

# MICHIGAN FARMER

AND  
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## The Renovation of Old Orchards

By T. A. FARRAND

THE first question that arises when the matter of orchard renovation is considered is what orchards would be profitable to save or to what stage of neglect or decay must an orchard be to be beyond profitable investment. In answer I would say that I do not think it would pay the average farmer with an old orchard of many worthless or poor varieties, with trees planted too close together and badly infested with scale, with tops nearly dead, especially if situated a long distance from town, to attempt any renovation.

There are thousands of such orchards which would be far better cut down and in their place a few trees of varieties that are early bearers planted. These should follow in a succession covering the season, and be selected for the family use. With good care ten trees would be enough to furnish the family with plenty of apples every year.

To those who have orchards of fairly good size of few varieties and in fairly good condition as regards decay and freedom from scale, I would say that there is nothing on the farm that can be made as profitable if followed up from year to year. The methods to be applied necessary to get profitable results are pruning, spraying and fertilizing or cultivating, possibly both as our whole aim is to put the trees in a condition so that they may be healthy and bear profitable crops of fruit.

In pruning there is no set rule to go by and it is an expensive operation in the neglected orchard if the work is left until the busy season comes on when high-priced labor has to be used. This part of the work could be done on hundreds of farms on the pleasant days we have during the winter months and be out of the way before any of the other farm work is necessary.

The object in pruning is to help stimulate the growth and vitality of the tree, to let in sunlight, allow a circulation of air through the tree and make easier a thorough job of spraying. A good sharp pruning saw is the most practical instrument to do the work well. Remove all dead limbs, stubs, etc., cutting close to main limb. Large branches should be cut out if necessary to improve the general appearance of the tree.

If there are openings that need filling up leave a water sprout. Thin out small stuff in ends of large branches and if trees are splitting in crotches put one-half inch by six-inch lag screws in three feet up from the crotch and wire across with heavy galvanized wire.

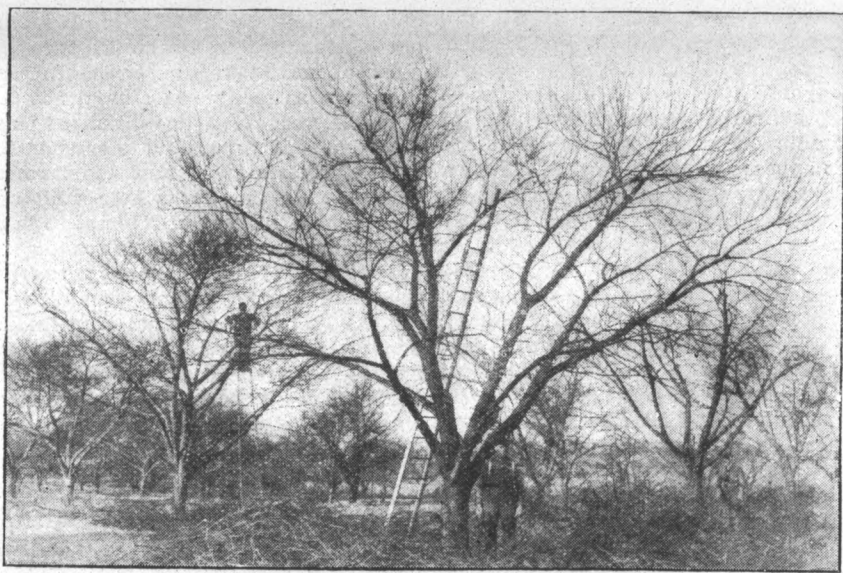
Head in on main leads in the center of tree so that a 20 or 22-foot ladder will reach the fruit and in doing so make the cut where there is a brace of branches which will support the stub. Paint the wounds over if you feel like it, I don't. Altogether too much stress has been laid upon this unimportant point in the past.

In the matter of orchard fertilization there has been altogether too much fear that a spoonful of manure might be detrimental to an apple orchard. I have never used commercial fertilizers so can give no light in that direction, but have used the stable manure and am a firm believer in its beneficial effects. Commercial fertilizers would supply the plant food but

purpose. Whichever is the cheapest and will give the best returns under your circumstances is the one to follow. I prefer mulching with manure to cultivating. On heavy soils I believe cultivating is detrimental to Northern Spys and possibly to large growing varieties. I am satisfied that cultivation will produce larger fruit and more barrels than sod and ma-



Northern Spy Orchard Before Renovation.



Same Orchard After it was Pruned by Mr. Farrand.

would lack the decaying vegetable matter and its mechanical effects upon the soil.

There is a great diversity of opinion regarding the matter of cultivation, and probably there always will be. There are probably conditions where it is the wise course to break up the old sod.

We cultivate to grind the soil up into small particles and hold the moisture to make the plant food soluble and on the side keep down other growing plants that would absorb the moisture. We mulch for exactly the same

observed are thoroughness in application and the proper time for spraying. Of course, the proper mixture and strength follow along in this connection. But I lay particular stress on the first named points as therein lies the cause of so many failures to get the desired results. Convenient water facilities are important and reduce the cost of production.

The day of the fine misty spray is fast passing away and in its place is the variable nozzle which will throw a heavy spray against the wind. Short rods with a heavy stream will take the place of the inconvenient tower and long cumbersome spray rod. By this arrangement one man will be able to do the work two do now.

In the orchard that is badly infested with scale, I advise spraying the trees from both sides and go both ways in the orchard, using lime sulphur one gallon to seven of water. If done thoroughly this will certainly control the scale.

Farmers who have orchards that are conveniently situated and have been used for pasture purposes often ask if they can continue to do so, at the same time applying the above methods and get profitable results. They certainly can if they do their work thoroughly. But the pasture should not be allowed to get so short before taking the stock out of the orchard that they will eat the trees and do not allow them in later than August 1 if the trees are heavily laden with fruit. I have produced as fine apples under the above conditions as were ever grown in Michigan.

### SOIL DRAINAGE.

This season has emphasized the need of soil drainage on all but the most open soils where nature has already provided perfect drainage. One of the conditions of plant growth is that the soil be not surfeited with moisture, as, if the interstices between the soil grains be filled with water, air will be excluded and the submerged plant roots will as surely drown, as would an animal if deprived of air. Some means must be employed that will aid the percolation of water through clay soil or that will carry it away from submerged low lands. In either case the most practical means is the tile drain.

Open ditches are extravagant in that they occupy usually the best part of the land and require, because of their tendency to cave, a vast amount of labor to keep them clean. They furnish breeding ground for weeds, and prevent the symmetrical shaping of fields. The crude practice of using brush, stone, timber or board drains has pretty well disappeared with the introduction of tile. Where tile of good quality are used, and a fall of adequate grade secured, such a drain should give good results indefinitely.

Where ditching is done by means of  
(Continued on page 159).



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DETROIT, AUGUST 28, 1915

### CURRENT COMMENT.

**The Good Roads Movement.** At the inception of the good roads movement a few years ago, progress was slow, not only in the actual accomplishment of the work of road improvement but as well in the development of a strong public sentiment in favor of building expensive types of permanent highways by general taxation. In the intervening years this situation has been greatly changed and people generally are now strongly in favor of the policy of permanently improving trunk line highways and placing the less traveled roads in the best possible condition by intelligent methods of improvement and maintenance. And this changed sentiment is rapidly being reflected in the improved condition of the roads throughout the state.

It is but a natural consequence that public spirited people of means should share a beneficent public sentiment of this kind, a fact which seems destined to prove a considerable factor in the future of the good roads movement. This kind of public interest was first shown in the development of the Lincoln Highway organization, in which Michigan men took such an important part. Another instance of the same kind of public spirit was shown in the organization and work of the West Michigan Pike Association, whose activities are certain to bring about the completion of a good road from the straits to the southern boundary of the state along the shore of Lake Michigan. Recently there has also been started a movement for a similar road down the east side of the state through Detroit to Toledo, the same to be a part of the "Dixie Highway," so called, the building of which from this point through St. Louis to New Orleans is now being approached by real promotion work under a plan for the use of otherwise unemployed labor in its construction. The latest development of this nature has for its object the building of a road of the most permanent type across the state from Detroit to Grand Haven, and steps looking toward the formation of an organization to take charge of the promotion and development work are already being taken.

In most if not all of these enterprises public spirited Michigan men of large means have become interested to the extent of offering substantial donations for each mile of road within definite limits, generally in the open country and outside the limits of any incorporated city or village. Liberal donations of this character will materially aid in the development of other plans, and hasten the day when good roads will be the rule

instead of the conspicuous exception in this state. It would not appear that our public spirited men of wealth could make a public contribution which would reflect more to their credit or contribute more to their satisfaction than one in the interest of good roads.

While many leaders in this line of public improvement work have deplored the slow growth of public sentiment for permanently improved roads, it is generally conceded by the well informed that this sentiment has grown quite as rapidly as has expert knowledge and practical experience in the building of good roads. Thus it is assured that Michigan people will get more for their money in the way of improved roads than would have been the case had the movement had a more rapid development, since less money will be wasted in experiment and in inefficient work, although that waste has not been small in some instances.

But on the whole, results have been sufficiently good to give added strength to the good roads movement from year to year and there now seems to be little reason to doubt that with the improvement in results which will come with increased experience the good roads movement will continue to expand until no apology will be required for our Michigan roads.

**Cleaning up the Plague.** Last month the United States Department of Agriculture addressed a plea to the farmers and live stock men of the country to co-operate with the federal and state authorities to put the finishing touches on the work for the eradication of foot-and-mouth disease in this country. The department officials regarded it as highly important that the hopefulness of the situation as regards the complete eradication of the disease should not lead to carelessness or unwarranted disregard of the seriousness of this most contagious of all live stock diseases.

The wisdom of this plea is evidenced by the continuation of sporadic outbreaks of the disease in widely separated but isolated sections of the country, which will be easily controlled if they are caught in time to prevent the spread of the infection over wider areas. So far this result has been attained, and it is most important that the public continue to regard with patience the continuation of quarantine regulations which are deemed necessary to this end and co-operate with federal and state officials in reporting any suspected new cases. In practically every recent case of sporadic outbreaks the infection has first appeared among hogs in a rather mild form and has not been recognized until neighboring herds of cattle became infected. In some of these cases at least the infection was traced to contaminated hog cholera serum which had been kept in cold storage for a considerable length of time and which was made before the present stringent regulations regarding its manufacture and distribution were put in force. In others it was thought to have been conveyed by some article which had come in indirect contact with the virus of the disease and was not suspected as a source of contamination.

It is because of the extremely contagious nature of the disease that continued precautions are necessary until these sporadic outbreaks of the disease have entirely ceased. That most of these have occurred in sections where the disease had not previously appeared speaks well for the thoroughness with which the work of eradication has been carried on. That the disease has been completely eradicated from Michigan seems almost an assured fact. Continued patience with the limited quarantines still deemed necessary in the large markets of the previously infected dis-

tricts and continued co-operation with the authorities in charge will make this a certainty in the not distant future.

While the appearance of the disease last year has been a serious handicap to the live stock men of the country, the loss has been infinitesimal as compared to the loss which would be suffered each year if the disease were not eradicated. In Germany in 1911 it was estimated that one animal out of seven which was susceptible to the disease was suffering from it. Let us support and aid the authorities in the final clean-up of this plague in every way, to the end that such a constant drain on one of our most important industries may be avoided.

### All Aboard for the State Fair.

On Monday, September 6, the State Fair will open with all the exhibits in place. While the Fair will continue until Thursday of the following week, thus giving opportunity for all to attend who are not able to get to Detroit during the first week of the show, yet the management has planned to make the programs of entertainment during the first week especially attractive to the farmers of the state and as the exhibits will then be at their best it will be the part of wisdom for all who can possibly arrange to do so to attend the Fair during the opening week. Among the special days will be State Grange Day on Wednesday, September 8, for which a special program is being arranged.

A feature of this year's State Fair which will be of especial interest to a large class of farmers will be the farm tractor exhibit, which will be a stronger feature than ever before. A feature of this exhibit will be a working demonstration of the latest models of gas tractors on exhibit. In view of the important part which mechanical power for the operation of farm implements is bound to play in the future of our agriculture it is important that the farmers of Michigan keep posted on the development of this class of farm equipment. Indeed, no farmer can be too well informed regarding the modern development of farm equipment of all kinds, and there is certainly no better place to study such equipment than at the State Fair, where implements of all kinds can be studied and compared.

A study of the live stock and farm crops exhibits is no less important if our agriculture is to be kept on a plane of maximum prosperity. In fact there are so many educational advantages offered at an exposition of this kind that it is impossible to enumerate them. Certain it is that the farmer who attends the State Fair with an eye open to matters of interest to him in his business will receive a direct benefit out of all proportion to the time and money expended in attending the Fair. The seasonal crop losses due to the wet harvest should be an added incentive to attend the Fair, rather than an excuse to remain away, since the helpful ideas gained at the Fair will aid in making up these losses in future years.

And besides there is the indirect benefit to every member of the family from the outing and entertainment which will be enjoyed at the Fair—a benefit which it is difficult to overestimate. The entertainment features which the management has provided are more attractive than those seen at any previous fair, and many of them will prove most instructive as well as entertaining. Altogether it will prove most profitable for any farmer to take a couple of days off and attend the State Fair with his family during the week of September 6.

While at the Fair call at the Michigan Farmer building, which is located next to the front entrance of the first building devoted to the cattle exhibit, where you will be most welcome.

### HAPPENINGS OF THE WEEK.

#### Foreign.

**The European War.**—Italy has declared war against Turkey, which act will likely move the Balkan states of Roumania and Bulgaria and possibly Greece, to throw their aid to Italy and her allies. Notwithstanding the favorable position which co-operation with Italy offers these states, Germany is making a strong bid for their help through her victories in Russia. Should Serbia cede to Roumania the province of Macedonia there is little doubt that this country, with the others, will go over to Italy and her allies to again take up battle against their old enemy, the Turks, that they might be in position to bid for additional territory after the war has closed, providing they are not dominated by the Austrians and Germans. The Russians are still unable to bring the great Austro-German advance to an end, and while territory is not being taken as rapidly as a fortnight ago there has been a steady pressing forward along the entire line, except in the district about Riga where the Russians are making a desperate stand. At this point some relief was felt by the Slavs late last week when the German fleet was driven from the Gulf of Riga after losing the superdreadnaught, Moltke, three cruisers, seven torpedo boats and four barges crammed with soldiers. The Russians lost two gunboats and a torpedo boat. Petrograd also announces that on the Black Sea the Russian destroyers have sunk more than 100 Turkish boats. Italy is continuing an aggressive campaign in Tyrol, Styria and Carniola and is reported as gaining minor advantages. The French and English Allied forces succeeded through a ruse in landing a large body of troops on the Gallipoli Peninsula where it commands the lines of communication between the Turks who are defending that body of land and Constantinople. It is estimated that the Turks have 100,000 soldiers operating at this point, all of which are threatened by the success of the Allies. In the western theater there are no changes of importance. The German submarines have been active recently and in two days sunk 14 ships, among them being the steamship Arabic which was enroute to America and had Americans aboard, two of whom were drowned.

Mexican affairs remain in confusion. General Carranza is about to establish his government in Mexico City and for this reason it is expected that he will continue to frown upon the proposals of the Pan-American peace appeal. General Villa has retaken Durango without fighting. Jose M. Cordoso, Brazilian minister to Mexico, has arrived in Washington to confer regarding conditions in that country.

#### National.

United States exports for June exceeded those of June, 1914, by 70 per cent. The increase in manufactured articles exported increased from \$90,000,000 to \$150,000,000 and foodstuffs from \$31,000,000 to \$72,000,000.

A terrible wind storm swept over the country from Galveston, Texas, to the north last week and resulted in many persons losing their lives and much property damage. At Galveston nearly 100 persons are believed lost and extensive public works were totally or partially destroyed, while in St. Louis, Mo., 15 square miles of territory was covered from one to 20 feet deep with water from a drenching rain that aggregated 6.7 inches in 12 hours, a new high record for that district. All kinds of traffic and communication was put out of commission. At Alton, Ill., the levees broke and the rushing waters wrought much damage to houses and other buildings there and at Benbow City. The storm was felt as far north as Detroit, but practically no damage was done there except the injury to crops through the additional fall of water onto the already water-soaked soil.

It is estimated that fully a thousand residents of Michigan took advantage of the offer of physicians to examine persons for tuberculosis free of charge on Friday, August 20, the day having been designated as Tuberculosis Day by Governor Ferris.

The designation of the Sunday preceding Labor Day as Thrift Day was asked of President Wilson and the governors of the states by the first international congress for thrift, in session at San Francisco.

An entire passenger train was thrown from the tracks at Smiths Creek, Mich., last Saturday night, and but for the steel coaches many would have been seriously injured. As it was, but one death, that of the fireman, resulted. The soggy condition of the roadbed due to heavy rains, is given as the cause of the catastrophe.

The assembling of 1,300 Italian reservists, who were to sail from Boston, was marked by a demonstration against the two interned German ships, which resulted in the German sailors being stoned and several police being injured.



## Importance of Good Seed

**P**ERHAPS the truest index of good farming, is found in the condition of a farm as regards noxious weeds. As a general thing, the manner in which a place is kept up, the condition of the dwelling and out-buildings and fences, marks with certainty the tidy or slovenly farmer. But these signs sometimes fail, for there are some excellent tillers of the soil who let the buildings and fences go at loose ends. But when the milk week, the mullein, the burdock and the thistle lord it over the corn field and the meadow, the sign is unmistakable. It is a fight in earnest, to keep down these pests, but the best farmers are those who have declared everlasting enmity against them.

In close relationship to this question of weedy fields, comes another question, not less important—that of good seed. Indeed, the farmer who is careless in regard to the kind of seed he plants, is apt to be slovenly and careless in regard to the kind of crop his fields produce. Something is being said, these days, about the importance of good seed, and the subject cannot be dwelt on or emphasized too strongly. Many a farmer harvests but half a corn crop simply because he was not particular enough in selecting and caring for the seed. Many a farmer reaps smutty oats or digs scabby potatoes because he has taken no step to prevent these maladies by well known means. Many a meadow produces a crop of foul weeds because the man who purchased the clover seed cared more for the dollar less per bushel than for pure seed.

In considering the subject of good seed, the writer has in mind a case in point: A farmer whose acres are broad and whose methods are supposed to be modern, purchased a large quantity of clover seed, full of buckhorn. The farmer was not deceived. He knew the noxious seeds were there but he also knew the clover seed which contained the undesirable stuff could be purchased for a couple of dollars less than the price charged for pure seed. In a day when the fight against noxious weeds is becoming strenuous, it seems almost unbelievable that any farmer would pursue the above named course. And yet, this is only one case among many. Pure seed laws are a help, but they cannot do everything. When men will buy contaminated seed with their eyes open, simply because it is cheaper, laws are of no avail. When poor or impure seed is planted, it is not the man who plants them alone, who suffers. The man who is careless about the kind of seed he plants, often produces an undesirable crop which sows itself unbidden, over the fields of his neighbors.

