor could go under similar conditions.

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\$22.50 and your FORD Makes 8 H.P. Gas Engine

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Used and praised by farmers from Maine to Calif. Positive proven success and sold with 5-day free trial, money back guarantee. Order direct from this ad or send now for big free circular. Address E. F. ELMERS CO., 131 Main Street, Parkersburg, Iowa.

County Agents Wanted

CHOICE BRED GILTS

Bred Prince 56002, sired by Wildwood Prince 1110 lb. 3 yr. Grand Champion at Iowa, sold for \$750. Ship C. O. D. — 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. and Chester White Swine Strictly Big Type with Quality. Gilts bred for Spring farrow, all sold. Five fine Sept. gilts bred for July farrow. Have a few good fall pigs left, either sex. We are also booking orders for early Spring pigs. Can furnish in pairs not akin. Newman's Stock Farm, Marlette, Mich. R. L.

O. I. C. SWINE: Bred gilts are all sold. Order a pair or a trio not akin to breed in the spring. Rush in your order before they are sold. Satisfaction guaranteed. A. J. GORDEN, R. No. 3, Dorris, Mich.

O. I. C's. Bred sows all sold. Have a few good last Sept. born and this spring pigs. Good growthy stock. 1/4 mile west of depot. Otto B. Schnitze, Nashville, Mich.

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. Buy the best and breed them better. Fall Gilts and Boars. CLOVER LEAF STOCK FARM, R. L. Monroe, Mich.

O. I. C. bred sows and gilts all sold. A few long bodied heavy boned fall boars to offer. G. P. ANDREWS, Dansville, Michigan

O. I. C. SWINE. Nothing to offer at present. H. W. MANN, Dansville, Michigan.

Large Type P. C. Gilts bred and April farrow all sold. A few good ones to be bred for June farrow. Also some good fall pigs either sex. W. E. LIVINGSTON, FARM, MICH.

L. S. P. C. yearly Gilts for August farrow. A few long bodied heavy boned fall boars to offer. 2 nice fall boars by Smooth Jumbo H. O. Swartz, Schoolcraft, Mich.

Large Type Poland China Bred Sow Sale, Feb. 20, '17 Write for catalog. W. J. Hagelshaw, Augusta, Mich.

Large Cooled Poland China, 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 P. 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, sired by Jumbo Wood, 800 lb. hog. A. A. WOOD & SON, Saline, Michigan.

Hampshire Swine. Nothing for sale but fall boars and gilts. Write for prices. FLOYD MYERS, R. No. 9, Decatur, Ind.

Big Type Poland China fall boars. Am booking orders for spring pigs, satisfaction guaranteed. G. W. Holton, R. H. Kalamazoo, Mich.

HAMPSHIRE SWINE My herd contains the blood lines of many of the most noted champions of the breed. My herd boar, Claytons Lad, 18'33 is a brother of Look Out Lad, who was grand Champion at the National Swine Show. I am booking orders for spring pigs, to be shipped about May 1st. Write me for prices. George E. Starr, Grass Lake, Mich.

HORSES

Percheron Stallions 25 Must Be Sold

Also 2 Imported Clydesdale Stallions. Spring Sale Prices are now on

Palmer Bros.,

P. O. Belding, Ionia Co., Belding, Mich.

AT HALF PRICE

Registered Percherons. Big black stud colt coming 3. sound and sure. Big boned rugged filly 2 past, bred by M. A. C. Also pair of mares 4 and 5 years old. Come and see them. JNO. C. BUTLER, Portland, Mich. Bell Phone.

REGISTERED PERCHERON Mares and Stallions priced to sell. Inspection invited. L. C. HUNT, EATON RAPIDS, MICH.

FOR SALE

One Iron Gray Percheron Stallion, registered, 3 years old. One pair of Spanish Mules age 6 and 8, weight 2100. One Spanish Jack. Two Holstein bulls registered, mostly white, sired by a 33-lb. bull; one is 2 1/2 yrs., one is 4 mos. a dandy. Milford P. O., Highland Phone and R. R. station. D. E. Dean, Milford, Mich.

SHETLAND PONIES

Herd established 1891. 200 Head to select from. Write Dept. E for catalog. The Shadyside Farms, North Benton, O.

FOR SALE, Thoroughbred Shetland Pony, eight yrs. old. Sound and gentle, fine driver and a beauty. ELMER E. BOWERS, R. R. No. 2, Manchester, Mich.

Percherons, Holsteins, Angus, Shropshires, Durocs DORR D. BUELL, Elmira, Michigan.

Registered Percheron 1 stallion coming 4 years 1 stallion coming 1 year. Mares and Fillies. Priced to sell. Wm. J. Blake, Dutton, Mich.

PERCHERON Stallions, one coming five, one coming two, one coming one. Priced to sell. E. J. ALDRICH, R. 1, Tekonsha, Mich., Bell Phone

Belgian Stallions for Sale. State licensed, 1800 lbs. Ohas. M. Seeley, Three Rivers, Michigan.

SHEEP

Shropshire Ewes Mostly yearlings with lambs by side, extra good ones, come at once if you want them.

Kope Kon Farm, Kinderhook, Mich.

OXFORD DOWN SHEEP We have a few rams for sale. M. F. Gansley, Lennon, Mich.

POULTRY.

Anconas Good stock, fine layers. 30 eggs \$2.50; 50 \$3.00; 100 \$3.50. Order now. T. Z. RICHEY, CANNELTON, INDIANA

Baby Chicks and Hatching Eggs From Bred-to-Lay Barred Rocks, S. C. White Leghorns and S. C. Buff Orpingtons. All high class stock at very reasonable prices. Send for our Chick Folder at once. **RUSSELL POULTRY RANCH**, Petersburg, Mich.

Baby Chicks, S. C. White Leghorns, 5,000 for May, at \$12.00 per 100. Safe delivery guaranteed. All breeders are farm raised and bred for high egg production. Order direct from this advertisement. **SUNNYBROOK FARM**, Hillsdale, Mich.

Baby Chicks Cheaper than hatching eggs. We specialize in Leghorns, Rocks and Reds. Send for catalogue. Twentieth Century Hatchery Company, Box 162, New Washington, Ohio.