In addition to the matter of noxious weeds, carelessness in regard to seed means always, an actual loss to the grower. The weeds in a meadow diminish just that much, the amount of good hay. The seeds which do not come, in a corn field, diminish just that much, the prospects for a good crop. In the case of corn, it not infrequently happens that the entire crop is a failure because of poor seed. The corn does not come the first time it is planted, and the grower either plants more of the same or procures some from a neighbor who has been as careless as himself, and the second planting is also a failure. By this time, the season is too far advanced to insure a crop, no matter how good the seed may be. Lack of proper care in drying the corn saved for seed is generally the cause of such failures. It is an index of good management and good farming, when a man selects his corn for seed with care and looks with just as much care to its curing. And just as surely is it a mark of slovenly and inefficient farming when a man is careless in regard to this matter. Find

the farmer slovenly about corn for seed, and it is safe to predict for him weedy corn fields and a poor crop.

In concluding this article let it be said that in this section a hopeful and healthful sign may be seen. In a movement previously mentioned in these columns may be found a partial remedy at least, for delinquency in regard to the planting of good seed. A local experiment association has been established and pedigreed seeds have been sown this year for the first time. This association has a good-sized membership and in its work will be an educator. But with this as with everything else, the benefits creep slowly to the men who need them the most. As a rule, the farmers who belong to this association are wide-awake and realize the advantage and necessity of the best of seed. It is some of the men who stand outside the association and who fail to grasp its significance, who would profit most from its benefits. The fight for good seed, like all other movements, affects least those who need to be stirred the most. However, it is made more plainly manifest each year, that good seed and profitable farming are inseparable. The farmer who knowingly brings foul seed into his neighborhood is a poor friend, not only to himself, but to his neighbors.

Hillsdale Co.

J. A. KAISER.

### SOIL DRAINAGE.

(Continued from first page).

hand labor the services of an engineer unless the work is very extensive or complicated, can be dispensed with. Beginning at the outlet at a time when there is water sufficient to run the grade can be carried by the ditches fully as well or better, than where dependence is given to measurements, as the flow of water will guide the fall, care always being taken that no depressions are left, as where these occur, silt will fill them to the level. The depth of ditch, where the fall will permit, should not be less than three feet. Four feet will draw water farther but in tenacious clay soil its operation will at first be slower.

After a ditch has been in operation for a year or two the action of water flowing to it will establish little channels after which the water will be more speedily carried away and the general porosity of the soil will be greatly increased.

The distance that tile drains should be apart, will depend upon the character of the soil and depth of the drain. Where laterals are used, these should not enter the main at right angles, but at an angle of 45 degrees toward the outlet. It is important that good judgment be exercised in obtaining tile of adequate size. When the mains are of five or six-inch tile, laterals of three-inch tile will usually prove satisfactory.

It is well to see that the outlet be well protected with wire screen or some other means, as muskrats, rabbits or other animals may enter the tile and die, causing an obstruction of the drain.

New York.

B. F. MACK.

A rat is helpless without a hiding place and a safe retreat in which to rear its young. The more places there are around the farm buildings to serve as harbors, the more rats there will be to contend against. Loose piles of boards or rubbish always harbor large colonies of rats. If the rubbish be burned and the sound material is laid on supports about a foot from the ground, so as to admit the light beneath the piles, the rats will not tarry long. The same rule applies to small buildings which do not have concrete floors. Place such buildings on pillars and the rats are disconcerted.

## Don't Shoot Your House Full of Holes

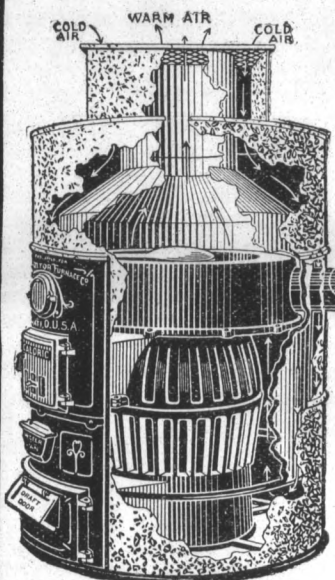
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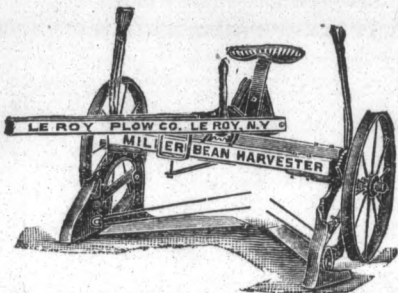
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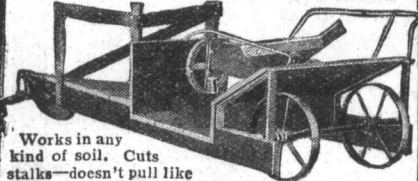
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## Saving Farm Seeds

**A** GREAT many farmers select their seed grains at the time they want them to plant but this practice will never succeed in raising the standard of farm produce in America. One can readily see that this method of selection will usually result in the planting of the culls.

I know a farmer who makes a specialty of raising early potatoes. He saves his own seed and plants it for five or six years and after that time, he says his potatoes are "run out," that is, they have become so late that they are worthless as seed for the early crop and a new variety must be secured. The phenomenon of his seed running out in five or six years is due to the fact that when potatoes first come on the market, he goes through the field and digs the early maturing hills. A little later, this procedure is repeated and so on until the market for early potatoes is gone. From the potatoes yet remaining in the field (which are really the latest of all) he selects his seed. Thus we see that each year he keeps selecting the latest of the potatoes until in four or five years the variety has become the equivalent of any late variety, and new seed is the mandate.

**Best to Select Seeds While Plants are Growing.**

The time to select farm seeds is while the plants are growing. This gives the farmer a chance to judge of the merits of each plant. Had this early potato grower saved for seed those hills which matured the earliest, in four or five years he would have had a variety maturing somewhat earlier than his initial seed instead of having to purchase new seed. Again, in saving seed from the grains, it is just as important that we save the seed while the grains are still growing as it is that we follow this procedure with other crops. At this time when there is such a bumper crop of wheat is the time to save the seed instead of running to the neighbor's next spring where we will not get the best of seed. The individual plant is the basis of selection in the grains as in all other plants.

The question which confronts us is: How can we tell those plants which will give us the most desirable seed? With the grains, it is not so much a matter of obtaining plump seed as it is to get seed which will develop into plants capable of obtaining the greatest possible amount of plant food from the soil. Should we go into a wheat field and pick out the plants which are growing the rankest, the chances are that we would not obtain the best seed because these plants have had a greater amount of fertilizer and hence plant food with which to make this rank growth. That "the child of adversity develops its latent powers" is just as true with plants as in the animal kingdom. The wheat plant which is grown on the poorest portion of the field undoubtedly has developed a hardihood which is not possessed by the wheat plants growing on the richer portions of the field. Unquestionably, it has developed a greater root system and a stronger leaf surface and so its seed will give us the highest yield when put in favorable conditions. That portion of the field which looks the most promising for seed should be so marked that it may be kept separate from the others when it is threshed. This will give a basis for next year's crop.

**Clean Separator Thoroughly Before Saving Seed.**

I have heard the expression, "My seed wheat has run out." By this, it was meant that the wheat had become so full of undesirable and unproductive varieties that it had become unfit for milling purposes, to say nothing of seeding. It is not that the wheat has run out of itself, but rather that it has become mixed by the threshing ma-

chine and other agencies. The separator is one of the greatest factors of farm seed contamination that ever roamed the country and probably contaminates more farm seeds than all the other agencies put together. The separator in going from one farm to another collects foreign wheat and the first few bushels that are threshed out are not pure, but are a mixture of your grain with an inferior grain, usually. The first ten or twelve bushels should be put into the bin. They have served to clean out the machine. After that the required amount of seed wheat or seed grain should be sacked and put away in the granary where it cannot be destroyed by mice or rats.

What will the harvest be? The harvest will depend more upon the seed than any other factor, for we cannot expect to reap what we do not sow. If we sow contaminated seed, we surely will not harvest pure seed and so it seems that the utmost precaution should be taken in saving seed for the next year's crop.

Ingham Co. I. J. MATHEWS.

## PLOWING FOR DRAINAGE.

In plowing untilled land it is important to do so with special reference to drainage, especially so if the field is of heavy clay and quite level. How to plow so as to best accomplish this end must necessarily be a question for local consideration. In general, it is better to plow parallel with the slope as this gives the water a freer vent than if it has to drain crosswise over the furrows.

The marking of the field into quite small lands is the most natural solution, but is objectionable for the reason that it makes too many cross ditches to run over in mowing and reaping. So, too, the turning of the furrow away from the fence or outside will give a better watercourse than in doing the reverse, but it cannot be continued indefinitely for in time it will cause too great a ditch. Perhaps the most satisfactory method is to plow ten or twelve furrows around the lot and then mark out the field by throwing up ridges 30 to 50 feet apart according to the lay of the land—the distance being less if the ground is very flat. Then when the harrowing and seeding have been accomplished go over the field with a plow, making furrows along the lowest places so that the surface water will readily pass off.

On one of our fields, twenty acres in extent, there is a depression near the center with the land sloping toward it from both sides and the water running to the westward. I have carefully cut a ditch through this winding depression and dredged it out with a wheel road scraper. The edges of the ditch have been trimmed on both sides so that the slope is quite gradual, allowing machinery to pass over with little jar. As stated above I used a big four-wheeled road scraper in dredging and grading the ditch, but there is a smaller and much cheaper tool on the market which presumably will do the work equally effective. It can be had for about \$30.

In plowing, avoid wide headlands unless they are on very steep ground. By throwing up a ridge between two lands and plowing on both, the individual headland will be avoided. I have seen farmers hitch to a sulky plow and drive clear around an oblong ten-acre field and make rapid progress by reason of little turning for the amount plowed. But I never noticed very good results from such plowing unless intended for permanent meadow or pasture. A field plowed in this way would leave but one short ditch in the middle and all other necessary ditching would have to be laboriously worked out—more likely neglected.

Of course, the draining cannot be

done with the plow or other implement. A perfect ditch requires more or less labor with spade and shovel, but for economy's sake this labor should be reduced to the minimum. Ohio. H. E. WHITE.

## ALFALFA INSURANCE.

There has been so much written about alfalfa, so many questions asked, so many theories advanced, that it seems as though everything had been said.

Alfalfa seems to be the "scare crop" of the average farmer, simply because he has heard that Smith or Jones had failed in getting a catch he imagines he can not raise it. Now, I always take a little pride in overcoming an obstacle that my friends fail to meet. I believe it was this that first induced me to try alfalfa and kept me from getting discouraged after making several failures, but I am now convinced there is no such thing as failure in getting a stand of alfalfa if you go at it right. In fact, I am thinking of issuing "Alfalfa Insurance" to parties who follow my method. To raise alfalfa I select a good field and put on about 15 loads of stable manure per acre and plant it to corn; after the corn is planted I spread on not less than two tons of lime per acre. Keep the corn clean and just before cultivating it the last time sow it to rye and vetch. This is plowed under about June 1 and the ground harrowed each week until August 1, then inoculate your seed and sow to alfalfa and if you do not get a good catch you can draw on me for all the expense. By handling your ground in this way you have killed out the June grass which, in my opinion, is the greatest enemy alfalfa has.

Mecosta Co. F. H. BEACH.

## WHEN TO CUT SOY BEANS FOR HAY.

Early in the summer there were several articles printed in regard to soy beans, and as I needed something of that kind to feed cows for roughage, I sowed broadcast nearly an acre. Since then I have watched closely to see if there were not other articles on the subject dealing with the handling of the crop when cut for hay. What I would particularly like to know is when to cut. In the blossom or at what stage of ripeness?

Berrien Co. G. E. K.

All legumes contain the largest per cent of digestible nutrients at about the time their pods are nicely formed. After this the nutrition is gradually concentrated in the seeds. Therefore the straw is not as rich a food as the seeds, but before the seeds are formed the nutrition is distributed all through the plant. Hence cut the soy beans for hay when the majority of pods are nicely formed and before the beans are of any size.

The stalks of this plant are so thick that it is rather slow to cure for hay. It must sometimes be left in the swath for a day or two, but like clover and alfalfa should not be left in the swath longer than absolutely necessary, for many of the leaves will dry up and drop off. Just as soon as possible rake it up and put it into cocks and cure it there and a much better quality of hay will be secured.

COLON C. LILLIE.

At the Ontario station, 100 lbs. of meal when fed to 40-lb. pigs, proved equal to 406.9 lbs. of skim-milk and to 37.6 to 48.5 lbs. of tankage, depending upon the grade used. The skim-milk was fed in the proportion of about one and a half pounds to one pound of meal, the tankage one pound to about six pounds of meal.

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## Pasturing Work Horses

THE horse needs a variety of food the same as man. Some farmers think that if there is plenty of corn or oats and hay on hand, that is all that is needed for work horses, but such is not the case. There is great dietetic value in variety in any ration.

Scores of horse feeders have learned from experience that a steady diet of dry feed is not necessarily the best for farm work horses in summer, and it is now the custom of the majority of farmers to turn their work animals out to pasture every night, as well as on Sundays, when the weather remains warm and comfortable. And it may be said that nothing but good results come from the pasturing when it is done systematically and the horses are performing their regular work, whether on the road or on the farm.

The belief is quite prevalent among city horsemen that horses which are set at severe work will be soft if allowed any grass. The experience of most farmers disproves this belief, however, as long as the work demanded of the animals is not out of the ordinary. That horses on grass sweat more freely than those which are given dry feed only, is true, but this does no harm. The horse that does sweat freely while at work is the one that is the least tired when night comes. Grass has always been and is yet the

er is so cool that it is not conducive to a comfortable rest for the animals in the pasture field. But after the nights become warm and comfortable it will generally pay to turn the work horses out every night. They will rest far better in the pasture field than is possible in a hot stable, and the grass which they eat will do them good.

Indiana.

W. F. PURDUE.

### ECONOMY IN FEEDING

There is a great deal of feed wasted on the average farm each year but so little is lost at a time that we seldom notice it. If we would take the time to count up what is knocked out of the troughs by the animals and trampled under foot in one month's time we would be so surprised at the large quantity that we would all take steps to be more careful in the future.

One of the most common ways of wasting feed is to feed it upon the ground when the surface is wet or soft. Feed scattered about in this fashion will soon be tramped upon and buried under the mud. Pigs, especially, are wasteful of feed given to them in this way, but many feeders have realized the loss and have prevented it by building concrete feeding floors which will not only pay their cost in the feed they save in a few years but enable



A Bunch of Steers Fed by T. M. Warren, of Sanilac, and Sold at \$8 per cwt.

horse's natural food and medicine. It is easily digested and hence it regulates the stomach. Not only does it induce the horse to sweat freely, thus opening up all the pores of the skin so that poisonous substances are eliminated readily from the body, but the grass moves the bowels and flushes the kidneys, thereby keeping those organs in an active condition. It is therefore but natural that, under all ordinary circumstances, the farm horses should perform their work fully as well, or even a great deal better, on grass as when kept stabled all the time during their leisure hours, providing only that the pasture is not relied upon too much. A good ration of grain must be given at all times in connection with the pasturing. Even on idle days it is advisable to get the horses up mornings and evenings and give them a small feed of grain and a small quantity of well cured hay.

If the work horses are given access to pasture at all, they should be turned out fairly regularly. Animals that are kept on dry feed all week will eat more grass than is good for them if allowed their liberty all day Sunday. A field containing a good growth of grasses is to be preferred for night pasturing. An animal that does a day's work should have a reasonable amount of rest at night and not be forced to work extra for its feed. It hardly pays to pasture at night until the nights are warm and comfortable. Early in the season the grass is short and tender and contains little nourishment, and at the same time the weather

the quarters to be kept in a more sanitary condition.

Feed may be wasted when it is fed in the mangers in excess of the animal's needs. This is a loss that is easily preventable, for the feeder if he is observing will know just how much the animal will eat up clean.

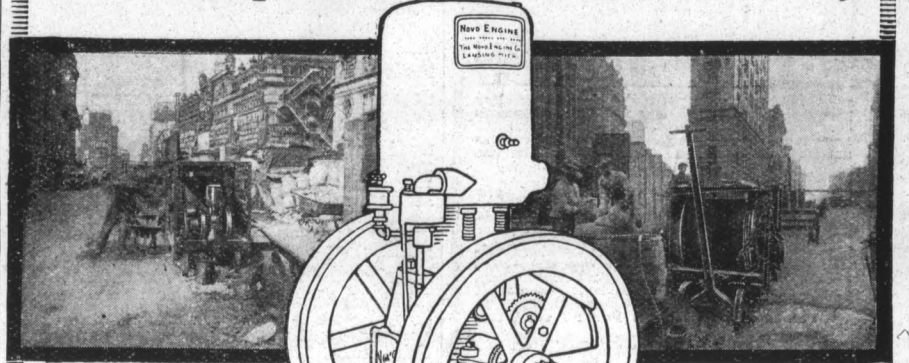
There is often danger of over-feeding animals to the extent that so much material is taken into the system that some of it is not properly assimilated or wasted. There is a wide difference in animals in the manner of consuming feed. Some will stop when the stomach is full and wait until there is a call due to the needs of the body for more feed, while others will not wait but seem to delight in continually eating or nibbling at their food. Many horses have this latter characteristic and it acts as a detriment to the well-being of the animal.

If the horse continues to eat after the stomach has been filled, the material already in the stomach will be forced on into the intestines before digestion has been completed. The feed will in this way not only be wasted but some of the energies of the body will be taxed to dispose of the excessive amount and the horse will be injured instead of being benefited by the good intentions of the feeder. The practice of feeding large quantities of rough feed, as dry or musty hay or fodder, should be strictly guarded against, as it produces the condition that usually results in indigestion and in the end may bring on heaves.

Indiana.

C. H. WHEATLEY.

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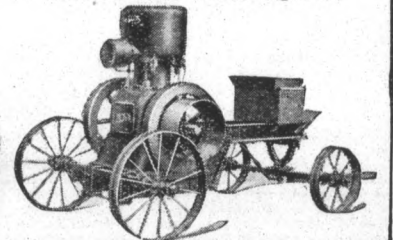
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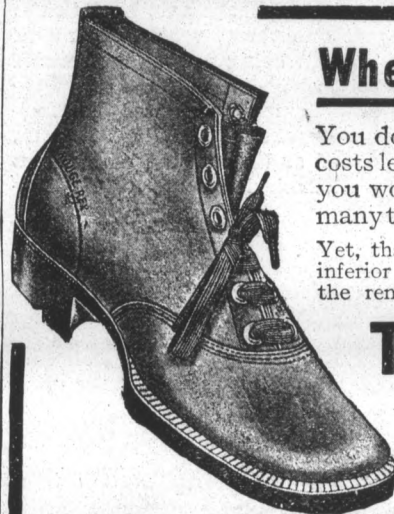
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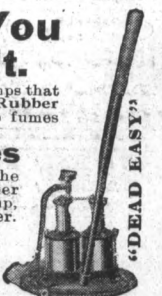
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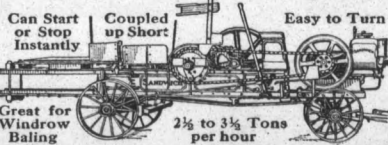
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## Summer Meeting of State Fruit Growers

THE weather man was good to the fruit growers on August 12. He really ceased in indulging in his bad habit of furnishing excessive moisture about nine o'clock of that day so that the fruit growers of the state could get together for their annual summer meeting at Amos Tucker's fruit farm, midway between South Haven and Fennville. That the fruit growers were determined to get together was evidenced by the fact that nearly 250 of them gathered at this farm eight miles from a railroad, but in one of the best fruit districts in this state, if not in the country. This is not idle talk, for we have it on good authority that this section gives as great returns per acre, considering the investment, as any farming section in the United States.