CHICKS Rocks, Reds, Orpingtons, Wyandottes, Leghorns. Best laying strains. Ship everywhere. Prices right. **TIFFIN POULTRY FARMS & HATCHERY**, Dept. 16, TIFFIN, OHIO.

Baby Chicks: 50,000 S. C. White and Brown Leghorns at \$10.00 per 100, \$90.00 per 1,000. Safe arrival guaranteed. Also Hovers and Brooders. Catalogue free. **Wolverine Hatchery**, Box 2221, Zeeland, Mich.

JOHN'S big beautiful hen-hatched Barred Rocks, good layers. Breeding pens (5 birds) \$10 to \$20. Eggs \$30, \$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.

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Special summer prices now, on hens, breeding males, eggs for hatching and day-old chicks. Eight-week-old pullets ready June 1st. Write for catalog and price list.

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Barred Plymouth Rock Eggs from full blood stock winning strain. J. A. Barnum, Union City, Mich.

Barred Rock Eggs and Baby Chicks. Four Pullets Layed 950 Eggs in one year. **W. C. Coffman**, R. 3, Benton Harbor, Michigan.

Barred Rock Eggs for hatching, \$1 per 15 or \$5 per 100. **GEO. D. CLARKE**, R. 2, Lowell, Mich.

"200-Egg" Pedigree White Leghorns

Baby Chicks, Eggs for Hatching "Bred-to-lay" strain, vigorous, healthy stock, all sired by Missouri Experiment Station males with pedigrees of 200 to 274 eggs in one year. Chicks, \$25 for 100, \$100 for 500. Eggs for hatching, \$10 for 100. Thousands of satisfied customers. Book your order at once for eggs for hatching and baby chicks of quality. We sell Magic Brooders, best brooders made, \$16.50 each, capacity 300 to 500 chicks. Catalogue. **Michigan Poultry Farm**, Lansing, Mich. "Michigan's Largest Poultry Farm."

LAYBILT S. C. W. LEGHORNS

Large, Great Layers, Pure White

Proved egg type from like ancestry. Not the "Best in the World," but **None Better** for beauty and laying ability. **Laybilt Leghorns** mean either better quality at the same price or the same quality at a less price. **Selected hatching eggs**, \$1.50 per 15, **Parcel Post paid**: \$5 per 100; 9% fertility guaranteed. **Strong Day-Old Chicks**, \$12 per 100. Guaranteed delivery, alive and lively. **Everfresh Egg Farm**, Ionia, Mich.

S. C. White Leghorns

We have about 40 S. C. White Leghorn cock birds for sale. These males are from 200 egg strain and are offering them for \$3 each. Also about 200 fine April hatched pullets at a great bargain. Eggs for hatching March and April \$5 per 100. We will gladly give references on all our sales.

KRETEL BROS., Box 624, East Lansing, Mich.

CHICKS, are booking orders now for spring delivery, different varieties, free booklet. **Freeport Hatchery**, Box 12, Freeport, Michigan

Baby Chicks pure bred Youngs S. C. W. Leghorns and P. B. Rocks, 8 cents and up. Catalogue free. **M. Knolls Hatchery**, Holland, Mich., R. 3

FOR SALE Pure bred White Plymouth Rock Eggs for hatching. **CHAS. KLETZLEN**, BATH, MICH.

FOR SALE Pure Bred R. C. B. Minorca eggs for hatching \$1.00 per 15. **E. D. Van Natter**, Standish, R. 3, Mich.

THE CAVANAGH LEGHORN

"Lays and Lays Profitably"

Vigor, Egg Production, Longevity

1000 hens as breeders on free range.

Hatching Eggs \$1.50-15, \$ 7.00 per 100

Baby Chicks \$2.70-15, \$16.00 per 100

Fertilized eggs—full count and safe arrival of chicks guaranteed

CAVANAGH POULTRY FARMS

Route 3, Lansing, Michigan, U. S. A.

"30 years Experience—Insures Quality."

BUFF LEGHORNS Pullets, Hens, Pens, Eggs. All very reasonable. **Dr. William A. Smith**, Petersburg, Mich.

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HATCHING EGGS from my S. C. W. Leghorns utility \$5 per 15. If you want to raise some prize winners send \$3 for 15. **White Line Poultry Farm**, Hillsdale, Mich.

EGGS for setting from R. C. Brown Leghorns, leading strains in America. Also W. China Geese and M. Pekin ducks. **MRS. CLAUDIA BETTS**, Hillsdale, Michigan

Eggaday White Wyandottes, per 30: \$6.50 per 100. **EGGADAY RANCH**, Marshall, Mich.

Improve Your Poultry. My Young's Strain S. C. White Leghorns are great money makers. Strong, vigorous, bred-to-lay stock. Baby chicks \$8 to \$11 per 100. Satisfaction guaranteed. Large orders filled. Free catalogue. **W. Van Appledorn**, Holland, Mich., R. 7, Box 141.

MORSE'S White Leghorns. State Cup winners. Bred for eggs for years. Now selling eggs, chicks and stock. Free catalog. **Rufus Morse**, Belding, Mich.

Pine Crest S. C. White Orpingtons cock-crels, pullets, eggs \$5 and 3 per 15, utility \$8.00 per 100. **MRS. WILLIS HOUGH**, Pine Crest Farm, Royal Oak, Michigan.

TO reduce stock, pure blood S. C. B. Minorca 10 females 1 unrelated male \$15.00 to \$18.00 big rangy farm raised birds. **Herbert Hammond**, Williamston, Mich.

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stops chicks dying

Nearly all the chicks you lose die from White Diarrhoea or Chick Cholera. Avicol is guaranteed to cure and prevent this costly disease, also Black-head in turkeys and all other bowel diseases of poultry. Leading poultry breeders everywhere use and endorse Avicol. Easily given, in the drinking water. Saves your chicks and makes them grow faster. A good tonic and conditioner for all poultry.

Bond-Guaranteed to do the work or money promptly refunded. Avicol is a new scientific discovery—nothing else like it. Your poultry remedy dealer can supply you. If not, we will send you Avicol by mail prepaid. Price 25c and 50c. Don't accept a substitute.