As is the usual custom at these summer meetings of the State Horticultural Society the morning and early afternoon were spent by the members in looking over Mr. Tucker's extensive farms and visiting other prominent fruit farms in the vicinity, either in their own autos or in those furnished by the local fruit growers.

### An Impromptu Program.

After partaking of a sumptuous dinner furnished by the ladies of the U. B. Church, who were kept busy taking care of the unexpected large crowd, the meeting was called to order and two hours of impromptu talks by some of the more prominent fruit growers were enjoyed. The first one called upon was none other than Prof. W. A. Taylor, chief of the Bureau of Plant Industry in the Department of Agriculture at Washington, D. C., who is a native and former school teacher in that part of the state. He commented upon the large attendance upon such a threatening day and upon the presence of so many young people. He stated that at the last meeting of the State Society he had the privilege of attending 26 years ago, he was the youngest one there, practically all of the members being over fifty years of age.

Genial Thomas Gunson, of the Horticultural Department of the M. A. C., entertained and instructed his hearers in his characteristic way of dispens-

ing cheer and serious thought. He has rightly been given the lion's share of attention by the fruit grower as its improvement has been responsible for the rapid development of the fruit industry, but now that it is developed to a high state of efficiency and as there is much need for a better understanding of tree growth, the latter will be given the most serious attention in the future.

R. J. Coryell, of Birmingham, who was one of several who drove across the state to attend the meeting, told of the fruit prospects in the eastern part of the state and said that the fruit industry there was increasing on account of the accessibility to the Detroit market.

### Fruit Conditions in New York.

Prof. H. J. Eustace, in giving a report of the crop conditions in New York, said that the peach crop was a large one and that sales were being made at a cent and a half a pound, the growers furnishing the baskets. Winter apples are about one-fourth of last year's crop and fall apples about one-half. Pears and grapes were very light. The apple growers there were holding for \$3.50 per barrel.

George Friday, of Coloma, said that he was glad he was a farmer, on account of the spirit of co-operation among them. In other lines of business everyone was trying to get the best of someone else, but farmers were always ready to give their fellow men the value of their experience.

Luther Hall, whose Northern Spy orchard at Ionia has made him famous, urged individual effort rather than co-operation as a solution of the problems of the Michigan fruit grower. He doubted whether we could meet the competition of the west by co-operation. He said that we had them beat on quality but we lacked the energy they display in selling.

That soil fertility and the regulation of the growth of the tree would to a great extent take the place of spraying as the thing foremost in the fruit grower's mind was the thought expressed by F. A. Wilken. Spraying

starting of the autos was the prevailing noise, as it was late in the afternoon. The only regret that the visitors had was that the day was too short.

Mr. Tucker's farm, which consists of about 200 acres, has an ideal location for fruit purposes, being situated on a ridge between South Haven and Fennville upon which several other successful fruit farms are also located. The air and water drainage is ideal. The soil is a sandy loam with clay subsoil which makes an ideal and easily worked fruit soil. Almost the entire farm is set to fruit, the chief crop being cherries, although there is also good acreages of apples and plums. During the cherry season just past Mr. Tucker harvested 5,000 cases of cherries, with a loss of less than ten.

Mr. Tucker can truly be called a self-made man. He is a product of the section in which he now lives and his success is due to his persistence and energy. His faith in fruit growing is responsible for his enlarging his operations as rapidly as he could. An indication of the fact that he is and will continue to be a progressive fruit grower is the fact that after 24 years of successful fruit growing he attended the short course in fruit growing at M. A. C. last winter in search of the very latest in his line.

### TROUBLE DEPARTMENT.

#### Cherries Fail to Ripen.

Can you or any readers of Michigan Farmer, tell me what is the trouble with my cherries? I have several trees of Montmorency's that do not ripen like the other trees. They are pink in color and have a bitter taste like a half-ripe cherry. Is it a disease in the cherry like the yellows in the peach? Will I be obliged to cut down the trees? E. J. B.

With no other symptoms given it is hard to tell what the cause of the failure of the cherries to ripen is. The writer has seen occasional cherries which did not mature from the lack of proper pollination at blossoming time, but not entire trees.

The cause may be mal-nutrition resulting from the restriction of the sap through an improper graft union or from winter injury. The tree may not be a true Montmorency but some other variety which ripens later. It is not an uncommon occurrence to have trees prove not true to name. The fruit, foliage and the general shape of the tree should be compared with that of the trees you know to be the Montmorency. Fungous troubles may also be a probable cause. The leaf blight, which is indicated by a premature dropping and yellowing of the foliage, might have some effect on the ripening of the fruit.

Although from the description given we cannot tell definitely what the trouble is, you can rest assured that it will not be necessary to cut down the trees to prevent the spread of the trouble as the cherry tree is not affected by contagious diseases like the yellows in the peach.

#### Pea Weevil.

How should I care for pea seed? Every spring my seed is badly eaten into by a little bug which bores little round holes into the heart of the peas. Van Buren Co. A. A. P.

The insect which is attacking your pea seed is the pea weevil or pea bug. This is a small brownish black beetle which lives in the peas through the winter. The beetle escapes from the peas in the spring and lays its eggs in the young pea pods, the grubs living on the growing peas.

The best way to control this insect is to keep the peas for seed purposes for two years, so that when they are used for planting purposes they will be entirely free of the weevil.

Fumigation with carbon bisulphide is sometimes also used for eradicating the insect, but where one has only a small amount of seed, this is rather inconvenient.



A Cover Crop is Especially Beneficial This Year in Checking the Growth of the Tree and Maturing the Wood.

ing cheer and serious thought. He spoke of the improvement in the farmer and farming during the past 25 years, stating that the world's opinion was becoming such that the brightest boy was now glad to stay on the farm instead of going to the city, as was the case in the past.

### The Marketing Problem.

After several things pertaining to the financial status of the society were introduced by Secretary Smythe, and commented upon by several members and the announcement of the annual meeting at Grand Rapids, December 7-8-9, 1915, was made, C. B. Cook, farm adviser for Allegan county, spoke of the value of looking over the farms

has rightly been given the lion's share of attention by the fruit grower as its improvement has been responsible for the rapid development of the fruit industry, but now that it is developed to a high state of efficiency and as there is much need for a better understanding of tree growth, the latter will be given the most serious attention in the future.

### The Farm Visited.

After resolutions of thanks to Mr. and Mrs. Tucker were presented by Mr. Edward Hutchins, Mr. Tucker was called upon and expressed his appreciation of the large number that had gathered together. The meeting was adjourned and immediately the



## Dairy.

LILLIE FARMSTEAD DAIRY NOTES.

That an excess of protein in the ration fed for some time continuously, will work a detriment to the breeding powers of a dairy herd I am more and more convinced. A few months will make little difference to be sure, but continue the practice for several years and the number of shy breeders will become alarming. Discontinue the practice and after a few years there is no more trouble about producing calves. It is the superabundance or excess of protein (nitrogen) in the ration that does it, in my opinion. Several years ago I used to purchase cottonseed meal in carload lots and feed it pretty liberally. We also always had clover hay and I am confident that from the standpoint of reproduction we fed an excess of protein. We had trouble in getting cows with calf. Too much protein interferes with the normal process of reproduction. This protein will create energy and growth and will force cows to do their best in producing milk, but if continued for any considerable time in excessive amounts it will check reproduction.

Nitrogen for plants does the same thing. If the nitrogen is in excess of the other food constituents the plant makes a luxurious growth in stem and foliage but it does not fruit so well. Corn grown on a soil having an excess of nitrogen produces wonderful stalks and leaves but it is deficient in leaves, and in many instances there are no leaves at all. Balance the food constituents of the plants and their condition becomes normal. There is a growth of ear to correspond to stalk and leaf. It is the natural way of the plant and the animal as well to reproduce itself and it will do so when grown under proper conditions.

Ordinarily this idea of feeding protein to animals or nitrogen to plants in excess of their requirements is not up for discussion. Ordinarily or usually there is a lack of protein in the ration for best results and a lack of available nitrogen in the soil also. The farmer is prone to get along with what he has, and the ordinary feeds grown on his own farm are not rich enough in protein to furnish it in sufficient quantities to enable a cow to do her best. That is the idea that should be preached throughout the land. Only once in a while is the protein or nitrogen proposition overdone. But when it is overdone it causes a serious loss. Now that so many are growing splendid crops of alfalfa they must be cautioned not to feed too abundantly of concentrates that are very rich in protein. If they do for several years at a time they are, in my judgment, sure to interfere with the process of normal reproduction in their herds. Don't stop growing the alfalfa. It is the cheapest source of protein by all odds. The rational thing to do is to not feed so much cottonseed meal or oil meal, with the alfalfa, but rather feed a little of these foods and more corn meal, barley or oats, and you will cheapen the ration and keep the cows in a more normal condition.

Referring to L. C. Drake's criticism of my statement that butter-fat could be produced for one-half of 28 or 30 cents per pound, I presume I should have explained more fully at the time. I was answering the question of the actual cost of butter-fat, and did not intend that anyone should think I thought one could afford to produce butter-fat at 14 to 15 cents per pound. That would be the actual cost under quite favorable conditions and would not include any profit. Simply the actual cost of production.

No one can afford to sell butter-fat

at actual cost. We must have a fair margin of profit or we can not live and do business long. The farmer must begin to figure this margin of profit above cost of production. It is high time he did. But first he must have a fairly correct knowledge of what the actual cost is to him. One trouble is that this cost varies greatly with almost every herd, depending on the quality of the cows, on the care they receive, and on the cost of feed. The farmer can lessen the cost of production very materially by growing better crops, because good crops furnish cheaper feed. He can also greatly influence the cost by growing the right kind of crops, or those best suited to feed the cows, and he can also cheapen his ration by growing a cash crop where the waste or by-product can be utilized as a food for the cows, like sugar beets, peas, soy beans, etc.

I think my statement is true that butter-fat can be produced at 14 to 15 cents per pound, but this figure does not have profit enough so one could afford to stay in the dairy business. In my judgment dairy prices are none too high now to furnish a fair profit.

### WILL DAIRY FARMING PAY?

I would like to ask your advice in regard to putting in a milking machine. Am putting in 20 cows, putting up a 14x30 tile silo and making butter and selling it to private customers. I have 120 acres of land, plenty of barn and stable room. Have the engine, separator and dairy room. What I would have to purchase would be the silo, milking machine, some more cows, churn, and stanchions. I would aim to raise my own feed, veal the calves, keep sows and raise pigs. Would this undertaking be practical? What kind of cows would you advise? I am thinking that this would enable me to keep a man the year around. What should be the net and gross returns from such an undertaking? I would aim to work into a registered herd in time.

Dairy farming has paid, it is paying and it will pay. Dairy farming has lost, is losing and it will lose; it all depends on the man, and dairy farming is no different in this respect than any other business. The man is the important factor. In other words, the man makes the business. Now admitting this, how can I answer the above question with any degree of satisfaction. I am satisfied a lot of men are losing money with cows today and I am satisfied a lot of them are doing well. Some are making a fair thing of it, while some are deriving a splendid income.

The right kind of a man will have profitable cows. The kind of breed does not matter so much. There are good and poor cows in all breeds, but the good business man will weed out the poor of any breed and keep the good.

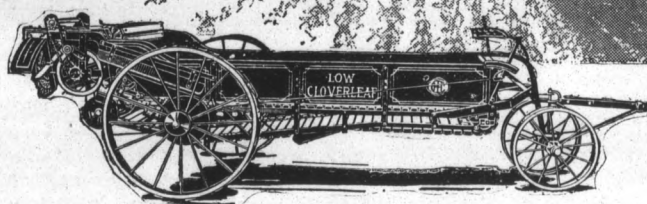
The right kind of a man will feed his cows liberally of economically produced feed and he will have a silo. He will care for them properly and breed them properly, and gradually improve his herd year by year, and there seems to be no limit to this, at least the limit has not been reached as yet.

The milking machine is proving to be a success, but it must be properly handled. Anyone who can not succeed in getting his cows properly milked by hand should try the milking machine.

Hogs are a proper auxiliary of butter-making. In no way can the by-products be used to better advantage. W. P. has the right idea, any dairyman can see that. If he is an executive, a good business man, he will succeed.

Selling butter to private customers is almost a business by itself. You must have the market close to hand and you must be able to manufacture gilt-edged butter and give proper delivery and be a salesman besides. Really, furnishing butter to private customers might be separated from dairy farming. It is a separate business, but one man can handle both.

GRAND PRIZE  
WINNER  
AT  
SAN FRANCISCO  
EXPOSITION



## International Harvester Manure Spreaders

"MOST machines handle crops—the manure spreader produces crops." There is a lot of food for thought in that sentence. When you have crops ready, you need machines for the harvesting, but before you can have crops you must have fertile soil. Your yields depend on how well you fertilize the soil.

In the choice of a spreader—your crop producer—you cannot be too careful. Avoid all chance of going wrong by choosing an International Harvester spreader—Low Corn King, Low Cloverleaf, or Low 20th Century.

IHC spreaders are built from careful designs based on rigorous field tests; strength in every part makes them last for years; they can be had with an attachment spreading 8 feet wide or more; they are low for easy loading; narrow for easy handling in yard, stable and field.

If your local dealer can't show you an IHC spreader, write us for our booklet "Why You Should Use a Manure Spreader," and when we send it we will tell you where you can see the machine. Don't buy until you have seen an IHC spreader.

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30 Days' Free Trial. Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save half.

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Roof Open and Filled with Ensilage  
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### Harvey Bolster Springs

The standard springs of America since 1889. Make any wagon a spring wagon. Prevent damage to eggs, fruits, etc., on road to market. Soon save cost—produce brings more—wagon lasts longer—easier for driver—easier for horse.

Made Like Finest Auto Springs  
Highest grade steel. Very resilient and durable. All sizes—fit any wagon up to 5 tons capacity. If not at dealer's, write for circular showing how Harvey Springs save money.

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### Ditching Made Easy

with this common sense farm ditcher and road grader. No wheels or levers. Nothing to get out of fix. Simple—Practical.

Price only one-fourth of big machines. Does same work. Soon pays for itself. Write for full information and introductory proposition.

Owensboro Ditcher & Grader Co. Inc. Box 830 Owensboro, Ky.

### BUSHEL CRATES

Made from Elm timber. Knocked down or nailed up.

### APPLE BARRELS

Standard Size—Well Made.

Struthers Cooperage Co. Romeo, Michigan

### NOTICE!

Write to the Humane Stanchion Works for literature for the latest improved stanchion.

HUMANE STANCHION WORKS, Baraboo, Wis.

### GASOLINE LAMPS

Agents wanted to sell our lamps and mantles. Grand Rapids Novelty Co., 549 Woodlawn St., Grand Rapids, Mich.

When writing to advertisers please mention the Michigan Farmer.



## Practical Science.

### FERTILIZER CONTROL LAWS AND THEIR ADMINISTRATION.

(Continued from last week).  
Administration.

My experience has been that while a great deal of stress is laid on the provision of inspection laws, but little attention is given to that equally important subject—their administration; and yet it must be apparent to all that unless the administration of a law is reasonable, the object for which it was enacted cannot be attained.

The question of the proper administration of such laws must in the very nature of things depend to a large extent on local conditions of the state as regards the departments and machinery available for securing the best results. Even from states where the appointment of the administrative officer depends on political preference, I think there could be no valid objection to the statement as far as possible the administration should be removed from politics. A man's political affiliations are certainly no criterion of his ability to formulate, administer and enforce an inspection law. To no one is it more important than to manufacturers that all connected with inspection departments, from the chief to the helper, be selected for their fitness and training for the duties to be performed.

The head of an inspection department must, in the nature of things, be given considerable discretionary power, and hence should realize to the fullest extent the importance of the position assigned him.

In his role of arbiter between the manufacturer, agent and consumer he should view all questions from an impartial standpoint, considering equally the rights of all parties to the transaction. To accomplish the best results it would seem essential that he have personal knowledge of all the work covered by inspection. In addition he should have a genuine love and interest for the work and a sincere desire to make the law beneficial to all concerned.

Rulings should be made only after the fullest investigation from all standpoints and the assumption of arbitrary powers should be carefully avoided. The head of an inspection department should be firm, but he should never hesitate to change his decision when shown to be in error.

#### The Staff.

The staff of an inspection department should all be persons of unquestionable integrity, with a thorough training in their special line of work. The employment of chemists or inspectors in control work who have not had special training does not seem to me justifiable when the importance of correct results is considered, nor do I believe in the majority of cases without such special training are they competent to do justice either to consumers or manufacturer.

#### Samples.

The opinion seems prevalent, both among manufacturers and consumers, that it is the easiest and simplest matter in the world to take a sample, and yet this is a fundamentally important phase of all inspection work, for unless the sample is drawn in such manner as to be representative, all subsequent work on it is without value.

In securing samples a definite set of rules which have been tested against recognized methods should be laid down for the guidance of inspectors, and deviation from such rules should be given careful investigation. If all samples are taken in accordance with a definite set of instructions the samples so taken should at least be comparable.

The variation and mistakes which

occur in all manufacturing processes being as applicable to fertilizers as any other materials, it seems to me only fair that at least two samples of each brand should be taken at different points, from different shipments and by different inspectors to prevent any possible injustice by the bad showing of one sample and in addition to maintain a check on individual inspectors.

#### Analysis.

Most laws contain regulations as to the methods of chemical analysis which shall be used, and almost invariably those adopted by the Association of Official Agricultural Chemists are considered as standard. Since the control chemists are usually limited by the law as to the methods which shall be followed, variations, according to his own personal opinion are not justified, and manufacturers in making guarantees should base them on the methods which must be followed in the work of inspection. Much of the apparent friction between manufacturers and control officials would disappear if the preceding were adhered to, since while all methods used, in the analysis of fertilizer are not exact if followed with minute care, comparable results will be secured by analysts working on portions of the same sample.

In making the analysis a system should be used which removes chance for discrimination. This can easily be secured by what is called the blind analysis of samples, which is in effect the analysis by number without information to the analyst as to the name of the fertilizer or manufacturer. In the department with which I am connected this is carried out to the extent of checking up the analysts by the chief or chief deputy without ascertaining the origin of the sample.

The inspection official should ever keep in mind the motto, "Not Infallible," and accept as the right of the manufacturer a request for review work or full information regarding a sample. Personally I am a believer in the right of a manufacturer to an advanced report with a certain time limit for investigation if desired. That we all do at times make mistakes cannot be questioned, and in view of the fact that the business of a manufacturer is largely influenced by the results of inspection and incorrect results reported is liable to cause a damage that subsequent correction cannot remove. The publication and retraction of such an error is similar in results to the retraction of a misstatement by a newspaper, which leaves most people "of the same opinion still."

The revenues for the administration of inspection laws should not only be sufficient to permit of the employment and retention of first-class men in all departments of the service, but should also provide a reasonable working balance. Such revenues should, of course, be expended under a system which shows the reason and legitimacy for each expenditure.

To secure the best results I believe the widest publicity and information should be furnished regarding the work of inspection both as regards the drawing of samples and their analysis. In fact, there should be no secrets in connection with inspection work, either from consumers or manufacturers.

To insure the greatest benefit from the results of inspection the analysis of all samples taken should be published so that due credit and benefit may be secured by manufacturers who maintain their guarantees and meet the law's requirements and an equal measure of condemnation be given to those who fail to do so.

## Michigan State Fair Detroit, Sept. 6-15, 1915

"Bigger and Better Than Ever"

### Greatest Exposition In the Middle West

Michigan's State Fair is to the people of Michigan what the San Francisco Fair is to the world. This year it will represent more truly than ever before the wonderful Agricultural and Industrial progress made by the people of Michigan.

**Progress of the Farm** Pure bred cattle, swine, sheep and horses will make the livestock exhibit the greatest in Michigan's history. The grain, fruit and other exhibits of the products of the farm will show the remarkable advance made in agriculture in Michigan and other Middle Western States.

**Special Days for Farmers** Wednesday, Sept. 8 will be State Grange Day and Thursday, Sept. 9 will be Gleaners' Day at the Fair. Prominent men in the two great farmers' organizations will give addresses. Special programs are being arranged.

### Judging of Butter and Cheese

The competition for honors in the state judging of butter and cheese will be most keen. All creameries must submit samples as this is the official test conducted under the supervision of state authorities.

### Great Tractor Demonstration

Latest improved models of gasoline tractors will be exhibited at the State Fair and a working demonstration on a five-acre farm will be a feature.

**Four-Day Milking Test** Various breeds of dairy cows will be tested to determine the best production of milk at the least cost. Appropriate prizes will be awarded.

**Horse Show** In addition to the exhibits in the regular horse department, a horse show will be conducted at the 1915 State Fair. Saddle, harness, and coach horses, hunters, jumpers, roadsters, fours-in-hand and tandems will compete for prizes. There will be classes for ponies, including the Welsh and Shetland.

**Battle in the Clouds** Other attractions include flights by the Patterson aviators, automobile races, girls' milking contest, automobile show, harness horse races, better babies contest, auto vs. aeroplane race, fireworks, Jackson prison exhibit, big midway, exhibits of wild fowl, band concert, exhibit by state fish commission, and various other features.

DON'T FORGET THE DATES

**SEPT. 6th - 15th**

G. W. DICKINSON,  
Secretary-Manager





# Magazine Section

LITERATURE  
POETRY  
HISTORY and  
INFORMATION

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

The FARM BOY  
and GIRL  
SCIENTIFIC and  
MECHANICAL

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

WHEN the true romance of this mighty, world-raging conflict shall have been written, one of the most extraordinary chapters of this marvelous war will concern the progress of invention and discovery. Instead of Armageddon setting back the clock of civilization, it has really in some respects moved it rapidly forward. Monster dreadnaughts of the air, super-aeroplanes with armored field pieces in numbers, and one artillery service of twenty-four men, instead of aeroplanes with two men and one unarmored machine gun; nitrogen and ammonia made from the air, submersible battle cruisers instead of u-boats and submarines, these are but a few of the already realized forward movements.

Perhaps almost the greatest of these feats and accomplishments is the invention of a method whereby nitrogenous foods, proteins or albumens,

## Flesh Really Made from the Air

By DR. LEONARD KEENE HIRSHBERG

can actually in unlimited amounts at an absurdly low cost be garnered from the earth's atmosphere. Not only will this discovery make the task of democratic and free institutions in suppressing the Teutonic autocracy more difficult, but it may store off the starvation plan of the Allies for a long while.

There is an unlimited supply of starches, sugars, beets, potatoes, and sweets in Germany, Austria and Turkey, but albumenous flesh-making foods rich in protein and necessary for life, health and vigor has had to be imported secretly from distant lands by way of neutral countries. Barley and wheat, malt and rye have all had to be obtained from the United States,

Mexico, and South America and seemingly shipped to Sweden, Switzerland, Norway, Holland and Denmark.

The process invented does away with such difficulties and future worries. Although, like making nitrogen from the air, it too was discovered in Norway, the method has already been seized upon and applied by the central empires. It is particularly feasible for the Germans because of the beer, malt, and other yeast-using industries.

Yeast factories have started the manufacture of this new albumen without a cent of extra expense or any trouble or loss of time. Here is the plan: First, by means of the electric furnace nitrogen is obtained from the

air and made into ammonia—which is nitrogen and water. This is combined with oil of vitriol or sulphuric acid and thus makes sulphate of ammonia, a salt. Fifty-two pounds of this salt and 100 pounds of sugar are dissolved in water and a little yeast is added.

Yeast is a tiny, microscopic plant which grows rapidly. In a very short time from that amount of ammonia and sugar, nearly twice as much yeast, dried and weighed, is obtained. In other words, the 152 pounds of the raw, non-albumenous stuff gives 270 pounds of dry feeding yeast. One-half of this, or 50 per cent, is flesh-making protein or albumen.

When it is understood that about 600,000 tons of albumenous foods were imported every year into Germany as one-tenth of six million tons of wheat and barley, it can be appreciated how valuable the new Norwegian discovery will be to the military autocracy of

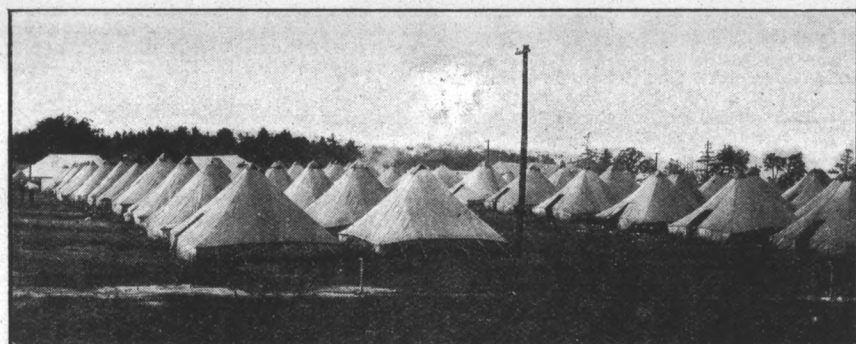
## WORLD EVENTS IN PICTURES



Italy's Famous 75 mm Guns Screened from Aeroplanes, in Action in the Isonzo District.



German Prisoners, During a Recent Inspection of German Camps in Alsace, Saluted General Joffre by "Eyes Left."



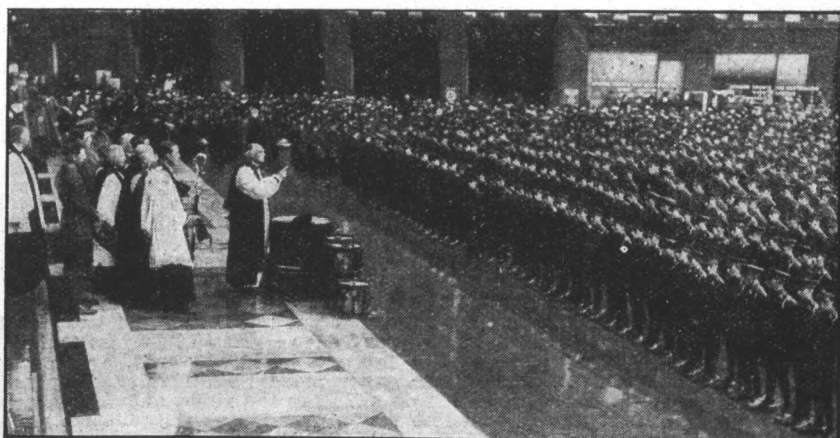
The Military Camp at Plattsburg, New York, where Many Prominent Business Men are Taking Military Training.



Russian Prisoners Taken on the Dubissa, on their way to the German Concentration Camps.



Auto Ambulances, Presented to the Allied Armies by the English Auto Club, in the Courtyard of Hotel Des Invalides in Paris.



The Bishop of London Conducting Intercession Day Services from Steps of St. Paul's Cathedral, London.



Germany and Austria. They only used 440,000 tons of sugar a year to make up the deficit, which gives me and some other ardent advocates of republican forms of government, the unpleasant conviction that Germany cannot be starved out.

Muscle and flesh are built up by albumens. Cattle, swine and live stock as well as mankind, must needs succumb to the Grim Reaper unless flesh

foods—albumens—are always available. Man has always depended upon the crops and other vegetation for proteins or upon animals fed upon them. This seems no longer necessary. All that you need do is to take the free nitrogen from the air, make ammonia of it, use the starch or sugars from honey, syrup, potatoes, beets or other sources, plant yeast in them, and lo! you can have health and happiness.

## THE RED MIST.

By RANDALL PARRISH.

Copyright A. C. McClurg Co.

### CHAPTER XXV.

#### We Understand Each Other.

I MAY have staggered as I crossed the room, but I accomplished the feat unaided, each movement giving me renewed strength. The wooden bar fitted tightly into its grooves, and, once firmly in place, left us secure from any unexpected intrusion. My brain cleared, and my gaze wandered about the bare, squalid apartment, as I swiftly reviewed our dangerous position. Noreen had drawn away from the body of the dead man, and stood against the further log wall, with face hidden in her hands. Cowan lay at full length, one arm thrown across his eyes. It was hard for me to conceive that the man was actually dead, and I bent over him, touching his flesh with my fingers to assure myself. The ball had penetrated his abdomen, and how the fellow ever fought so fiercely after receiving that death wound I can never understand. I think that in his mad ferocity he was scarcely aware that he was hurt—his one overmastering desire being to kill me. I turned him partly over, and drew out from the inside pocket of his blouse a handful of papers concealed there. One was a buff packet, which had been roughly torn open, but which bore no inscription; the others ordinary appearing letters addressed to Cowan. The latter I barely glanced at, assuring myself they contained nothing of special interest, but examined the contents of the buff packet with care, convinced that this was the one taken from Major Harwood the night of his murder.

The packet contained several official papers emanating from General Ramsay's headquarters. Two of these related to army operations in western Virginia, and the present distribution of troops, requesting the dispatch of another regiment of infantry to help free the country from guerrillas. There was also a personal letter from Ramsay to McClellan giving more intimate details, and a general review of the situation, but the principal paper was a carefully prepared list of irregulars operating throughout the mountain country, with names of the better known leaders, the estimated strength of each separate gang, the region in which they hid, and the side they espoused, if any. This had evidently been carefully prepared by some staff-officer, undoubtedly Major Harwood himself, as the letter referred to him as having been detailed to such duty, and was full and complete. I found therein this mention of the Cowans: "Father and two sons; probably control fifty or more men, with headquarters near Union in Green Briar Mountains; raid indiscriminately; have attacked our forage trains; refuse to cooperate, and continue to terrorize a large section; raided Lewisburg before it was occupied by troops, killing several, and looting the shops. Is considered the most dangerous gang operating in Green Briar and Monroe Counties; reports of atrocities received almost daily, many too hideous to repeat."

I glanced up at Noreen, and her eyes met mine inquiringly.

"Is this your father's handwriting? I asked, holding the paper toward her.

"Yes; what is it? important?"

"Not very complimentary to Cowan here. A report to General Halleck, at Washington, of conditions in Western Virginia. I wonder how the old villain ever learned that such a paper was being forwarded?"

"It is not likely he did," she answered thoughtfully. "It may have been mere accident which put the document in his hands. See, here is a letter that father wrote," and she stooped and picked it up from the floor, uttering an exclamation of surprise. "Why, it—it is addressed to Ned Cowan at Union! What could he have written this man about?"

"Let me see," and I took it from her hands. "We may find here an explanation of the whole affair."

It was a single sheet, very formal in expression, as though the writer merely performed a duty which he considered unpleasant but necessary. He acknowledged receipt of a communication reaching him at Ramsay's headquarters, apparently an application for pardon, and a pledge to unite with the Federal forces, and stated that the writer would be at the Minor house near Hot Springs at a certain date, where he would be glad to confer further regarding the matter. He agreed to come unattended, and suggested that his visitor use the name of Taylor so as to prevent any suspicion. The closing paragraph referred to a former misunderstanding between them, and expressed a kindly desire to blot out all memory of what had occurred. My hands trembled as I read the lines, and the girl at my side cried softly, her eyes so filled with tears I doubt if she could distinguish the words. Scarcely aware of the action I held her with my arm, the letter crumpled between my fingers.

"It is all clear enough now, little girl," I whispered, my voice trembling from sympathy. "Your father met his death at the hands of a treacherous scoundrel. It was a plot carefully conceived, and now Cowan has paid the penalty. I am glad we have learned the truth; but Major Harwood would never wish you to mourn here in the midst of all this danger—you are listening?"

"Yes; I will do just as you say; but—but I cannot remain here in presence of this man's body. It—it will drive me insane."

"It will be best to go; safer, I think also, for Anse and his gang may return here. There would be no mercy shown us in such a case. Sit here a moment," and I forced her upon a stool with her back to the dead man, "while I search for food. I can trust you alone."

Her hands clung to me, but she was no longer crying, although unshed tears dimmed her eyes.

"I—I thank God," she faltered, "that he sent you to me. I could not bear all this alone."

"I am glad you care to have me here," I answered eagerly. "I was half afraid you did not."

"Oh, but I do; I cannot tell you all it means. I—I think I have never felt more helpless, or—or discouraged."

"It is the strain of so much occurring at once, and you are worn out. We will get away from here, somewhere back into the hills where we can feel safe from discovery. Then we can rest all day, and you will be all right again. We need sleep and food."

I released her hands gently, and began a swift search of the cabin. It did not require long to explore the single room, and I found all we required in a big box beside the bunk. What I could conveniently transport was pressed into a clean bag, and I also took possession of a quilt to add to her comfort. I left Cowan lying just as he had fallen, seeing little use in attempting to conceal the body. Both of us were glad enough when we closed the door of the shack, and returned to our horses. We rode on steadily for an hour, only occasionally exchanging a word. The road was rough and mountainous, so rocky underfoot our horses left no trail. At last we came to a narrow ravine down which a brook plunged over a stony bed. There was no trail visible, but it was possible to advance some distance by keeping close to the bank. I dismounted and, holding to the rein, led my horse carefully forward.

"Follow as closely as you can," I called back to her, "and keep at the rock edge so as to leave no trail."

For a hundred yards, or more, we experienced no difficulty, the stream turning to the right, and following the same direction as the pike we had deserted. The forest growth between, however, left the latter invisible. Then the stream veered suddenly to another point of the compass, and the

trees so obstructed the bank that I led the way down into the water. It must have been a mile above this point—a mile of hard, slow travel, the water to my knees, and the rocks below treacherous—when I ventured to climb the bank, and seek a suitable spot for our day camp. A safer place surely could not have been found. We were in a narrow defile, scarcely fifty feet across, and guarded on either side by high rock walls, precipitous, and exhibiting no sign of a trail. The woods were open, yet sufficiently thick to yield good cover from observation from above, and there was sufficient grass for the horses. I picketed these close to the stream, and spread blankets for the lady to lie on at the foot of the bluff, where she would be well screened by a thicket of underbrush. Then I came back to where she sat silently against the bole of a large tree, watching my movements.

"No doubt we are safe enough here," I said, opening the pack. "But I'll not risk a fire; you can eat, I suppose?"

"I hardly know," wearily. "Perhaps I can choke a little food down; but really I am not hungry. How far have we come?"

"As a mere guess I should say nearly ten miles since leaving the cabin. By the sun it must be nine o'clock. Eat what you can, and then lie down on the blankets and rest. We will not leave here until just before dark."

"And you?"

"Oh, I may doze later if there is no alarm; I shall never be far away."

She ate the coarse food daintily, apparently without appetite, but I did full justice to the meal, satisfied, for the time being, at least, that we were securely hidden. The horses munched at the sweet grass behind us, and a ray of sunshine found way through the leaves overhead, and lay in bar of gold across her hair. In spite of her long vigil the girl's face bore few marks of fatigue, and her eyes, occasionally lifted to meet mine, were not heavy with sleep. I endeavored to talk, to speak lightly on inconsequential topics, but her brief responses were not encouraging. There was a strange constraint between us, and, finally, hoping to make her feel more at ease, I ventured to broach the subject which I knew must be also uppermost in her mind.

"It is an odd situation in which we find ourselves," I began awkwardly, my eyes on the ground, "but I hope you—you will not feel embarrassed, or—or fail to have complete confidence in me. I—I have no wish to take any advantage; or—or assume any authority."

I stopped, unable to express the thing I desired to say, and the silence seemed long. I lifted my eyes, and she was looking at me.

"May I ask one question?"

"A dozen."

"No, the one is all. You really believed those who attacked us were Cowan's men?"

"I had no other thought, Noreen."

"Then your proposal was merely made in the hope of thus protecting me from insult?"

"That was my sole thought at the time," I replied. "It was a desperate chance, yet the only one apparently left us. That is what I wanted to say, to explain, I went on hastily, before she could interrupt. "I realize the serious mistake made, and how embarrassing it must all be to you. But you must believe me a gentleman. I would never have spoken one word; never have made any claim upon you. Miss Noreen, I realize that I have no right."

"You may call me Noreen," she said simply. "We have been friends, and I think we will always be. I do trust you, and believe in you; only I wanted to understand fully your motive. I do not blame you, nor myself; we did what seemed best at the time, and—and now we must meet the issue as we best can. Perhaps I should not have said what I did back there in Lewisburg. I had no time in which to consider, and my only thought then was to justify my action in aiding your escape. My—my being your—your wife was the only excuse I could urge for such disloyalty. Surely you—you comprehended my purpose?"

"And appreciate the sacrifice."

"It—it was hardly that; no more than a swift impulse. I—I did not even grasp all that it might imply. I knew I must aid you; that I could do less; but—but I did not realize then that such a choice meant that I must flee with you—put myself in your protection. I—I intended to stay there—in Lewisburg, and rely upon my friends to save me from punishment." She leaned across toward me, speaking rapidly. "I knew General Ramsay, and felt he would accept my word—the word of Major Harwood's daughter—and me just. But—but after we were free; after that soldier was left dead, I—I seemed to grasp the seriousness of my position, and—and became afraid. I—I wanted so to get

away, I hardly knew my own mind. That was why I insisted on riding with you."

"And now you are sorry?"

"I—I do not know," hesitatingly. "I cannot decide. Where do you take me?"

"Noreen," I said soberly, struggling to keep my hand from touching her own, where it rested on the grass, "it is too late now to go back; to think of going back. We cannot deny, or conceal, our marriage, since you have openly acknowledged it, and we have gone away together. There is only one straight path left for us now—across the mountains to old Virginia."

"I—I know—and then?"

"You must trust my honor, my discretion. We are friends, you say, and I mean to prove worthy. My orders will take me to Richmond; have you either friends, or relatives there?"

"I am not sure, the war has made such changes—but I hardly think any in whom I could confide."

"Then we will find a way for you to join my mother; she is in North Carolina, out of the track of armies. You will consent to go to her?"

"If you think it best. I—I have never met your mother; perhaps—"

"You will be just as welcome; I will write her every detail, and she will be rejoiced to shelter you. The only trouble is the necessary delay involved by the war; the impossibility of your venturing to return to Green Briar until the conflict is over."