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Save Your Chicks-FREE

Send two names to The Wight Company, 25 Main, Lamoni, Ia. and they will send you enough IOWA Chick Tonic absolutely free to save forty chicks from White Diarrhea. This remarkable disease preventative is guaranteed to save ninety percent of every hatch of chicks. It has helped 10,000 poultry raisers save their chicks and make more money. It is certainly worth while to write The Wight Co., for this wonderful chick saver.

Homestead Farms

Offers tested thoroughbred poultry; Stock that with natural and convenient care, will give eggs thru the Winter; stock that has given eggs thru the Winter just passed.

Red Blood

Thoroughbred

Practical Poultry

Our poultry stock is all free range, no yards (except brooding pens). In Winter our Hens are in Colony Houses holding 30, 50, 100, 140 and 150 fowls—housed as suits convenience, as the average farmer will house his fowls, they are bred to natural farm conditions and will lay with the care that the farmer can give.

During the past Winter eggs have been shipped regularly to Chicago families—farm products direct delivery. We offer:

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Single Comb White Leghorns

Single Comb Brown Leghorns

Single Comb Black Minorcas

Single Comb Buff Leghorns

Barred Plymouth Rocks

White Plymouth Rocks

Buff Plymouth Rocks (Limited)

Rose Comb Rhode Island Reds

White Wyandottes

White Pekin and Indian Runner Duck Eggs

Day-Old Ducklings

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Homestead Farms is demonstrating the moral and economic value of federated interests: it is making poultry a profitable farm stock to the farmers of its own immediate vicinity.

If you want Red Blood Practical Poultry that will give eggs in Winter as well as in Summer, buy our stock which is bred to conditions under which you can yourself conveniently keep poultry.

We quote you prices and give our own experience in our descriptive circular which we will mail to you. Will you send for it?

HOMESTEAD FARMS, Bloomingdale, 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., eggs 15 for \$1.50; 100, \$8; 120, \$7.20. Mammoth Bronze Tom Turkeys, 8 to 36 lbs. according to age \$5 to \$25, 10 eggs \$4. **A. E. Cramton**, Vassar, Mich.

ROSE COMB BROWN LEGHORNS Eggs from prize winners. Farm range. Prices: 15 eggs \$1; 100 eggs \$5. **D. ELON SPOTTS**, Hillsdale, Mich.

R. I. Red Chicks and Eggs. Both Combs. Dark Red. By more Michigan farmers than any other strain Catalogue free. **Interlakes Farm**, Box 39, Lawrence, Mich.

RINGLETS' Barred Rocks, The famous show and laying strain Eggs \$2.00 for 15. Delivered by Parcel Post from selected matings. **Plain View Stock Farm** J. W. Saliard, Prop. Res. W. St. Claire St., Romeo, Mich.

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R. C. Br. Leghorns, Kulp and Maplewood strains with show and laying qualities. Write for prices before ordering. **Maplewood Farm**, Dept. F. Navarre, Ohio

Bred-to-Lay S. C. W. Leghorns and Barred Rocks. Eggs, \$1 for 15, \$1.50 for 25, \$2.50 for 50. **Alpine Poultry Farm**, R. 2, Grand Rapids, Mich.

S. C. W. Leghorn eggs from a 240 egg strain, \$2 per 15. Utility eggs, \$5 per 100. **HILL-CREST POULTRY FARM**, Ypsilanti, Michigan.

Single Comb Black Minorcas Great big sired by a 19 lb. cock bird. **R. W. Mills**, Saline, Mich.

S. C. White Leghorns 200 egg strain. Tom Barron hens. Baby chicks 15c each. Hatching eggs 5c each. **C. W. Gordon**, Fowlerville, Michigan.

Plymouth Rock Hatching Eggs. Buff, Barred, Columbian and White. **Sheridan Poultry Farms**, Sheridan, Mich.

SILVER, Golden and White Wyandottes. Eggs from some grand matings. \$1.50 per 15, \$2.50 per 30, large vigorous birds. **C. W. Browning**, R. 2 Portland, Mich.

TRY some Silver Spangled Hamburg eggs for hatching. The Dutch over-laying layers White Holland Turkey eggs. Fine Belgian Hare Does bred to high class Bucks. Pedigreed. Stamp for circulars. **Riverview Farm**, Vassar, Mich.

Buff Wyandotte Cockerels \$3 each. Also Barred Rock and Wyandotte eggs for hatching, \$1.25 per 15. **Mrs. E. W. BLACK**, Caro, Michigan.

WHITE Wyandottes. A. 1 layers. Eggs for hatching, \$1.25, \$2.33 for 15, \$7 per 100. Special matings \$5 for 15. **DAVID RAY**, 709 Norris St., Ypsilanti, Michigan.

White Wyandottes, winter & summer layers. Eggs \$5.50 per 100 Baby Chicks \$12 per 100. Satisfaction guaranteed. **Hemlock Poultry & Stock Farm**, Prescott, Mich.

DUCKS. Pencilled Indian Runner. Eggs white \$1.00 for 15; \$6 per 100. **HUGH KEPHART**, Dowagiac, Michigan.

Poultry.

POULTRY HOUSE BUILDING HINTS.

The wire on the open-front poultry house should be of fine mesh to prevent sparrows from entering the building and enjoying the feed hoppers while they assist in spreading poultry diseases from contaminated yards which may exist in the vicinity.

In constructing the curtains it pays to use a good grade of canvas which will not soon be torn and whipped out of the frames by wind. The curtains can be placed in slots along the side of the wall. They can be easily pushed into place and the birds will not roost upon them, as is frequently the case when the frames swing back where they are hooked to the ceiling.

Some poultrymen find that it pays to use one-half glass in their houses. The glass permits light to enter on stormy days and the other half of the front which is protected by canvas insures the birds receiving a good supply of fresh air.

A fair sized feed bin in the laying house can often be constructed of left-over pieces of matched material and if this bin is large enough to hold a month's supply of scratch feed it will save several minutes at feeding time as well as much heavy lifting in carrying feed from the storage bins to the laying house. A time-saver of this kind is much appreciated on stormy days.

A platform is necessary for the drinking fountain or crocks of sour milk, as it is necessary to keep them on an elevation to keep out accumulations of litter. Clover can be given to the birds wrapped up in a small roll with poultry wire and suspended from the wall. The hens pick at it during the whole day, but it is never wasted by being scratched around in the litter which becomes more or less unclean within a few hours after it is placed in the house.

If wet mashers are used in feeding the flock the mixture should be fed in troughs which can be scalded frequently. These troughs should be hung on nails on the wall after feeding time to keep them as clean as possible.

Drive spikes through a long board at intervals of one foot and then nail the board to the poultry house wall about one foot from the floor. This will form a convenient method of feeding mangels to the birds. The mangels should be hacked up a little with a knife to encourage the birds to pick at them and if the nails point upward at an angle of forty-five degrees few mangels will be pulled off and thrown into the litter.

The dropping boards must be cleaned every day and proper equipment is necessary. Hang a bushel basket and a hoe on nails near the roosts and they will prove time savers in that very necessary work. During the freezing weather a common garden spud will be useful in breaking up and loosening accumulations of dirt.

Ingham Co. R. G. KIRBY.

SPRING CARE OF BEES.

In view of the probable sugar supply this year, it is highly desirable that bee-keepers increase the production of honey to the greatest possible extent. To this end immediate steps should be taken to insure the proper building up of the colonies before the honey-flow begins.

Bees need just three things during the spring and all of these can be readily supplied by the bee-keeper. These are plenty of stores, plenty of room for brood rearing, and plenty of protection. The stores should have been provided last fall, but in case colonies

are found which are not abundantly supplied, a sirup of granulated sugar should be fed. Small quantities from day to day are usually less valuable than a considerable quantity all at one time. This may be given on any warm day, and should, if convenient, be fed in a feeder entirely inside the hive.

Room for breeding usually can best be given by providing each strong colony with two hive bodies as soon as freezing weather has passed. The one-story, ten-frame Langstroth hive is usually not large enough for a good queen during the spring and, of course, smaller hives cramp the colony still more. Extra room will be valueless unless abundant stores are provided and unless the queen is prolific.

In any locality where the temperature drops to freezing in winter, bees need winter protection, but many bee-keepers fail to realize this. If proper protection has been given during the winter, this should be left on the hives as long as possible. Even if colonies have been neglected during the winter, spring protection may help wonderfully in permitting the bees to build up in time for the honey-flow. Protection from wind is quite desirable.

If bees have been adequately cared for, spring manipulations usually are not necessary, but every bee-keeper should be sure that his bees are well supplied with the three essentials for intensive brood rearing. It is not advisable to spread frames of brood in attempting to stimulate brood rearing.

Every bee-keeper should bend every energy this year to increasing the production of honey. He will not only find it profitable, since prices will doubtless be good, but he will be aiding the country by providing a product of high food value when other sugars are scarce.

HOPPER-FEEDING YOUNG CHICKS.

Giving chicks free access to food is recommended by experienced poultrymen in order to crowd them to early maturity, and the hopper system of feeding is rapidly coming into favor but the beginner will do well to be a trifle cautious at the outset.

An attempt of this kind may result in diarrhoea due to indigestion, as the chicks will sometimes gorge themselves on the theory that in that way they would be less liable to over-eat as might be the case if given such liberty later on. Following the advice of a poultry journal a mixture of which wheat bran formed the principal part, was placed in self-feeders before a flock of chicks about three weeks old. They ate it voraciously, but in a short time bowel trouble developed to such an extent that it had to be discontinued.

Some young turkeys, a little older than the chicks, eating from the same hoppers, received a serious setback from the same cause. Chick food of a standard brand fed in the hoppers did not have the same effect of the other, but here again trouble came to the turkeys and several of them died. Dissection showed millet seed in the gizzards.

Whether or not these seeds were the cause of death could not be proved. The firm putting out the feed stated that millet was always put in their product and they had never heard of trouble from it. However, it has been reported among growers that millet is injurious to young turkeys. It has a very hard smooth shell and may not so readily yield to the grinding process which goes on in the gizzard as other seeds. Examination of the dead poult proved that they had been well supplied with sharp grit. The millet may not have been at all responsible for the loss of life in the case cited, but the fact that these seeds were the only ones found in the gizzards after death certainly looks suspicious.

E. E. R.

BREEDERS' DIRECTORY.

Change of Copy or Cancellations must reach us
Ten Days before date of publication.

We Offer a Few Special Bargains
In S. C. White Leghorn cockerels, Ram-
bouillet rams, Hampshire pigs (either
sex) and Holstein bulls. A good chance
for a small investment to reap the bene-
fit of a large expenditure of capital and
years of expert breeding.
Flanders Farm, Orchard Lake, Mich.

CATTLE.

ABERDEEN-ANGUS

Bulls by BLACK QUALITY ITO, sire, First prize,
Breeder's and Calf Herd Mich. State Fair 1916. We
also won first on Exhibitors Herd, Jr. Champion Bull,
Jr. Champion Female and Grand Champion Cow. Also
breeders of Percheron, Hackney and Saddle Horses.
WOODCOTE STOCK FARM, IONIA, MICH.

FOR SALE Registered Guernsey Herd Bull,
2 year old, from A.R. stock, 2 Reg-
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GILMORE BROS., Camden, Mich.

FOR SALE Good Angus bulls, bred cows, and
heifers. Prices reasonable.
Geo. Hathaway & Son, Ovid, Mich.

Guernsey Bulls of service age and calves from
choice. Adv. reg. breeding.
T. V. HICKS, Route 1, Battle Creek, Mich.

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.

HOLSTEINS
AND
BERKSHIRES

All stock guaranteed as
represented

3 choice Bull Calves for fall use, with
large yearly record backing. Can-
not be beat as individuals. Berkshire
gilts bred to farrow in August, good
backs, large bone and from large lit-
ters. There is no better investment
in sight.

SWIGARTDALE FARM
PETERSBURG, MICH.