She was silent a long while, her eyes cast down, her breathing noticeably rapid. I waited, not knowing what else to add, and was about to propose her lying down, when she spoke suddenly.

"You mean our—our separation?"

"Certainly. That can be easily arranged as soon as the courts are again in session. Possibly the ceremony was not even legal without witnesses, but, under the circumstances, it had better be dissolved in court. Such action would remove all doubt from your mind?"

"Yes—I suppose so; you—you make it very clear. And that would have to be done in Green Briar—the—the action for divorce?"

"At Lewisburg; not necessarily, of course, but I supposed you would rather have the facts made known there, so that your friends can realize all the conditions—the cause, I mean. Possibly you may not need to do this."

"Not need! Why?"

"A soldier never knows what another minute means; I am a soldier."

"Oh! you should not say that!"

"It is part of the trade; I had no thought of hurting you, yet the bullet to set you free may be even now in a Federal cartridge box."

She did not look at me, or move, although I thought the hand resting on the grass trembled.

"I believe I will lie down," she said finally. "Is that the place you have chosen, beyond those trees?"

"Yes; let me help you up; the blankets are both yours. I shall not need any."

I stood and watched her move across through the mingled shade and sun, until her slender form finally disappeared behind the screen of undergrowth. Once she had glanced about, pausing as though some thought had occurred suddenly, but did not speak. I was left alone.

### CHAPTER XXVI.

#### The Cane Ridge Meeting House.

THE spot where Noreen lay was not fifty feet distant, but my position gave me no glimpse of her through the tangled brush. Yet the woods were clearer on either side of the little thicket in which she was sheltered, so that nothing could approach from any direction, and escape my notice. I had no wish to sleep, although physically wearied and bruised almost from head to foot. There was no rest to my brain; no driving away of the thoughts engendered by this interview. Whatever of hope I had formerly clung to had been banished utterly by this last fragment of conversation. I had been frank, and pictured before her the entire situation; had outlined the only sure way of escape—and she had silently acquiesced. She had spoken no word of protest, expressed no faint desire to have it otherwise. She had even confessed that her accompanying me in flight arose from sudden impulse; that she had been driven onward by fear of what might befall her if she remained behind. The girl cared nothing for me beyond a mere colorless friendship, her sole ambition now was a desire to reach the protection of others, and then dissolve the slight, formal bonds which bound us. The position she assumed left me small choice; I must crush within me the love I felt; for the slightest conception of its existence would add to her embarrassment, and render more unpleasant our necessary companionship. I felt confident



she had no suspicion; I had guarded well my words and actions. She had no cause to question my motives, nor to suppose that I was actuated by any personal desire. Her answers to my proposition proved that, for she had voiced no protest, given vent to no expression which I could construe favorably. No; our further relationship was already fixed, decided—it was to be that of simple friendship.

I sat there a long while motionless, my back pressed against a tree, thinking, and endeavoring to plan the future. Nothing disturbed the silence, except the movements of the two horses as they grazed, and the impudent chatter of a squirrel overhead. The sky above was cloudless, and the sunlight fell warm through the tree branches. The pike road was too far away for any noise of passing travelers to reach my ears, although once I imagined I heard the report of a distant rifle. I must have dozed, for the sun was high overhead when I finally aroused myself, and arose to my feet. I watered the animals, and then seated myself again, this time on a flat stone beside the stream. My position afforded me a clear view of the bluff opposite, and, as I idly studied its rocky outline, it somehow assumed a familiar appearance—awoke unconsciously a dormant memory. Surely I had never been here before, even in the days of my boyhood's vagrant tramping, and yet that terraced crest, with the huge rock chimney rising conspicuous at its center, revived a recollection that would not be entirely denied. I had seen it before, but from another angle—from the south; from that hillside, perhaps, where the creek headed. Why, yes; there was a spring gushing out of the rocks, and the opening of a shallow cave back of it. I was there with my father, and Jake Mocroft, the sheriff. They were hunting deer, and I had begged so to be taken along that they finally let me come. And Jake shot a deer just above the spring, and we camped there at the cave entrance; why that was fifteen years ago, and I was only nine; and the men were both dead. But I remembered—it all came back again clear and distinct—the rough trail from the spring, winding and twisting along the face of the steep hill until it finally attained the crest, and skirted the odd chimney rock, and then down to where a church stood alongside the pike, a big log church, with hitching racks each side. Why, that was Cane Ridge Baptist—Nichols' church!

I do not know why I laughed, but I did—perhaps it was from sudden relief at thus discovering exactly where we were, and seeing clearly the easier way out. The sound of a foot stepping on a round stone caused me to face about. Noreen was within a few feet of me, higher up on the bank, one hand holding back the bough of a tree.

"Why were you laughing?" she asked. "I thought you had gone until I heard that sound."

"Deserted you! never! I am not that kind of a cavalier. Why, I protest I watched over you faithfully for hours while you slept, never even venturing to move from the spot where you left me. I swear it!"

"And I believe; but surely this is not the spot."

"No; the sun was high, and I ventured to water the horses; then I lingered, studying the ridge over yonder. Do you recognize it?"

She gazed where I pointed, shading her eyes from the sun, her forehead drawn into puckers. At last she shook her head, her glance seeking my face inquiringly.

"It awakens no memory."

"Because of the point of view. If you were at the top you would remember. I studied it a long while before I recognized the place myself. I had to laugh when the truth finally came to me; that is Cane Ridge."

"Where the Baptist church is?"

"Exactly; where Parson Nichols points out to his congregation the straight and narrow way. There is a bridge-path yonder leading up from the valley, which will save us a five mile detour. But it means we are still in Cowan's country, and to climb there with horses will require the use of daylight."

"You think Anse—"

"Is probably back before this, and doing his best to trail us. Even if he does not discover the body of old Ned, he will naturally conclude we will head east. My only hope is that not having seen us last night he may doubtless he would send some of his men scouting this way."

"You have heard—seen nothing?"

"No, we are too far back; the noise of an army passing along the pike would not reach here. If we get to Cane Ridge Church before dark, we must trust to luck, and the night for the next thirty miles."

"You fear Cowan's gang more than the troops? Surely they will pursue?"

"No doubt; Pickney will be raving,

and Raymond crazy to get hands on me. Ay! there will be some galloping of troopers. I should have liked to see Fox's face when he heard the news; by heavens! they are like enough to charge him with conspiracy, for he was officer of the day. However, I do not greatly fear them; they will make noise enough to warn us, and couldn't track a bear. It is the mountain men we must guard against; they are wolves. You slept well?"

"After the first hour. I am rested, and strong. Shall we go now?"

"When we have eaten. There may be no other opportunity, and there is ample time. You might even sleep another hour."

"Oh, no, I could not," and she gave a gesture significant. "It was only complete exhaustion that gave me sleep before. I would rather feel we were making way through the cordon of our enemies."

"I am glad you say 'our.'"

"I can scarcely do otherwise, sir," she said, just a bit archly, "for does not this cloak make me a 'gray-back'?"

"You wear the colors; ay! with not a tinge of blue about you."

"You forget the eyes; all my loyalty is centered there."

"I have not forgotten them, and never shall," I contended stoutly, "but I have met blue-eyed Rebels. Besides loyalty is not all upon one side; I even lay claim to that virtue."

(Continued next week.)

### THE LOST ROAD TO BOYVILLE.

BY ALONZO RICE.

O little road I traveled in the days of long ago,  
It led through summer's roses, winter's sanctity of snow!  
By some ill luck I lost it among broad thoroughfares,  
And daily now my mind is vexed and burdened down with cares.  
O lost little road!

It wound through shady places and there were singing birds,  
It climbed a hill of mild ascent and there were grazing herds;  
Now often at the twilight hour when all is hushed and still,  
I can hear the sweet bird voices and the tinkle on the hill.  
O dear little road!

Then by a cot, and through the gate, a lass with deep blue eyes  
And sun-bright locks looked out at me in innocent surprise:  
Oh, little road wind round again and let me stop and see  
If that fair dweller by your side is waiting still for me!  
O kind little road!

Down to a little river with its stepping-stones across,  
If I could find the river—but again I'm at a loss—  
I'd wander up and down its banks and surely I could find,  
The place for which I'm seeking, that is ever in my mind.  
That lost little road!

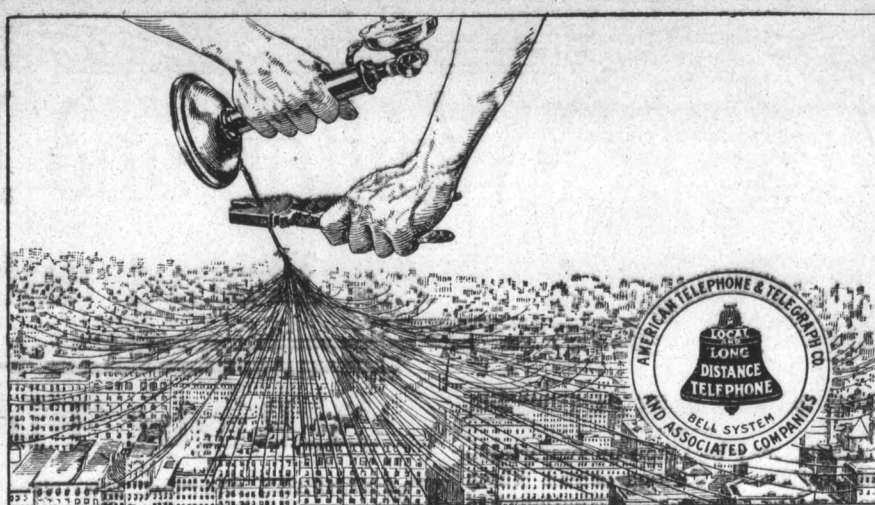
If only now at nightfall I could strike the well-known trail  
And see with glad, expectant eyes the home-light down the vale,  
I know my slumbers once again by sweet dreams would be blest,  
That only comes on pillows by a mother's fond hand prest!  
O dear little road!

I've sought for it by light of sun and by May's magic moon,  
Have risen early to the quest and yet before the noon  
My weary feet have faltered on the stony road that wound  
In strange and unknown places, and I have never found  
That lost little road!

Each sign-post I have gazed at, questioned persons on the way:  
A merry youth made answer as he sang a roundelay,  
"The place that you are seeking, sir, is very near at hand."  
The next, a grey-beard, answered, "It is in a foreign land."  
That far little road!

"Beyond the Alps lies Italy," but higher far than these,  
More difficult of crossing than all the world's wide seas,  
Are the barriers that keep my feet from out that magic land,  
Within whose pales of sweet content I nevermore may stand!  
O lost little road!

But I shall find the trail again my my early footsteps trod,  
Within a fairer region, close by the throne above,  
Where I can cling in gladness as oft I've cried in tears,  
As I lay down the burden I have borne through all the years,  
"Oh, dear little road!"



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There would not be time enough to do the things we are accustomed to do, and social as well as business life would be paralyzed.

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# Woman and Her Needs

## At Home and Elsewhere



### CARE OF THE BABY IN SUMMER.

A baby may be made uncomfortable and restless by various causes which are readily removed. Attention has often been called to the fact that babies and young children frequently suffer from thirst. They should be offered a drink of water several times a day, and particularly in hot weather. When a baby cries in the night, a drink will often quiet him, and send him to sleep.

Irritating clothing is at times responsible for the baby's fretfulness. Woolen socks, or shirts, or stiff cap strings are quite enough to spoil his comfort, even if he is well, and, in hot weather especially, a superabundance of clothing is frequently responsible for much real suffering.

**Prickly Heat.**—One of the troubles from which a baby often suffers in summer is prickly heat. This ailment appears as a fine red rash, usually on the neck and shoulders, and gradually spreads to the head, face and arms. It is caused by overheating, due either to the hot weather or to the fact that the baby is too warmly dressed. The rash comes and goes with the heat, and causes intense itching. The remedy for it is to take off all the clothing and give the baby a sponge bath in tepid water in which common baking soda has been dissolved. Use one tablespoonful of soda to two quarts of water. Use no soap, and do not rub the skin, but pat it dry with a soft towel. After the skin is thoroughly dry, dust the inflamed surfaces with a plain talcum powder. This ailment, like all others, is more readily prevented than cured. Frequent cool baths, very little clothing, simple food and living in cool rooms, or in the open air will probably save the summer baby from much of the annoyance of prickly heat and other serious ills.

**Chafing.**—Fat babies are very apt to suffer from chafing, especially in hot weather. It appears as a redness of the skin in the buttocks or in the armpits, or wherever two skin surfaces persistently rub together. Much the same treatment is required as in prickly heat. Never use soap on an inflamed skin. Instead use a soda, bran or starch bath. Directions for these baths are given in a publication called "Infant Care," which may be had, free of charge, by addressing a request to the Chief of the Children's Bureau, U. S. Department of Labor, Washington, D. C.

Great care should be taken not to let the baby scratch the skin, when it is irritated. Sift together two parts of powdered cornstarch, and one part boric acid, and use it freely on the chafed places. Remove wet or soiled diapers at once. Wash and dry the flesh thoroughly, then dust the powder freely between the legs.

**Milk Crust.**—This is a skin disease affecting the scalp, in which yellowish, scaly patches appear on the baby's head. These patches should be softened by anointing them with olive oil or vaseline at night, and the head washed with warm water and castile soap in the morning. If the crust does not readily come away, repeat the process until the scalp is clean. Never use a fine comb nor the finger nails to remove the crusts, as the slightest irritation of the skin will cause the disease to spread further. The scales will usually disappear after

### A Right Time to Drink

PHYSICIANS generally recognize two seasonal forms of diseases, those of the respiratory organs, which begin in the fall and last through the cool weather, and hot weather diseases, or diseases of the digestive organs.

The hot weather diseases are usually laid to the habit of eating too much fruit, particularly green fruit. And while this has much to do with a great deal of sickness in summer, there is another little recognized cause, that of drinking too much cold water or iced drinks of any sort.

The excessive heat causes rapid evaporation of the moisture of the body by perspiration, and consequent thirst results. The average individual satisfies this craving by copious drinks of water as cold as it can be gotten, under the mistaken idea that the water must be cold to satisfy thirst. As a matter of fact, the cold water only causes greater thirst. It first chills the walls of the digestive tract, then inflames them by the reaction, and a craving for more cold water to allay the burning results. Many people have frequently read that the body demands a great deal of water to "flush it," and create a desire for a great deal of water by forcing them-

selves to drink freely until a diseased thirst is created. The body demands a certain amount of liquid, but this liquid can as well be taken warm as cold, and in hot weather is better warm, as taken this way there is not so much danger of drinking too much.

Thin, anaemic people and those suffering from indigestion are better to have their drinks warm. The shock to the internal organs from drinking a great deal of cold water is as great as a cold bath to these feeble individuals. It would be a good rule for everyone who is not strong and vigorous to take none but warm drinks. Ice cream, as it is usually eaten slowly and with cake or other unchilled foods, may be more safely taken by anaemic people than the cold drinks.

To drink or not to drink at meals is a question much argued by all who pay any attention to hygiene. It is well to remember that nature designed saliva to moisten and digest the starchy food, and that if we wash each mouthful down with a draught of water, tea or coffee, the food will not be properly digested. A great deal of solid foods, unrelieved by any drink, however, is unpalatable too many, so it is well to serve the drink at the end of the meal.

DEBORAH.

care of ourselves, we should be more considerate in our "whims."

And, too, before we demand what we want, it might be well for us to consider the financial condition of affairs. Possibly it may be more complicated than we suppose. Perhaps father does not feel able to do remodeling, do up-to-date plumbing, install a lighting plant, etc. If circumstances permit and we know we can afford the above fixtures, then all is well. But most fathers have something else in mind to do. Possibly he may have other daughters or sons besides the "grown-up" who must have their start in life. All of that demands the hard-earned coin of father.

So, in my way of thinking, I consider it would be wise to weigh well the above before issuing an ultimatum on the "old folks." It is true, I must admit, that we all cannot think alike and it is as well we do not, for the old world would be altogether too harmonious if we did.—"Baldy," Linden, Mich.

### HOME QUERIES.

**Household Editor:**—I have moved into a house where there are bed bugs and would like to know what to do to get rid of them. I have used gasoline, turpentine and coal-tar disinfectant and have failed to kill them.—V. I. P.

Riley and Johannsen in their book of Medical Entomology recommend fumigation for severe infestation as follows: "The simplest and safest method of fumigation is by the use of flowers of sulphur at the rate of two pounds to each 1,000 cubic feet of room space. The sulphur should be placed in a pan, a well made in the top of the pile and a little alcohol poured in, to facilitate burning. The whole should be placed in a larger pan and surrounded by water so as to avoid all danger of fire. Windows should be tightly closed, beds, closets and drawers opened and bedding spread out over chairs in order to expose them fully to the fumes. As metal is tarnished by the sulphur fumes, ornaments, clocks, instruments and the like should be removed. When all is ready the sulphur should be fired, the room tightly closed and left for 12 to 24 hours. Still more efficient in large houses, or where many hiding places favor bugs, is fumigation with hydrocyanic gas. This is a deadly poison and must be used under rigid precautions. Fumigation with formaldehyde gas, either from liquid or 'solid' formalin, so efficient in the case of contagious diseases, is useless against bed-bugs and most other insects."

To keep fruit pies from running over I tear a sheet of soft waxed butter paper into three strips, wring them carefully out of water and wrap them around the edge of pie, leaving upper edge rather loose and putting under edge down close. Pull off while pie is hot or the paper will stick. This is far more sanitary than a cloth, besides being more convenient. Be sure there are plenty of airholes in the upper crust and wet edge of lower crust before putting upper one on. Sprinkle a little flour all around next to edge before putting cover crust on.—M. K.

Mix well one cake of white soap, dissolved in two gallons of water and add three drops of lemon oil. Sprinkle this over your garden.—J. J. O'C.

a few days of careful treatment.

**Constipation.**—If the baby does not have at least one full bowel movement in 24 hours or in 36 at the outside, he is in need of such care as will bring about this result. Breast-fed babies often respond to an increased supply of laxative food in the mother's diet. If this is not sufficient, a six-months' old baby may have a tablespoonful of strained orange juice between two of his morning feedings. Bottle-fed babies may have fruit juice in the same way and thin oatmeal gruel may be substituted for barley water in making up the feedings, after the baby is four months old.

Perhaps the best preventive of constipation is to teach the baby to move the bowels at the same hour every day. This training should be begun when the baby is three months old, and should be faithfully continued until the habit is firmly established. Not only does this practice establish in the baby from the beginning of his life a custom which will greatly increase his chances for good health, but results in an enormous saving of work to the mother. She no longer finds herself confronted with a pile of soiled diapers to wash, but instead gives 15 minutes of careful attention to the baby each morning.

Direction for carrying out this training are given in the pamphlet on Infant Care, already mentioned. Do not use enemas for the relief of constipation save in emergencies, and do not resort to purgative medicines except with the doctor's advice.—U. S. Department of Agriculture.

### LET CHEERFULNESS ABOUND.

BY JULIA RAMSEY DAVIS.