"TOP NOTCH" HOLSTEINS

Many years of careful management and systematic
handling of our three large herds find us the breeders
and owners of a cow that heads one of the only eight
combinations of three direct generations of thirty
pound cows in the United States. We have young bulls
for sale sired by a son of this great cow. The blood of
this cow, combined with that of other great
animals of the breed in our herds, would insure most
favorable results in almost any herd. **MCPHERSON
FARMS CO., Howell, Michigan.**

Bigelow's Holstein Farms,
BREEDSVILLE, MICH.

Have Some Fine Registered Stock For Sale

Holstein Bulls

1 to 9 months old. Dam's A. R. O. Our herd sire is
Johanna McKinley Segis 3d. 7 nearest Dams aver-
age 27.25 **BLISSVELDT FARMS, Jenison, Mich.**

Registered Holsteins. Very fine Young bull five
months of age A. R. O. breeding
Satisfaction guaranteed. **W. B. Jones & J. F. Lutz, Cohoctah, Mich.**

Holstein Calves, 19 heifers, and 2 bulls 15-16ths pure.
5 weeks old, beautifully marked, \$30.00 each, crated
for shipment anywhere. **Edgewood Farm, Whitewater, Wis.**

REG. HOLSTEINS: Herd headed by Albina Bonte
Butter Boy No. 3124. Dam's record at 6 yrs. butter
25.53 lbs. milk 619.4. Yearly record at 2 1/2 yrs. butter
30.2 lbs. milk 1862 lbs. **W. B. READER, Howell, Mich.**

Cluny Stock Farm

100 REGISTERED HOLSTEINS 100
THE MILK AND BUTTER KIND

Five splendid bull calves sold since January 1st, 1917.
Only three more ready for sale at this time. One from
a sire whose dam holds sixth highest yearly butter re-
cord. One from a sire whose three nearest dams aver-
age 30.6 lbs. butter and 658 milk in 7 days. One from
a son of Colantha Johanna Lad whose 7 nearest dams
average 28 lbs. of butter and 587 lbs. milk.
Write for pedigrees and prices.
R. BRUCE MCPHERSON, HOWELL, MICH.

OAK LEAF FARM

Herd Sire
Ypsilanti Sir Pictetle De Kol
Service bulls all sold. Buy a calf and raise it. Fine
individuals 4 and 5 months old. **E. H. Gearhart &
Son, Marcellus, Mich., R. No. 4.**

REG. Holsteins. Place your order now for a bull calf.
I have cows due to freshen soon, bred to the best
bull in Mich. **Elmer E. Smith, Redford, Michigan**

REG. Holstein Bull, ready for service. Sired by a
half-brother of World's Champion cow. Send card
for pedigree & price. **E. R. Cornell, Howell, Mich.**

Parham's Pedigree Stock Farm Offers reg. A. R. O.
Holstein Cows. Male Calves. Show Bull ready for service no akin
to cows, priced \$125. **R. B. PARHAM, Bronson, 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. **Peaceland Stock Farm, Three Rivers, Mich.**
Chas. Peters, Herdsman. C. L. Brody, Owner, Port Huron, Mich.

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

Hatch Herd Holsteins

Second Annual Sale, Ypsilanti, Mich.]

MAY 9, 10 A. M.

24 Granddaughters of King of the Pontiacs and Pontiac Korndyke.

This exclusive breeder's sale will include all of our this year's offer-
ings. No one has been permitted to pick even one at private sale. It
will include 24 daughters of our Senior Herd Sire, **KING PONTIAC
JEWEL KORNDYKE, 94184**—son of King of the Pontiacs, out of
a daughter of **DE KOL 2d's BUTTER BOY 3d**, and our Junior Herd
Sire, **KING LUNDE PONTIAC KORNDYKE 15th, 142487**, out of a
30 lb. son of King of the Pontiacs, and one of the best daughters of
PONTIAC KORNDYKE. There will also be offered choice sons of
both sires ready for service and younger. Catalogs ready May first.
Apply for same if interested to **WILLIAM B. HATCH, Ypsilanti, 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.

They are selling—get yours soon. Also Duroc Jersey Fall Boars ready for spring service. Full
particulars and price on application. Better yet, visit the farm.

H. W. MUMFORD, BROOKWATER FARM O. F. FOSTER,
OWNER, MANAGER

Ann Arbor, Mich., R. 7.

Third Annual Sale

of The Livingston County Holstein
Breeders Sale Co., Will Be Held at

Howell, Mich., May 17, 1917

At 10:30 A. M. at the Sale Pavilion
on the Fair Grounds

We will offer 90 head of high-
class registered Holsteins, consisting
of three young bulls whose dams have
records of 25 lbs. at 3 yrs. old, 29.68
lbs., and one whose dam has a semi-
official record of nearly 25,000 lbs. of
milk in one year, and the balance cows
and heifers of choice breeding, over 50
have records or are from record cows,
many of them are sired by 30-lb. bulls.
Our reference sires are a high-class lot,
several have dams with records from 30
to 35 lbs., and are by some of the best
known bulls of the breed. Catalogs
May 5th.

F. J. Fishbeck, Sec'y, Howell, Mich.

Walnut Creek Shorthorns

AT AUCTION

May 8th at 1 o'clock P. M.

I am selling my entire herd, consisting
of 50 head, all females excepting my
herd bull, the young bulls having been
sold. There are 16 registered and 34
high class grades. Farm is situated 6 1/2
miles south of Bellevue and 7 1/2 miles
north of Marshall. Write for catalogs.

**J. E. Walkinshaw, Proprietor,
Bellevue, Michigan**

Frank Waltz, Auct. W. A. Young, Clerk

Choice Reg. Holstein Bulls

1 to 12 months old at Farmers Prices.
LONG BEACH FARM, Augusta, Mich.

WINNWOOD HERD

John H. Winn, Inc., Holton, Mich.

Reference: Old State Bank, Fremont, Mich.
Have for sale 6 Maplecrest Korndyke Hengerveld
Holstein bulls. One 12 months; one 6 months; one 2
months, all out of A. R. O. dams. One made 19 lbs.
butter in 7 days as a Jr. 2 year old. Another 21 lbs. in
7 days as a Jr. 3 year old. Also have five others, same
bred from 2 to 6 months. Must sell at once, need the
room. Our prices will surprise you. **John H. Winn,
Holton, Michigan.**

1200-lb. Bred Young Bull

Ready for service. The sire Maplecrest De Kol Heng-
erveld own brother to a world's champion Junior
year old, 123 pounds of butter in a year. Brother, in
blood, to the ex-champion cow, record 132.93 lbs.
butter in a year. Write for pedigree and price.
**HILLCREST FARM, F. B. Lay, Mgr.
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Ten Good Young Holstein Cows For Sale

I want to sell as soon as possible, **TEN GOOD YOUNG**
cows. Most of them are bred to "The Milk & Butter
Champion" a son of a world's Record milk cow and his
sire is a son of a world's record butter cow. We will
have more cows than we can milk this Spring. So this
is your chance to get a few good ones. Also have bull
calves and a few bulls ready for service.
L. E. CONNELL, Fayette, Ohio

Holstein and Guernsey Heifer and Bull Calves
Choice selected promising dairy calves, practically pure
Holstein and pure Guernsey, but not registered, nice
color. \$20.00 each, all express paid to any point.
MEADOW GLEN, Whitewater, Wis.

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.**

Cows For Sale Some good grade cows, Holsteins and
Jerseys. Making room for youngstock,
producing from 8,000 to 12,000 pounds yearly on two
milking daily, sound and healthy, can furnish
records and photographs. Also good grade calves
and yearlings. **CHARLES STAFF, 1199 Woodward
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Two Choice Registered Two year old Heifers will
marked and good type. In the next 60 days,
fine individuals, and well bred, \$300 each, don't wait
a month if you want these, they will go, to the first
man sees them.
J. M. WILLIAMS, North Adams, Mich.

FOR Sale registered Holstein Cow, 6 years old, finely
marked and good type. She has 3 daughters, 2 A. R. O.
C. L. HULETT & SON, Okemos, Mich.

High Grade Holstein Heifers

Fresh or soon to freshen. Also grade Holstein Bull.
Prices reasonable. **THE JENNINGS FARMS'
V. M. SHOESMITH, General Manager, Bailey, Mich.**

2 Holstein Heifers by a 24 lb. bull in calf
to 30 lb. bull. Bull calf
22.92 lb. dam. 30.21 lb. sire. Terms if wanted.
M. L. McLAULIN, Redford, Michigan.

Reg. Holstein Friesian Cows and Heifers, some
A. R. O. \$125. Heifers
nine months old \$100. Bulls \$40 up, with papers.
FRANK STAFFEN, R. 3, Howard City, Mich.

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

BULL CALF for sale, Pontiac Korndyke Breeding,
Dam gives 60 lbs. milk per day at 2 years. Farmers
Prices. **JOHN A. RINKE, Warren, Mich.**

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

Registered Holstein Bulls, ready for service, closely
related to the 50 lb. cow.
Priced to sell. **B. B. REAVY, Akron, Mich.**

20 Herefords BOTH SEXES
ALL AGES
EARL C. McCARTY, Bad Axe, Michigan

HEREFORDS

10 Bull Calves from 4 to 12
months old.

ALLEN BROS., PAW PAW, MICH.

FOR SALE Twenty-five Jersey cows,
two to eight years old.
Eight registered, balance high grades. Excellent pro-
ducers, guaranteed right. Also some bred yearling heif-
ers, registered and high grades. Also some fall heifer
calves from above stock. Good reasons for selling. Bell Phone—
Hadley, P. O. Metamora, Mich. R. 1, C. E. Hodgson, L. H. Riley.

Buy a Jersey Bull!

The improvement of your herd
depends chiefly on the selection
of the right sire. Get the best.
Read the ads of Jersey breeders
in this and other papers. Write
them at once for prices, pedi-
grees and plan to grade up your herd. Jersey
bulls are strongly prepotent and you'll find
even grade Jerseys surprisingly profitable.

Send for our free book, "The Story of the
Jersey" and learn the truth concerning this
great breed.

The American Jersey Cattle Club
346 West 23rd Street, New York City

Jersey Bulls for Sale from high-producing dams, with
testing Asso. records, also on
semi-official test. **C. B. Wehner, R. 6, Allegan, Mich.**

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

JERSEYS FOR SALE Young bulls
service from R. of M. ancestors. Meadowland Farm,
Waterman & Waterman, Packard Road, Ann Arbor, Mich.

FOR SALE REGISTERED JERSEY BULLS
Ready for service. Write your wants.
SMITH & PARKER, R. D. No. 4, Howell, Michigan

FOR SALE Nine months old thorough-
bred Jersey Bull—New
England Star, Jr.; also thoroughbred Jersey Calves
and Yearlings. Births reported to Am. Jersey Cattle
Club. Belding Land & Improvement Co., Belding, Mich.

FOR SALE Yearling Jersey bull from regis-
ter of merit stock. **HILLSDALE
FARM JERSEYS.** Great producers.
O. & O. DRAKE, Ypsilanti, Michigan

Maple Hill Farm Registered Jersey Cattle
Stock under 2 1/2 years all sold.
J. R. Worthington, R. No. 7, Lansing, Michigan

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

The Wildwood Farm
Breeder of Line bred Majesty strain of Jersey Cattle.
Herd on R. of M. test. Tuberculin tested. Bull calves for
sale. Type & Production is our motto. **Alvin Balden, Capac, 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.**

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

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.

RICHLAND SHORTHORNS

Sires in service, Village Archer and Albion Crest. 1st.
prize 2 year old and Junior Champion at the Mich.
Stat Fair in 1916. We offer a number of young bulls and
females for sale. Also some Aberdeen-Angus bulls of
serviceable age reasonable prices. Write your wants.
Tawas City, Mich. **C. H. Prescott & Sons, Prescott, Mich.**

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.