Cheerfulness is an essential quality to right and wholesome living, which fact none will deny. But its acquirement is in most cases a matter of se-

vere discipline before it is really definite and dependable. It is much more easy to indulge, or exhibit, than to conceal, the discontent and unhappiness lurking within. So when the soul is literally sick with the irritating concerns and duties lying in wait, it may help to keep in mind the beautiful prayer, so oft quoted, of Robert Louis Stevenson:

"The day returns and brings with it the petty rounds and irritating concerns and duties. Help us to play the man. Help us to perform them with laughter and kind faces. Let cheerfulness abound with industry. Give us to go blithely about our business all this day, and bring us to our resting beds, weary and content and undishonored, and at the end grant us the gift of sleep."

### THE LETTER BOX.

#### The Youngest Speaks.

I have read very carefully what the "Grown-up Daughter" has had to say. This has been one of the first articles of this department that I have read and I was much interested in the "spiel," as it was termed.

The talk about father drew my attention and it is here that I shall pause for a few moments. We, I don't say father, have not been satisfied with the hay-loader, etc., but have an auto and expect in the next two or three years to purchase a gas tractor. The house, in which we live so happily, is one that dates back to the "forties," having scarcely any remodeling, with now and then a small hole in the roof, allowing the rain to drip down and compelling us to seek dry quarters. We are on a farm of some 200 acres and are as contented as we can expect to be. I cannot criticize "father." He has things which worry him more than we know, so I believe that when we are old enough to take



## Grange.

### MAKING THE HOME ATTRACTIVE.

Paper read by Mrs. Fred Graham before Schoolcraft Pomona Grange:

Our aim has ever been to make our home the most enjoyable place for its members and with this in view, we should spare no pains nor expense to achieve that end.

Speaking from experience, I can say that every hour and every dollar expended in making the home more attractive and comfortable is time and money well spent.

How often we hear farmers remark that they would make such and such changes or repairs around the house if they only had the time, but it takes all their time to make a living and they can not see where these improvements would bring them in anything.

Scores of farmers are toiling hard from one week's end to another striving to own more stock or more land, or to increase the bank account, while the home and its surroundings are allowed to go undone. The wife and mother must toil incessantly and deny herself every luxury and even many of the real necessities in order to save or lay by for old age.

Of course, all of these things are good and proper to think of, but we should stop and consider that it is easy to overdo the matter and that in so doing many of us are cheating ourselves out of the present blessings, which some little comforts and pleasures would bring into our lives.

Surely, the giver of all good, intended us to enjoy life, there is no need in working so hard or ceaselessly, without rest or comfort, for the chances are that by so doing we shorten our days on earth, so that we may never live to see the beautiful old age which we have labored and hoped for.

Arrange your work so that you can have a half a day each week to call your own. Take time to get acquainted with your family and show that you have an interest in your children and their pleasures.

Besides all the comforts and pleasures to be derived from such a plan keeping the home in order will impart to your place a more proper appearance and add dollars to its cash value in the estimation of prospective buyers in case you desire to sell, but best of all it renders home life on the farm more attractive. It keeps your children from straying into paths that are not good. There are hundreds of little inexpensive ways of adding to the attractiveness of the farm, even when we haven't the means for more elaborate improvements.

### AMONG THE LIVE GRANGES.

The Recent Pomona Program at North Leoni was attended by 300 who braved a steady downpour to be present at what is pronounced the best meeting in the history of Jackson County Pomona Grange. Delegates from eight Granges were present and the large audiences listened to three interesting sessions. Mayor William Sparks, Paul A. Ledy, of the Chamber of Commerce, and W. B. Burris, secretary of the Jackson County Fair, featured with interesting talks. Mrs. Dora Stockman, lecturer of the State Grange, captivated the audience in the evening by her treatment of the topic, "County and Rural Development." At the banquet Mrs. Wm. Sullivan, of Hanover, presided as toastmistress, which she did in a characteristically happy vein.

### COMING EVENTS.

Trowbridge Grange, of Allegan Co., is to hold a Grange hall at Emerson Lake on August 28. State Master Ketcham is to speak, also Prof. Bruman of Ann Arbor. There are to be games, base ball, land and water races. Everyone interested in the betterment of rural life is invited to come, with dinner basket, to enjoy a day of profit and amusement.

## Farmers' Clubs

### OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—R. J. Robb, Mason.  
Vice-president—C. J. Reed, Spring Arbor.

Secretary and Treasurer—Mrs. J. S. Brown, Howell.  
Directors—Alfred Allen, Mason; Joseph Harmon, Battle Creek; C. B. Scully, Almont; C. T. Hamline, Alma; W. K. Crafts, Grass Lake; Edward Burke, St. Johns.

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

### Associational Motto:

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

### Associational Sentiment:

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

### THE CLUB FAIR.

With the advent of the fair season in Michigan the advisability of holding a Farmers' Club fair is a good topic for discussion at an early meeting of the local Club. The fact that a considerable number of Clubs in the state have held an annual event of this kind for a number of years is proof that it has proven beneficial to the organization. If this has been true of the many Clubs which have held fairs it would doubtless prove true in other Clubs which have not tried the plan. To the end that a general discussion of this kind may bring out the advantages of the Club Fair in a manner which will appeal to more Club members throughout the state, may we not hear from Club members who have had experience in this department of Club work?

### CLUB DISCUSSIONS.

**Hold Annual Picnic.**—The Indianfields Farmers' Club held their annual picnic at the home of Mr. and Mrs. David Andrews, Thursday, August 12. Mrs. Ami Terry with her helpers, served a bountiful dinner at noon. A very pleasing program of recitations, songs and talks followed. The young people of the Club are doing much to make the programs each month more interesting. Mrs. Arthur Calbeck favored the Club with an instrumental solo and Herbert L. Cope ended the program with one of his happy talks.

**The Midsummer Meeting of the Columbia Farmers' Club** was held at the home of Mr. and Mrs. Judson Freeman. Clarence Cook presided over the meeting. Roll call was responded to with quotations, also "Places I would like to visit." Rev. Livingston, of Cement City, favored the company with a vocal solo, "Beautiful Isle of Somewhere," and as an encore, "In the Gloaming." The subject of having an exhibit at the County Fair was considered and owing to the wet weather leaving the grain in an unfavorable condition, and other reasons, it was decided to make no Club exhibit but to make as much individual effort as possible. Cards of thanks were read from Mrs. Nash and the Pierce family in appreciation of the flowers received. W. E. Randall acted as toastmaster in the absence of W. F. Raven and Mrs. Edgar Halladay, of Clinton, who gave "Old friends are best," or "What I have missed by being absent from the Club." Miss Helen Hewitt gave a reading, "The young 'uns in the home," which was much enjoyed. Miss Mae Crego told a story of "The Apple Orchard." Mrs. Effie Gary gave a reading, "The starless crown." Miss Ayesha Raven told of her experience in canning, using the canning apparatus from the M. A. C. Rev. Livingston told some amusing stories. Mrs. Flora Vining responded to the toast, "Our Club Friends," and spoke of some of the several home-coming meetings of the Club and how much they cemented the members as one body. Miss Paulina Raven is to be requested to give a demonstration at the County Fair, the date to be made Columbia Day and all members to be present if possible. The program was held on the pleasant lawn and all enjoyed the occasion. Several out of town members were present. Supper was served indoors and all voted this one of the happy meetings of the year.



## Will you join my Special farmers party for a tour of California farms and fairs?

Go this fall—on the **Santa Fe Farmers' Special**—spend two weeks seeing by auto the farms and homes of Southern California and San Joaquin Valley. Also take in the two great expositions at San Diego and San Francisco.

Do this in company with a comfortable, sociable party of rural folks who, like yourself, want to inspect the home-making inducements of sunny California. Take your wife along, too.

I am getting up a special limited party of people interested in the business of farming to make this trip under my personal escort, because I believe I can best prove to you, by this method, what the Santa Fe has so long been trying to tell you about this country.

I want you to see the San Joaquin Valley and talk to the people about the greater production per acre, the balmy, healthful climate, the year-round growing season. You will be the guests of many communities in Southern California and San Joaquin Valley. You will be taken on auto trips to see their farms, orchards and homes. We have no land to sell. We just want you to see and know California.

Let me tell you at what small cost this trip will be made. We will live on our own special cars most of the time, so saving hotel bills. Go with us on the Santa Fe, stop a day at Grand Canyon and return Santa Fe or any direct route.

This party will leave Chicago October 14, reach San Francisco about October 30, and return from there at your pleasure up to December 31. A second party will leave on date to be announced later. You'll see rural California—as you could see it in no other way. You'll see the two great world expositions. Also you'll see the Grand Canyon of Arizona.

Write me to-day for itinerary, particulars and rates.

Two Fairs—and California—for One Fare.

C. L. Seagraves,  
General Colonization Agent,  
Atchison, Topeka & Santa Fe Ry.,  
2264 Railway Exchange, Chicago.



## Bates All Steel Oil Tractor

**THE BATES ALL STEEL OIL TRACTOR** is the oldest tractor on the market. Years of hard service has developed every detail and it is entirely out of the experimental stage. It is a REAL TRACTOR and will stand years of hard work. If you buy a BATES TRACTOR it will last you a long time. You won't have to buy a new machine every spring.

### NO CHAINS

The last forty years in the manufacture of self-propelled machines has developed the positive fact that chains have proven very unsatisfactory for transmitting the power of the engine to the drive wheels and I dared not build a tractor with this cheap construction. THE BATES ALL STEEL OIL TRACTOR is provided with POSITIVE STEEL GEARS and so complete has been our success with steel gearing that we will furnish a guarantee to replace all gears that break for a period of five years, free of charge.

### A FOUR WHEEL TRACTOR

My tractor has four wheels and won't tip over. Two large wheels with wide tires for drivers and two front wheels for steering. This has become a STANDARD WITH MANUFACTURERS who have had long experience in building self-propelled machines, therefore, I could not ask my customers to accept a machine that is experimental.

### SOLID FACTS

My tractor burns kerosene equally as well as gasoline. It has TWO SPEEDS forward and will draw heavy loads up steep hills. It has a slow speed engine and will last a long time. It has a cab to keep the sun and rain off which is appreciated by HUNDREDS OF OUR CUSTOMERS. The plow carriage is connected directly to the tractor. You can back the plows into the corners of the fence and plow all of the field. They operate independently and will do good work in stony ground. One man can operate the entire outfit. All of our customers have found this tractor very practical for hauling harrows on plowed ground as well as for operating on muck land. Think how much you can save by operating your hay baler, ensilage cutter, corn husker, etc., with my tractor. You can draw the machine from one job to another, up steep hills and over bad roads. Many of our customers have operated hay balers all winter and with the WIDE DRIVERS are able to go through deep snow and draw a hay baler in a very practical way. 2 sizes: 15 H. P. and 30 H. P. Send for our catalog.

Bates Tractor Company

105 Bates St.,  
LANSING, MICH



## THE OLDEST TRACTOR ON THE MARKET

### The Guarantee Lime & Fertilizer Spreader

Write for low prices and Catalog B.

Sooner or later you will buy this complete spreader. Why not now?



The Spreader You Have Been Waiting For.

Will either spread evenly or sow in rows. All regulations can be made from seat. Comes fully equipped with all accessories such as acre-mark, indicator, screen, lid, seat, neck-yoke and double-trees. Write us TODAY.

The Guarantee Manufacturing Co.,  
Dept. B52, Baltimore, Md.

AN Outside Grocery in good manufacturing town. Building with living rooms \$2,300. Stock and fixtures about \$1500. business about \$60 or \$70 per day. Will sell or trade for small improved farm. Box M-828, Michigan Farmer, Detroit

**NORTHERN GROWN SEED WHEAT** Michigan Red Wave. Hardy, productive, Winter Wheat. \$1.50 per bushel, ten bushels or more, bags free, less quantity, bags 25c each. Cash with order. ROGERS BROS., Alpena, Michigan

**RED WAVE SEED WHEAT** Highest Michigan record 55 bu. Cleaned and graded by first class machinery. Write for sample and prices. MARK P. KELLEY, Oxford, Michigan.

**SEED WHEAT**, Grand Prize, Red Wave, hardy, stiff straw, beardless, no foul seed, rye or smut. 1 bu. \$1.65. Sacks free. Get prices in larger lots. FRANK BARTLETT, Dryden, Mich.

**ROSEN RYE**. Best yielding rye ever discovered. R. Will yield from 25 to 50 per cent more than common rye. \$1.50 per bu. A. D. GREGORY, R. No. 3, Lonia, Mich.

**RED WAVE SEED WHEAT**. The best wheat in Michigan. Write for prices and description. W. C. TAYLOR, Milan, Mich.

**WISCONSIN No. 2 RYE** Yields 36 to 42 bushels per acre. \$1.75 per bushel, any quantity, sacks free. GEO. R. SAPP, Mecosta, Mich., care of "Round Lake Farm."

When writing advertisers mention Michigan Farmer



# Markets.

## WEATHER FORECAST.

For week beginning Wednesday, August 25, for the region of the Great Lakes, cool and generally fair weather will prevail for several days, with possible light frost Wednesday morning in exposed places. In the Michigan Peninsula during the second half of the week, temperatures will rise, with partly cloudy weather and with probable showers over the upper lake region.

## GRAINS AND SEEDS.

August 24, 1915.

**Wheat.**—Although weather conditions have been unfavorable for the threshing and gathering of the winter wheat crop, prices have declined during the past week, and the market appears weak at the lower level of values. The main reason ascribed by the dealers is the promise of a very large spring wheat crop. Besides, millers are not taking the cash grain and foreigners do not appear to be anxious about the cereal. The trade here also anticipates the early opening of the Dardanelles and are using this to keep prices down. Reports also of a tightening of financial conditions in Germany are leading dealers to believe in the possibility of an early ending of the European war. Notwithstanding these factors, many large holders of wheat continue to hang onto their supplies, making it appear that these investors have confidence in higher values later on. One year ago No. 2 red wheat was quoted at \$1.04 per bushel. Quotations are as follows:

|           | No. 2 | No. 1 | Sept. |
|-----------|-------|-------|-------|
| Wednesday | 1.12½ | 1.09½ | 1.12  |
| Thursday  | 1.11½ | 1.08½ | 1.11  |
| Friday    | 1.10½ | 1.07½ | 1.09¾ |
| Saturday  | 1.10  | 1.07  | 1.09  |
| Monday    | 1.09  | 1.06  | 1.07½ |
| Tuesday   | 1.08  | 1.05  | 1.05  |

Chicago.—September wheat 99.6c; December 97.4c; May \$1.01½.

**Corn.**—The condition of the corn crop has enabled this market to maintain steady prices in face of the decline in wheat. The crop is backward throughout the country and will require unusually favorable fall weather to mature the ears. One year ago No. 3 corn was quoted at 84½c per bushel. Quotations are as follows:

|           | No. 3 | No. 3 | Yellow. |
|-----------|-------|-------|---------|
| Wednesday | 81½   | 83¾   | 83¾     |
| Thursday  | 81½   | 83¾   | 83¾     |
| Friday    | 82    | 84    | 84      |
| Saturday  | 82    | 84    | 84      |
| Monday    | 81½   | 83½   | 83½     |
| Tuesday   | 81    | 83½   | 83½     |

Chicago.—September corn 73.7c; December 63.3c; May 64.5c.

**Oats.**—Oat values are higher than a week ago. The new crop is suffering badly from the excessive rains. In many sections scarcely a field has been secured in good condition. The receipts at local elevators are grading very low, consequently the market for the better grades is stronger than that for inferior kinds. One year ago standard oats were quoted at 47c per bushel. Prices for the past week are:

|                | Standard. | White. | No. 3 |
|----------------|-----------|--------|-------|
| Wednesday      | 64        | 63½    | 63½   |
| Thursday       | 64        | 63½    | 63½   |
| Friday         | 65        | 64½    | 64½   |
| Saturday       | 65        | 64½    | 64½   |
| Monday         | 65        | 64½    | 64½   |
| Tuesday, (new) | 45        | 43     | 43    |

Chicago.—September oats 37.4c; December 36.5c; May 39.2c.

**Rye.**—This market is quiet with the cash grain marked down one cent from last week. Cash No. 2 is quoted at \$1.04 per bushel.

**Beans.**—Prices up 15c. Crop is being damaged by too much rain. Detroit quotations are: Cash \$2.85 per bushel; September \$2.90. Chicago trade is quiet and steady. Pea beans, hand-picked, choice, are nominal at \$2.85@3; common \$2.62@2.80; red kidneys \$3.25@3.50.

**Clover Seed.**—Crop prospects are only fair. Prices higher. Prime spot \$8.90; October \$9.30; alsike \$9.25.

**Timothy Seed.**—Prime spot \$3.25.

## FLOUR AND FEEDS.

**Flour.**—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$6.50; seconds \$6.30; straight \$6; spring patent \$7.10; rye flour \$6.50.

**Feed.**—In 100-lb. sacks, jobbing lots are: Bran \$25; standard middlings \$29; fine middlings \$32; cracked corn \$28; corn and oat chop \$30 per ton.

**Old Hay.**—Market is firm at steady

prices. Carlots on track at Detroit are: No. 1 timothy \$24@25; standard \$23@24; No. 2, \$22@23; light mixed \$23@24; No. 1 mixed, \$18@19; No. 1 clover \$14@15.

**Chicago.**—Demand good and supply light. New timothy \$13@18 per ton. **Straw.**—Rye straw \$8@8.50; wheat and oat straw \$6.50@7 per ton.

## DAIRY AND POULTRY PRODUCTS.

**Butter.**—Receipts are large and the market is easy. Prices are unchanged. Extra creamery 25c; firsts 23c; dairy 21c; packing stock 18c.

**Eggs.**—The market is fairly active at prices ½c lower than last week. Quotations for the week are 24c per pound.

**Chicago.**—Fancy makes are firm at prices ½c lower than last week. Lower grades are easy. Moderate amount of business being transacted. Extra creamery 24c; extra firsts 23@23½c; firsts 22@22½c; seconds 20@21½c; packing stock 19@19½c.

**Poultry.**—Receipts light, especially of good stock. Prices about the same as last week. Market firm. Live.—Broilers, No. 1, 16@17c; No. 2, 14½@15c; heavy hens 15c; others 12@14c per pound.

**Chicago.**—Heavy hens sell well, but thin stock is discriminated against. Springs are firm. Fowls, good weights 13@14c; spring chickens 16@16½c; ducks 12@13c; geese 8c; guinea hens \$2.75@3 per dozen.

**Eggs.**—Receipts are only moderate and market is firm at an advance of 1c over last week. Canned firsts sell at 21c; current receipts 20½c.

**Chicago.**—Market is firm at prices 1c higher than last week. Receipts are moderate and demand is good. Miscellaneous lots, cases included 17@21c; ordinary firsts 19@19½c; firsts 20½@21c.

**Veal.**—Quoted steady at 14@14½c for fancy, and 13@13½c for common.

## FRUITS AND VEGETABLES.

**Apples.**—Quality fruit in ample supply. Poor stuff flooding the market. Fancy Duchess apples bring \$2.25; common \$1@1.25 per bbl.

**Chicago.**—Market dull, although the tone is slightly better. Prices are low. Duchess quoted at \$1.25@2; Ashtarian \$1.25; Transparents \$1.25@2.