FOR Sale—Reg. Short Horn Bulls by Maxwilton
F. Monarch 2nd, a son of Avondale, from 11 to 13 mos.
old. **John Schmidt, Reed City, R. No. 5, Michigan.**

Shorthorns For Sale Young bulls ready for
service, also cows and
heifers. **W. B. McQuillan, Howell, Michigan.**

Shorthorns For Sale. Young bulls \$100. Bred cows,
also heifers \$150 for quick sale.
Write **W. J. BELL, ROSE CITY, MICHIGAN.**

Bates Shorthorns. The original milk strain.
No stock for sale at present
J. B. Hummel, Mason, Michigan

SHORTHORNS Maple Ridge Herd, Estab-
lished 1867. Young bulls
for sale. **J. E. Tanswell, Mason, Michigan.**

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

Shorthorns 3 Red Bull Calves, 6 months old.
1 Roan Bull, 2 years old, for sale.
W. C. OSIUS, Hillsdale, Mich.

HOGS.

Durocs and Victorias
Heavy bone, lengthy Spring Boars and Gilts from prize
winners sired by one of the best Sires of the Great De-
fender & other noted strains. **M. T. STORY, Lowell, Mich.**

BERKSHIRES—A few good fall pigs left, either sex.
Also booking orders for spring pigs. Pairs no
skin. **Chase Stock Farm, R. 1, Marlette, Michigan.**

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

Duroc Jerseys bred gilts for sale
priced to sell.
Carey U. Edmonds, Hastings, Mich.

40 Duroc Sows and Gilts will be
bred to the two
best young Duroc Boars in Mich. A postal will
bring description, breeding and price. Last fall boar
pigs \$25 to \$40. **Newton Barnhart, St. Johns, Mich.**

Durocs For Sale

Big heavy boned fellows, Spring Pigs ready to ship,
and a good lot of Fall Boars and Gilts. **M. A. BRAY
ESTATE, Okemos, (Ingham Co.) Mich.**

Duroc Sows and gilts bred to Eureka Cherry King
and Crimson Critic son of Critic Model 1916
champion Iowa Fair. **W. C. Taylor, Milan, Mich.**

Duroc Jerseys Fall boars ready for service, sired by a
Volunteer also booking orders for spring pigs, pairs not
akin. **F. J. DRODT, Monroe, Mich., R. 1.**

Duroc Jerseys. Breeding Boars and Sept. Gilts
J. H. Banghart, East Lansing, Mich.

DUROCS—Ten big smooth Sept. Gilts, also one
extra good Sept. Boar by King the Col. All priced
to move at once. **E. D. Heydenberk, Wayland, Mich.**

PINEHURST DUROCS. Choice fall boars. One
great yearling boar. Choice Yellow Dent Seed Corn
for sale. **Orlo L. Dobson, Quincy, Michigan.**

Reg. Duroc Jerseys. Pigs at weaning age for sale.
choice goods. Price \$20.00 Reg.
and Del. **J. Robert Hicks, St. Johns, 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 re-
presented 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

1/2 Ton O. I. C's. & Chester Whites 1/2 Ton
10 Oct. and Nov. boars sired by our undefeated Grand
Champion School Master. The boar that has size and
quality combined. All sold any age. Write and get our
Catalogue its free and describes our champions. We do
not say our hogs are the best but we win the cham-
pions to prove it. We have 100 sows bred to our cham-
pion boars for Mar. and Apr. farrow. **HARRY T.
CRANDELL & SON, Cass City, Mich.**

Stock Ads. Continued on Page 577

THE ORIGINAL 2-WHEEL TRACTOR

That Does All Farm Work WITHOUT HORSES

When you come to buying a tractor, whether for a farm of 80 acres, 280 acres or more, there are a number of questions you will need to ask yourself before you buy. Here are some of them:

- Will it *CULTIVATE* as well as plow?
- Will it do *ALL* my farm work without horses?
- Will it work on plowed ground without packing the soil?
- Will it do the work quicker; easier; and save on hired help?
- Is it *REALLY* a one-man tractor?
- Will it handle as easy as a team of horses, rather than be too heavy, clumsy, and inconvenient?
- Do I ride on the tool where I can see the work I am doing, or will I have to have someone run the tractor while I am operating the farm implement?

The tractor that answers these and all other farm power problems most practically, and profitably is the