**Pears.**—Market is fair for good stock, good Bartletts bringing \$4.75@5 per bbl.

**Chicago.**—Market is steady at fairly good prices. Clapp's Favorite sell at \$3.50@4.50; Bartletts \$4.50@5 per bbl.

**Blackberries.**—Active at \$1.75@2 per 16-qt. case.

**Chicago.**—Demand and receipts are moderate. Market quiet. Wilsons and dewberries quoted at \$1.10@1.25.

**Peaches.**—Markets active, although supply is ample. Island peaches bring 15@20c per 1-5 bu. basket.

**Chicago.**—Offerings are smaller. Southern peaches still hold market. Michigan clings sell at 40@50c per bushel, 8@12c per 1-5 bushel basket; St. Johns 75@80c.

## WOOL.

**Boston.**—The aggregate of sales last week was large and the outlook for continued higher prices is unclouded. The wool situation is stronger than it has been for two years. War orders have been recently accepted on this side, and the domestic demand is strong. Fleeces are receiving larger inquiry, and prices are being well maintained. Good business is being done in territory wools, and there is an active demand for both pulled and scoured grades.

## GRAND RAPIDS.

Fresh eggs are quoted at 18½@19c, which is an advance of a cent in the past two weeks. Dairy butter is quoted at 24@25c. Potatoes are selling on the city market at 35@40c, with supply ample for all wants. Reports are heard of potatoes starting to rot in clay and low ground. Fruit on the market has a range about as follows: Plums 75c@1.25; peaches \$1@1.50; Duchess apples 30@40c; huckleberries \$2@2.50. Wheat barely touches the \$1 mark, No. 2 red being quoted at 99c. Other grain is quoted at the mills as follows: Rye 85c; corn 76c; oats 58c; beans \$2.65.

## DETROIT EASTERN MARKET.

Much business was done Tuesday morning at fairly steady prices. Tomatoes are selling up to \$1.25 per bu; coming in quite freely. Plums are plentiful at \$1.50 per bu; potatoes 65c; apples 75c@1; onions 70c per bu; do. silver 10c per qt; cabbage 30c per bu; lettuce 40c; cauliflower \$1.25 per bu; beets 30c; cucumbers, small 25@30c per hundred; medium to large \$1@1.50 per bu; celery 25@30c per bunch; eggs 30c per dozen; butter 35c. Loose hay of good quality is selling around \$20.

## LIVE STOCK MARKETS.

### Buffalo.

August 23, 1915.

(Special Report of Dunning & Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts here today as follows: Cattle 165 cars; hogs 90 d. d.; sheep and lambs 15 d. d.; calves 800 head.

With 165 loads of cattle on the market here today and 18,000 reported in Chicago and lower, our market was all the way from 20@35c per cwt. lower than last week and there are several loads going over unsold. The good cattle did not suffer so badly today as the common kind, as there are too many of the common cattle coming to market. There has been no change yet in regard to letting stockers be reshipped from these yards.

Receipts of hogs were about like we have had for the last few Mondays, but short runs were reported all over the west, stimulating our buyers a little, and consequently having a 10@15c higher market than the close of last week. Sales again were very uneven, ranging from \$7.35@8.35, the lighter hog the higher the price; \$7.35 took hogs weighing around 300 lbs. that were extra good, while some 225 to 250 ranged in price from \$7.50@7.90. Quite a number of 200-lb. hogs sold around \$7.90@8; yorkers and pigs from \$8.20@8.35; roughs \$5.50@6; stags \$4.50@5. About everything sold at the close and late trade was fairly good on anything light, although the demand for hogs weighing above 225 was not very urgent.

The market was active today on lambs and sheep, with prices quarter higher than the close of last week on lambs, sheep firm; most of the choice lambs selling at \$9.25. Look for steady prices last of week with moderate receipts.

We quote: Lambs \$9@9.25; cull to fair \$7.50@8.75; yearlings \$7@7.50; bucks \$3@5.50; handy ewes \$6@6.25; heavy ewes \$5.50@6; wethers \$6.25@6.50; cull sheep \$3@5; veals, choice to extra \$12.50@13; fair to good \$8.50@12; heavy calves \$5@8.50.

### Chicago.

August 23, 1915.

Cattle. Hogs. Sheep.

Received today..20,000 20,000 7,000  
Same day 1914..18,421 31,563 37,332  
Last week.....42,959 92,317 64,073  
Same wk 1914..52,209 91,801 95,288

The cattle run today included over 4,000 western rangers. Buyers turned their attention early to good cattle, which sold at steady prices, but others were neglected and were expected to sell about a dime lower. The hog market was lively and 5@15c higher, most of the advance being in medium grades and mixed lots. Hogs brought \$6@7.90. Last week's hog receipts averaged 248 lbs. Choice native lambs sold up to \$8.80, and prime range lambs were expected to bring \$9 or more, the receipts of sheep and lambs being extremely small for Monday.

Shipments from here last week amount to 10,518 cattle, 18,772 hogs and 2,385 sheep, comparing with 17,278 cattle, 12,376 hogs and 12,661 sheep for the corresponding week of 1914.

Cattle were weak or strong last week, depending on their quality and weight, killers showing much discrimination in making their selections and refusing to buy the poorer kinds except at lower prices, while they purchased choice light steers, especially prime yearlings, much more freely than the long-fed heavy beefs. Instead of the expected big Monday run, only 18,689 head arrived on that day, and the market was active and 10c or more higher for desirable lots of steers, cows and heifers, but inferior, grassy cattle sold no better. By Wednesday the demand was slack, and the market weakened on receipts of 17,207 head, sales being made largely 15@20c lower than on Monday. Steers sold during the week largely at \$8.40@9.75, with sales of common to plain grass steers at \$6@7.45, common to medium warmed-up lots at \$7.50@8.30, medium to good handy steers at \$8.35@8.95, good to choice corn-fed at \$9@9.40 and choice to prime heavy steers at \$9.50@10.10. Choice to fancy yearling steers went at \$9.50@10.25, good lots of such cattle selling at \$9 and upward, and sales all the way down to \$7.50@8.50 for common to fair lots. Butchering cows and heifers were salable at \$4.80@9.75 for common to fancy offerings, with prime yearling heifers the highest sellers. Prime cows brought \$8@8.50 and there was a sale of 50 head of superior 818-lb. yearling heifers at \$9.75. Cutters went at \$4.15@4.75, canners at \$2.75@4.10 and bulls at \$4.50@8. Calves were in good demand on the basis of \$4.75@9 for heavy weights and at \$11@12.30 for light vealers, prices for latter advancing under a strong demand. The receipts of western range cattle fell short of expectations, and offerings had a good outlet at \$7.45@9.25. Receipts of these cattle were largely from Montana, and a sale was made

of 31 fat 1,421-lb. Montanas at \$9.25.

Hogs sold extremely wide apart in prices last week, and although even the choicer offerings suffered breaks, the worst declines by far took place in the heavy weights, which were extremely numerous. Choice hogs of light weight, such as are wanted by eastern shippers, were offered sparingly and sold highest of all, with choice heavy shipping hogs at a big discount, and the coarse, heavy grassy packing hogs the lowest of all. Recent receipts of hogs averaged in weight 247 lbs., comparing with 244 lbs. a week earlier, 243 lbs. one year ago and 235 lbs. two years ago. Pigs are plentiful throughout the country, but they are being fattened, and no large numbers are coming on the market, prime pigs of strong weight selling as high as the best matured hogs. When the week closed hogs sold at \$5.85@6.30 for heavy packers, \$6.35@7 for heavy shipping lots, \$7@7.65 for light bacon, \$7.70@7.85 for light shipping and \$6@7.85 for pigs.

Recent sheep receipts have been furnished mainly by the Idaho, Montana, Oregon and Washington ranges, lambs predominating, although fair numbers of yearlings and wethers showed up at times. Native lambs and native ewes were in fair supply. The local packers did most of the buying, the shipping demand being very limited. At the week's close lambs sold at \$6@8.75, yearlings at \$6@7.25, wethers at \$5.85@6.75, ewes at \$3@6.25 and bucks at \$4@5. During the preceding week lambs sold up to \$9.50.

Horses were in ample supply last week and in good demand, British and French agents taking a good many for army purposes. Rejected horses that failed to meet their requirements sold at \$85@130, and good mares brought \$135@160. Not many horses went above \$210, a few prime horses being sold at \$240@250.

## LIVE STOCK NEWS.

Wide-spread efforts are being made in many parts of the country to restock pastures and ranges with cattle, and this is especially true of the range country of the northwest, including the Dakotas, Montana and Wyoming. Large numbers of stock cattle are wanted in Indiana, Ohio, Michigan and Pennsylvania, but Illinois and Iowa stockmen shipped in a good many thin cattle from western points earlier in the year. Across the international boundary line there is a great need of more cattle, and it is safe to say that Canada could easily take care of at least a million head of stock cattle. There is no danger of any overproduction of beef this year, and marketing thin, grassy cattle of light weight is a serious mistake. No considerable imports of beef into the United States are now being made, and about all of the surplus of South American beef is going to European countries. Furthermore, our American packers are all the time liberal exporters of fresh and cured meats to England and France. Western range cattle are being marketed in increasing volume as the season advances, and they average well in quality, the packers showing their usual preference for them over their native grassy competitors. Some of the recent receipts of range cattle that came off soft grass shrank heavily in transit and failed to return as much profit as was expected. As a rule, range cattle are being held back for a good finish, and the bulk will arrive on the market later than usual for this reason. Naturally, the buyers are discriminating against cattle that are a little soft in flesh, as they do not dress as well as others. Light, grassy steers that weigh under 1,000 lbs. are undesirable on the Chicago market and should not be marketed at this time. Such cattle have declined in prices lately and should be matured, as feed is abundant everywhere.

There was a fine, big crop of spring pigs in most parts of the corn belt this year, and most of the pigs are in healthy condition, there being very little hog cholera. Prime pigs carrying considerable weight are far from plentiful in the Chicago market and sell as high as prime hogs of light weight. Choice roasting pigs of from 40 to 50 lbs. are in especially lively demand and have sold recently as high as \$8 per cwt.

Moderate supplies of range feeding lambs have shown up of late on the Omaha market, and sales are reported of consignments averaging from 50 to 58 lbs. at \$8@8.20 per 100 lbs. The quarantine maintained at Chicago on account of the foot-and-mouth disease has prevented any shipments of feeders from there, and intending buyers were compelled to look elsewhere for supplies. Pasture on the Idaho, Montana, Oregon, Washington, and other ranges is superb, and for this reason flockmasters are not expected to market a great many lambs until they are in good condition for the packers.



## THIS IS THE FIRST 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 MARKETS.

Thursday's Market.  
August 19, 1915.  
Cattle.

Receipts 2239. There was another heavy supply of cattle on hand at the local stock yards this week and a dull draggy market from start to finish. While choice steers sold well and brought steady last week's prices all other grades were 15¢ to 25¢ lower and on Wednesday night a large number were left over unsold. Wednesday seems to be the leading market day here at present, especially for cattle which makes it some better and gives more time to clean up later in the week. There is nothing new in the milch cow or stocker and feeder situation; the quarantine regulations are still in force and nothing can be handled but for immediate slaughter. Best heavy steers \$8@8.50; best handy weight butcher steers \$7.50@7.65; mixed steers and heifers \$6.50@7.15; light light butchers \$6@6.15; light butchers \$5.25@6; best cows \$5.75@6; butcher cows \$5@5.50; common cows \$4.25@4.75; canners \$3@4; best heavy bulls \$5.50@5.75; bologna bulls \$5@5.50.

Bishop, B. & H. sold Newton B. Co. 14 steers av 767 at \$6.50; to Parker, W. & Co. 20 do av 1104 at \$7.75; to Raznick 15 butchers av 595 at \$5.10; to Parker, W. & Co. 2 cows av 850 at \$5.25, 3 bulls av 850 at \$5.25, 10 canners av 829 at \$4, 15 butchers av 900 at \$7, 24 do av 850 at \$7; to Bresnahan 17 steers av 1130 at \$7.60, 2 bulls av 1300 at \$6; to Hammond, S. & Co. 15 steers av 900 at \$7.50; to Bresnahan 2 oxen av 1820 at \$7.40, 1 bull wgh 1370 at \$5.50, 2 steers av 1270 at \$8, 3 cows av 1083 at \$6; to Grant 7 butchers av 550 at \$4.60; to Hammond, S. & Co. 21 steers av 1133 at \$8.35, 1 do wgh 830 at \$7, 22 do av 1055 at \$8.15; to Sullivan P. Co. 5 cows av 1000 at \$5.25, 11 butchers av 882 at \$6.50, 7 cows av 930 at \$5, 4 do av 1115 at \$5.35, 4 steers av 845 at \$7.35; to Bresnahan 6 do av 850 at \$6.25; to Parker, W. & Co. 29 butchers av 800 at \$6.50, 3 cows av 1020 at \$5; to Denton 16 steers av 960 at \$7, 5 do av 890 at \$6.50, 5 do av 770 at \$6; to Fineman 5 cows av 1026 at \$5.25.

Reason & S. sold Razneck 8 butchers av 630 at \$5.50, 12 do av 733 at \$6; to Sullivan P. Co. 2 bulls av 935 at \$5.25; to Hammond, S. & Co. 5 steers av 972 at \$7.65, 4 cows av 1035 at \$5.50, 1 bull wgh 1100 at \$5.50; to Bresnahan 7 butchers av 957 at \$7, 2 steers av 1005 at \$6.50, 1 cow wgh 970 at \$5.25, 5 canners av 856 at \$4, 4 cows av 1140 at \$6, 5 do av 1180 at \$5; to Bray 4 do av 1150 at \$6.

## Veal Calves.

Receipts 470. The veal calf trade opened steady on good grades and slow and lower on cull grades, heavy thin grades being very hard to sell. Best \$11@11.50; culls \$7@9; heavy \$5@6.

Haley & M. sold Parker, W. & Co. 7 av 185 at \$11, 2 av 270 at \$10, 13 av 150 at \$11; to Newton B. Co. 2 av 165 at \$11; to Goose 10 av 252 at \$5.50.

## Sheep and Lambs.

Receipts 3184. The sheep and lamb trade was fairly active at Wednesday's prices. Top lambs bringing \$8.25 and sheep \$5.50. The close was steady as follows: Best lambs \$8@8.25; fair lambs \$7@7.50; light to common do, \$6@6.75; fair to good sheep \$4.50@5.50; culls and common \$2.50@3.50.

Sandel, S., B. & G. sold Mich. B. Co. 7 sheep av 110 at \$4.75; to Hammond, S. & Co. 24 do av 115 at \$5.10, 6 lambs av 65 at \$4.50, 6 do av 63 at \$7; to Parker, W. & Co. 35 do av 75 at \$8.25; to Mich. B. Co. 46 do av 65 at \$7.50, 29 sheep av 90 at \$5.50; to Sullivan, P. Co. 10 do av 88 at \$2.75, 28 lambs av 80 at \$7.25, 9 sheep av 100 at \$5, 13 lambs av 70 at \$7.50, 15 do av 80 at \$8.25, 128 do av 75 at \$7.50, 43 do av 80 at \$7.60, 13 sheep av 115 at \$5; to Mich. B. Co. 29 lambs av 50 at \$7, 8 sheep av 110 at \$5; to Hammond, S. & Co. 55 lambs av 73 at \$7.90, 56 do av 65 at \$7.90; to Sullivan P. Co. 62 do av 75 at \$7.85, 128 do av 75 at \$7.50, 8 sheep av 140 at \$5.25.

## Hogs.

Receipts 3858. In the hog department the trade was the same as on Wednesday. Pigs, yorkers and mixed packers' grades \$7.60; heavy and roughs \$6.75@7.25; roughs very dull.

Bishop, B. & H. sold Parker, W. & Co. 790 av 190 at \$7.60, 180 av 210 at \$7.60.

Sandel, S., B. & G. sold Hammond, S. & Co. 450 av 190 at \$7.60, 150 av 215 at \$7.60.

Haley & M. sold same 225 av 190 at \$7.60.

Reason & S. sold same 155 av 180 at \$7.60.

## LIVE STOCK NEWS.

Already there is an active inquiry for range lambs adapted for finishing on western farms, but extremely few flocks have shown up as yet, and these have brought unparalleled high prices invariably. Because of the rigid quarantine maintained in the Chicago stock yards on account of the foot-and-mouth disease, that market has been receiving much less than its usual quota of sheep, yearlings and lambs, and more than in former years have been headed for Omaha and other Missouri river markets. Native lambs and sheep have been largely marketed, the south has been shipping out the last of the southern spring lamb crop born in Tennessee and Kentucky, and now the customary large shipments of lambs and yearlings, but more especially spring lambs, are being made by flockmasters of such states as Idaho, Montana, Washington and Oregon. Thus far these have ran mainly to fat flocks adapted for the meat trade, and few feeding lambs have shown up. Grass on the ranges is described as unusually luxuriant, and general market conditions are such as to encourage to the fullest extent sheepmen of the range country to wait until their holdings are good and fat. For this reason, it is not at all likely that large numbers of feeders from the ranges will be sent to market. That they will sell extremely high throughout the season appears to be a foregone conclusion. A short time ago there was a sale of eight double-decks of range feeding lambs on the Omaha market at the unheard-of August price of \$8.50 per 100 lbs., and at nearly the same time some feeding lambs from the range country that tipped the scales at from 47 to 49 lbs. sold for \$8.20. Iowa buyers, with plenty of grain feed going to waste, and in numerous instances with lots of small grain in soggy fields that could not be harvested, have shown extreme eagerness to get hold of feeding lambs in the Omaha market at reasonable prices, but thus far they have met with disappointment. A demand for high-class range breeding ewes and rams is starting up, but offerings are few and prices extremely high.

Angus cattle have become extremely popular in Texas, and breeders are good buyers. J. H. Seright, a prominent stockman of that state, has sold his Angus calf crop for \$100 per head. Farmers living in Wisconsin and Minnesota have been reluctant to sell their good heifer calves this year, and many are getting back into beef raising, realizing that well-bred beef cattle are scarce nearly everywhere.

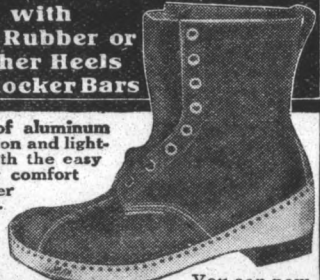
J. H. Murray, of Holt county, Mo., marketed in St. Joseph in that state recently four loads of mixed cattle, mostly yearlings and two-year-olds, at \$8.65 to \$8.75 per 100 lbs. They were fed on ensilage and alfalfa. "Our cattle were fed little dry grain," said Mr. Murray. "Ensilage and alfalfa comprised the principal part of the feeding ration, and the cattle made a highly satisfactory gain in weight and flesh. We have found that the policy of raising and feeding our own cattle and utilizing the roughness of the farm in the form of ensilage a very profitable one."

The serious decline in hog prices from those paid in recent years is reflected in similar declines in prices for provisions, but, unfortunately, similar declines have not taken place in retail meat shops.