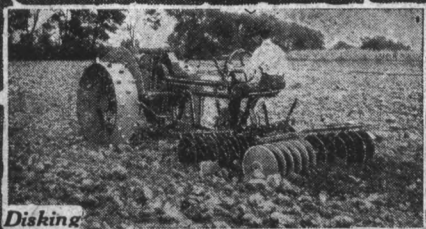
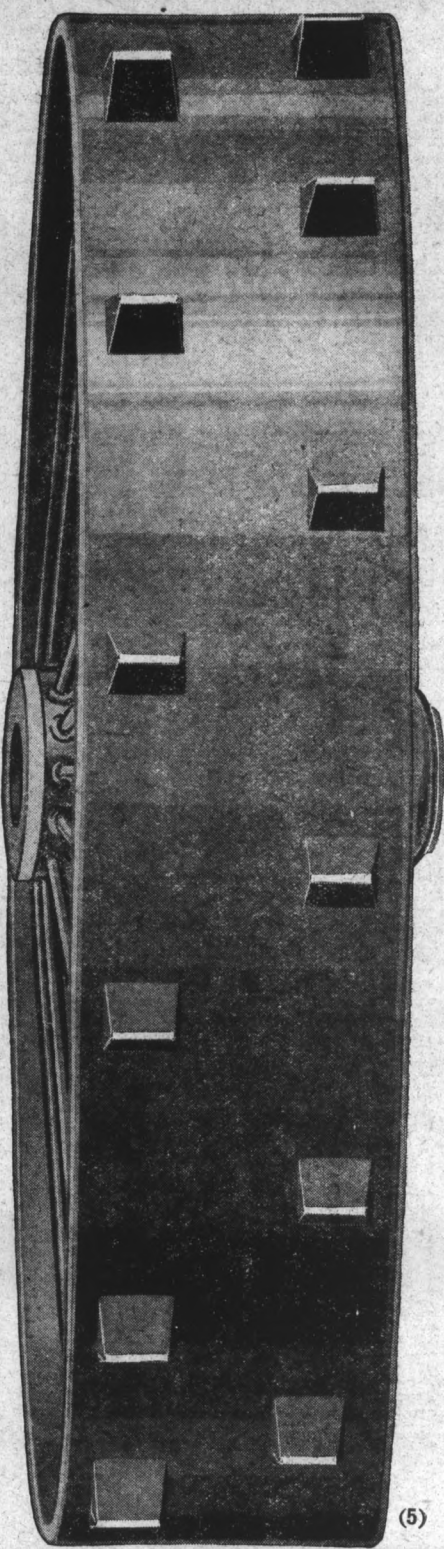
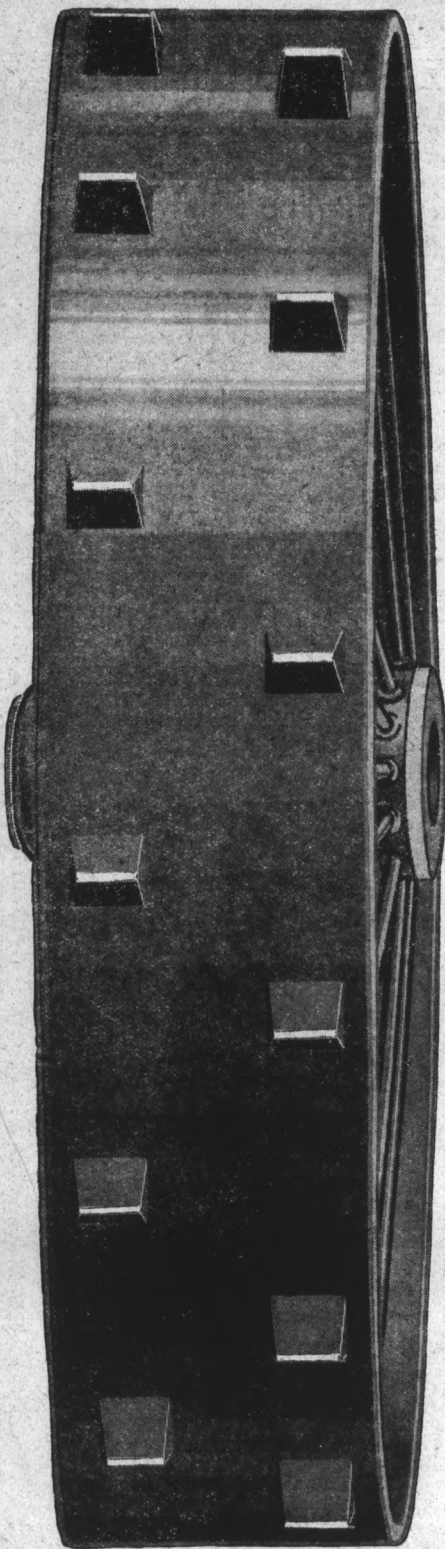
MOLINE ORIGINAL UNIVERSAL TRACTOR

This is the original Two-Wheel Farm Tractor. It pulls two 14-in. plows; will disc, harrow, plant, *CULTIVATE* all hill and row crops, pull mower, binder, manure spreader, fill your silo—and do all belt work on the average farm. In fact, it will do anything you can do with horses; do it quicker; easier; and with less hired help. It weighs only 2,800 lbs., but all its weight being on its two wheels—all its weight is *traction weight*. The tool you hitch it to, forms the rear wheels and you do not have to pull around a ton of needless weight. It will back up with tools attached easier than a team will back. You can turn around in a small space; get close to the rows and the fences. It is the ideal tractor for the farmer because it costs less than four horses; is as powerful as five horses; does more work than seven horses; is inexpensive to operate; and eats only when it works.

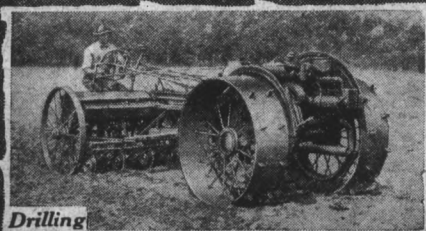
Write for our new Tractor Catalog and read how farmers everywhere are solving the power and hired help problems on their farms; how they are changing the drudgery of farming to a profitable pursuit. Learn how you can make your work easier and get it done on time and grow bigger, better crops. Write today.

MOLINE PLOW CO., Dept. 42
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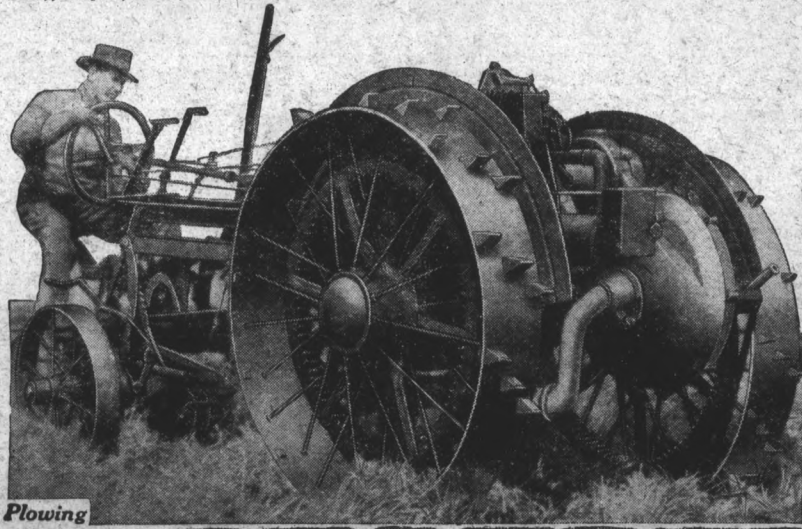
The Moline Line includes: Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Spreaders, Mowers, Manure Spreaders, Plows, (Chilled and Steel), Reapers, Scales, Seeders, Stalk Cutters, Farm Trucks, Vehicles, Wagons, also Stephen Six Automobiles.



Disking



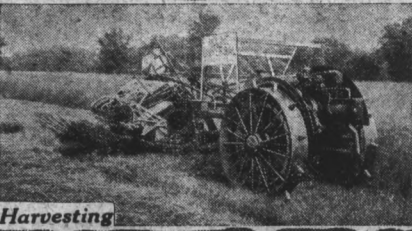
Drilling



Plowing



Cultivating



Harvesting