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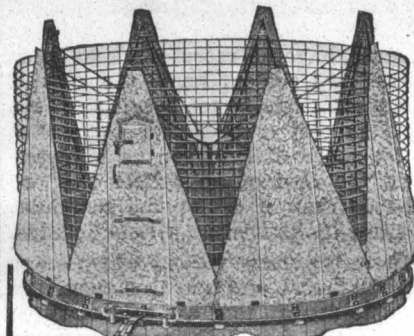
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WE CAN SELL STOCKERS and feeders, also feeding lambs, consign here to us or if you are in the market for feeding stock write or wire us. HARPSTER COMMISSION COMPANY, Toledo Union Stock Yards, Toledo, Ohio.

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# Farm Commerce.

## Complex Marketing Methods

THE present abundance of fresh vegetables and fruits brings with it the perennial necessity for their rapid, economical distribution and for encouraging a generous and steady consumption. The machinery for moving these food products is complex and retail dealers are often accused of not following closely the wholesale market quotations; that in times of glutted markets they do not cut prices severely and aid in a rapid movement from producer to consumer. But the responsibility for slow and uneconomic movement into consumptive channels is difficult to trace. The large class of food distributors known as "middlemen" are often accused of levying, arbitrarily, a heavy tribute on all foodstuffs passing from the producer to the consumer. The attention of the public has been frequently directed to increased costs of products rather than service rendered. The new United States Department of Agriculture Bulletin No. 267, "Methods of Wholesale Distribution of Fruits and Vegetables on Large Markets," does not indict the "middlemen" as a class, although it can point out some abuses in the trade. As a matter of fact, say the department's specialists, when discussing the present marketing organization, economic laws would not permit the long continued existence of a marketing agency which was solely a parasite.

### Middlemen Necessary Agents.

Several important factors have contributed to the establishment of many middlemen as necessary agents in the present system of marketing. Production during the last decade has increased greatly, and improved methods and facilities for handling the increase have been introduced. Keeping pace with increased production has come the demand of consumers for more elaborate and efficient service. Seldom is the fact considered that service can become a very expensive luxury. With the widening of the distance between the city and the sources of its fruit and vegetable supplies there has arisen the necessity for special agencies to meet the changed conditions.

The present distributive machinery, with all its strong points and its weaknesses, has been created of necessity, and it has weathered the storm of much adverse criticism. Every part of the country is now enjoying the perishable products of the most remote districts. Any readjustment of present market practices must be based upon the fact that some agency must continue to perform the functions of the present-day middlemen.

### Marketing a Special Business.

The problems involved in handling goods through a large market differ greatly from those of production. Usually one man or one firm can not handle both production and distribution and succeed at both. The vast volume of business transacted at large market centers makes necessary some special agencies which can devote all their energies to distribution. Especially does the machinery for efficient marketing become necessary when perishable goods are to be handled. Commodities of this sort must be moved rapidly, must be distributed evenly, and from their very nature permit of no weakness in distributive machinery, if they are to be sold at a profit.

### Some Causes of Loss and Wastes.

With the perishable nature of a large part of the fruits and vegetables marketed there must be some loss. This often totals higher than the farm-

er realizes. For instance the loss on such commodities as strawberries, peaches, and grapes, sometimes amount to 30 or 40 per cent before they reach the hands of the retail trade. Losses due to spoiling may be the result of the shipper's sending overripe or diseased fruit, or failing to give proper attention to packing, to loading, or to bracing the packages in the car. Sometimes the railroad is at fault. Delay in transit, improper ventilation or refrigeration, or unnecessarily rough handling of cars may contribute to rapid deterioration of the shipment on arrival.

The lack of proper refrigeration facilities at distributing centers is a cause of much loss. When produce moves slowly, there is often much spoilage before complete sales can be made. Rough handling during unloading or carting is another important cause of loss. As a matter of fact, the opportunities for losses due to the spoiling of commodities are so manifold that it is impossible to enter into a complete discussion of them.

### Harvesting Methods Cause Losses.

It is always well to bear in mind the really serious side of losses and wastes. The spoiling of a dozen cantaloupes, a basket of grapes, or a crate of strawberries represents an

absolute loss to the community. No benefit accrues to producer, distributor, or consumer from such a condition. The loss occurring at this point must be borne by both producer and consumer, and in a great many cases the distributor must bear his part of the burden. In many cases losses and wastes are entirely too heavy a tax on food distribution and the elimination of unnecessary wastes would do as much toward effecting permanent, substantial economies in marketing and distributing as any readjustment of present marketing methods could do. The fact that a large percentage of these losses can be avoided by proper grading, packing, and shipping, together with prompt, efficient handling while the goods are in process of distribution, makes it imperative that this subject be given special consideration by those interested in the efficient marketing of farm crops.

### Farmer Should Understand Complex Marketing Methods.

A better understanding by the farmer of the complex marketing machinery would enable him to intelligently choose between the many channels through which his fruits and vegetables might be marketed. The new bulletin aims to make clear to the layman the rather intricate machinery of the market and deals with methods of receiving, inspection, rejections, terminal distribution and sales methods, the broker, auction sales, carlot wholesalers, commission merchants, jobbing sales, public markets, etc. This bulletin may be had free by those interested upon application to the United States Department of Agriculture, Washington, D. C.

## Increasing the Margin of Profit

EVERY merchant has the cost price as well as the selling price marked on his goods in figures that are plain to him if not to his customers. If a customer demands a price that is lower than the one asked the merchant knows just how far he can go in meeting the demand without losing money. Unfortunately, we as farmers, have no secret mark to guide us and we seldom know the cost of our goods. This is not because we are shiftless and careless but because it is far more difficult for us to determine the cost of an article that we produce than it is for the merchant to know the cost of an article he buys.

There are many factors which enter into that cost and most of them are variable factors that are seldom twice alike. Even should the cost of growing an acre of some certain crop be the same this year as last, variations in yield may make the price per pound or per bushel differ widely. None of these things however, lessens the importance of the cost mark. We hold no special permit that will enable us to violate the laws of trade without suffering the penalty. We cannot sell our products below the cost of production and make money on the transaction. If the cost of producing a bushel of some farm product is 40 cents there is of course no profit in selling it at 40 cents, no matter how many thousand bushels may be grown.

The chief point is to make the margin between the cost of production and the selling price as great as possible and there are several factors which enter into the accomplishment of this. First in importance is economical production. Only good crops pay but not all good crops pay. It is possible to obtain a good crop and to do it at a cost so great that there is left no margin of profit at all. On the other hand it is just as easy to err on the other side by failing to put enough expense into a crop or an animal to get the best returns. In the production of a crop there are certain fixed expenses that we must bear and these will be about the same whether the yield is

heavy or light. It is often the case that, though with this initial outlay alone the returns may be made to equal or perhaps slightly exceed the cost, if a little extra money is spent in the way of fertilizers better care and tillage, the returns may be greatly increased. With the growing animal a certain amount of feed counts for nothing in added growth or production. It is from additional feed that all the profit must come.

The most obvious way to increase the margin of profit is to increase the selling price. If it costs 40 cents a bushel to produce a crop there is as much profit in selling one bushel at 50 cents as in selling two bushels at 45 cents. On staple articles of standard grade we cannot expect to set our own selling price but on unusual products of high quality we may often

part in the problem of distribution and often provides the most satisfactory and least expensive means of making sales but he should not exact unreasonable fees for his services. We must remember that we have to bear the cost of selling, even if we make the sales ourselves and sometimes the cost is heavier under these conditions than when the produce is sold through the middleman. The man who spends a day with his team in selling \$15 worth of produce direct to consumers is footing a heavy bill for the cost of selling, as well as the man who turns his produce over to the middleman for him to sell. On the farm as well as elsewhere it is in the margin of profit that lies the kernel of financial success and the problem deserves the best thought that can be given to it.

Illinois.

W. M. HARDY.

### WILL THE END BE CO-OPERATION?

The co-operator feels that he should be heard at this point and he tells us that "if the growers were properly organized so they could assemble their products and ship in large units, and on the other hand, if the consumers were bound together with business ties so they could buy in carlots then the foundation would be down for a real sensible and scientific marketing plan!" We must agree to the words of the co-operator, for where producers and consumers have gotten together as in Denmark, Germany, Ireland and other countries it has been a comparatively simple matter to extend the organization until it embraces a comprehensive selling and buying scheme.

But it seems that we are quite a ways from so complete an organization. Taken as a whole, we need not alone education along the line of working together, but skill growing out of personal experience before we can build co-operative organizations of any large dimensions. We cannot put these things upon a community like a mantle, but they must take root and grow into the community life. We have got to breathe the air of, and drink of the cup of a new order, before we are willing to let an organization do our buying and selling.

### MAKES GOOD USE OF HIS RUNABOUT.

Two years ago James H. Jones, an automobile engineer and motor designer, gave up that work entirely and backed to the land at South Hadley, Mass. He has made one big success of it. His only connection with the auto "industry," is to do a little consulting work occasionally and exercise



Roadster and Trailer Coupled Together by a Fifth Wheel Attachment.

do this. Another point that has an important bearing on the margin of profit is the cost of selling. This cost is bound to be high but it should under average conditions of distribution and sale be made much lower than it is at the present time.

The middleman is not always to be condemned, for he plays an important

his trusty runabout to keep it from getting too fat in the rich pastures of South Hadley. Jim says, "if I couldn't have that car I would give up farming and go to work again."

His latest stunt with the car was to make it act as a tractor to draw an express wagon of 1,500 pounds capacity. Of this stunt he says: "With



just a little box back of the driver's seat the car would hardly do all our light hauling to and from town; so I tried towing an express wagon by roping the shafts to the frame of the car, but I found there was not weight enough on the driving wheels for traction on the hills and soft places—besides, it was impossible to back the wagon. Finally I bought a rocking fifth wheel connection and mounted the wagon semi-trailer fashion, and now have plenty of weight for traction and can back it into any place. It is so easy to connect and disconnect that we use the car for a work horse on week days and a pleasure car on Sunday."

Mr. Jones recently bought a herd of extra fine Guernsey cattle at a place 50 miles from his farm, and he hauled them home, one animal at a time, with the car. The picture shows the king of the herd upon his arrival who kindly consented to pose in his limousine.

Mass.

C. H. MARTIN.

## Crop and Market Notes.

### Michigan.

**Calhoun Co., Aug. 14.**—There is lots of grain in the field yet on account of rain. It is most too wet for corn and potatoes. Early potatoes are commencing to grow again and late ones are setting too much. If it comes off dry late potatoes will be quite small. Meadows are growing fine and are nearly as large as the first crop. Very little threshing done yet on account of wet weather. There is quite a little plowing done; beans are large with some pieces affected badly with the blight. Wheat is \$1 per bushel; new oats are not threshed yet. Rye about 80c; potatoes 35c; corn will be a good crop but late. No peaches; a few apples, very few pears and plums.

**Monroe Co., Aug. 16.**—Oat harvest and threshing delayed from two to three weeks on account of the continued wet weather. Timothy and clover yielding one to two tons per acre. Alfalfa about the same. Wheat yield is good, some fields going 50 bushels an acre. Some wheat growing in the shock. Rye is going 15 to 20 bushels an acre. About one-half of the oat crop almost total loss, a large acreage still to be cut and some under water. While corn is not doing as well as it should the condition is more promising than 10 days ago. The potato crop hurt some but weather conditions seem more favorable just at present for a fair crop. Fall plowing not yet commenced. Poor prospect for fruit of all kinds. Wool 25c@30c; wheat \$1; eggs 18c; butter-fat 25c; potatoes 35c@40c.

**Mecosta Co., Aug. 16.**—Hay all kinds an average crop. More wheat sown last year than usual and yield was big but much of it grown bad. Rye looks good; oats have a big growth but not well filled. Much of them lodged badly by the storm. No threshing done as yet. Corn and potatoes very late. Bugs on the potatoes worst in years; crop is about 80 per cent of normal. Beans making a good growth but rusting very badly. Less preparation for wheat than common as everything is late. Apples and other fruits poor.

**Washtenaw Co., Aug. 18.**—Barley is moulding and likely to be an entire failure. The second crop of alfalfa is more than ready for cutting. Wheat and oats are yielding high while rye is fair. Local quotations are: Hogs, dressed \$9.50; spring lambs \$7@8.50; sheep \$5@6; cows \$3@5; veal calves \$9@9.50; steers \$5@7.50; heifers \$4@7; spring chickens 15c; fowls 12½c; dairy butter 27c; eggs 18c; old oats 55c; new oats 35c; wheat, No. 2 red \$1.07; wheat, white \$1.05; new rye 93c per bushel.

### Pennsylvania.

**Lancaster Co., Aug. 16.**—Yield of hay, clover and alfalfa was fairly good. Not much barley or rye raised here. Most wheat and oats have not been threshed. Oat harvest has been hindered by abundant rains. Corn and potatoes in very good condition except where beaten by a recent severe storm. Roads are badly washed, and creeks have over-run their banks, and trains have been wrecked. Plowing has been commenced. Prospects for fruit are excellent. Pear blight has not spread recently, and crops will be fairly good.

**Tioga Co., Aug. 17.**—We have had almost 60 days of continuous rain, with gaps of a day or two between showers. Haying is about completed. The crop has been damaged some by rain. But is a larger crop than the average. Oats are much above an average crop. Long straw and well headed. Some have lodged, but as a whole stands well considering the amount of rainfall. Most all oats, wheat and rye

have been cut by cradle as ground has been so soft binders could not be used. Corn very much retarded in growth, fully 20 days late. Potatoes are rotting badly, all the early planted have blight. Late potatoes looking well but not many planted. Wheat \$1.15; rye \$1; oats 60c; hay \$15; potatoes 75c; butter 28c; eggs 20c; milch cows \$40@75 for grades; full blooded \$100@200. Sheep have not done so well as usual, possibly due to wet weather. Lamb crop is light.

### Ohio.

**Paulding Co., Aug. 16.**—The continued wet weather has injured the crops some. Some wheat threshed, quality good, acreage small. Oats are a good crop, some growing in the shocks. Hay, clover and alfalfa good but a poor time to harvest. Corn, beans and potatoes doing well except where damaged by wet weather. Early apples nearly all gone. Not a very large crop of late apples. A few pears and plums. Corn \$1.10 per cwt; wheat \$1; oats 35c; apples 40c; potatoes 60c; butter-fat 22c; eggs 18c.

**Hancock Co., Aug. 16.**—Yield of hay, clover and alfalfa was good but rainy weather caused it to be of poor quality. Wheat very good, yielding from 25 to 30 bushels per acre. Oats only about one-half cut, due to wet weather. Is down very bad and some will not be cut. Wheat is only a fair quality. Corn is growing big fodder and is earing up well. Apples a fair crop with few pears and plums and no peaches. Wool 28@30c; butter-fat is 24c; new wheat \$1@1.05.

**Ashtabula Co., Aug. 14.**—Weather is wet and cool. Haying being done under difficulties. Oat harvest now on and about half done, prospect good for a heavy crop. Wheat is yielding from 15 to 47 bushels; new seeding of good hay about two-thirds of a crop; corn is weedy and will make about half a crop. Not much of a prospect for fruit. Milk \$1 per cwt; cows are milking well for pastures are extremely good. Dairy butter 26c; eggs 22c per dozen; chickens 13c; hogs 7c; veal 8½c; beef scarce, dressed 10c; new potatoes 75c.

**Carroll Co., Aug. 18.**—Farmers are having a hard time harvesting this year. We are getting too much rain. Some have not got their oats cut yet, and many acres of grass are still standing. Lots of smut in the oats. Most of the corn looks good. Our roads are in pretty bad condition for this time of the year. The people in the bottoms had a hard time getting their wheat and oats cut. Threshing machines have started out this week.

### Missouri.

**Vernon Co., Aug. 16.**—Weather hot, with showers occasionally. Threshing is in full swing; grain not turning out very well owing to the over-ripeness when harvested. Wheat average is eight to 10 bushels; oats 12 to 15 bushels. Lots of ground being prepared for wheat seeding again. Corn will make about 40 per cent of a crop. Wheat selling for \$1; oats 35c; corn 72c; hay \$5; butter 25c; butter-fat 28c; hens 10c; springs 14c; eggs 15c; not much live stock in the country.

### Nebraska.

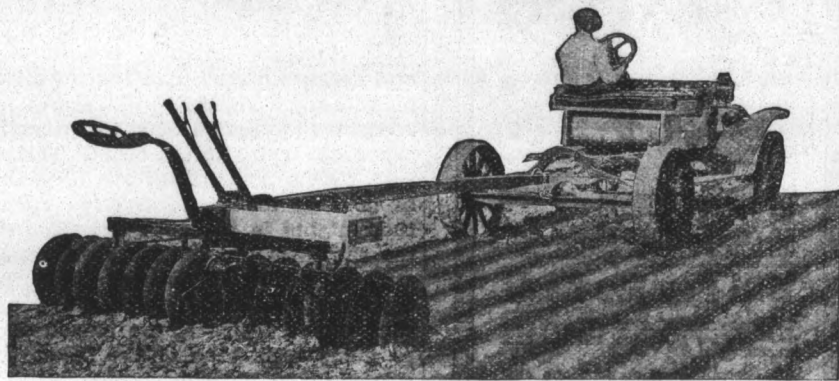
**Cass Co., Aug. 17.**—Very wet weather still continues. Nearly all hay gets wet and some spoiled before it can be saved. Grain is badly hurt in the shock. Nearly everybody is stacking as fast as possible. No threshing has been done as yet. Corn is doing well but is two weeks behind and unless we have late frost there will not be much matured corn. Potatoes are good but some are commencing to rot. Fall plowing has commenced but the ground is very wet. Early apples are very plentiful and no sale. Prospects are for about half a crop of late apples. But few plums and no peaches or pears. Wheat 90c; oats 45c; corn 70c; hogs \$6.50; cattle 4½@6c; butter 25c; eggs 13c. Land prices high and strong.

### South Dakota.

**Meade Co., Aug. 11.**—Yield of hay and alfalfa is immense, never as big before. Alfalfa is in full blossom for the second and third time. Harvest of small grain not started; all small grains are from three to four feet high and bids fair to be a large crop. Corn is a backward crop on account of cold and too much rain but with late fall will be good. Potatoes are a good large crop, also beans. Cream is 22c; butter 25c; wool 25c. This year is a bad one for all kinds of fruit, scarcely any apples or plums.

**Todd Co., Aug. 13.**—Farmers are busy with haying and harvesting. The hay crop is heavy this year. Alfalfa is also good, better than before. No threshing has been done yet but the quality of the grain is good, kernels large. Potatoes and beans are in good condition. The corn is not advanced as far as last year but is growing fast, most of it has tasseled out now, and has good long stalks. Farmers have not made any preparations yet for fall seeding. No fruit. The grass fat cattle are about ready for market. Butter-fat 26c; eggs 20c; wheat \$1.25@1.38; oats 42c; rye 75c; corn 57c.

## Make Your Own Truck or Tractor



### By Using Your Ford Automobile Equipped with Olson Tractor Wheels.

#### OLSON TRACTOR WHEELS

are attachments for a FORD or other auto—you put them on in place of the regular rear automobile wheels.

They are the result of two years' experimenting to find a means of converting automobiles into tractors and trucks for all 'round work on the farm and city streets. With them, your FORD will pull disc-harrow, binder, mower, tedder or any other farm implement.

With the addition of our special body equipment your Ford is converted into a one-ton truck and when used with a trailer will pull many times this weight.

—and the best part of it is that you can still use your automobile for pleasure riding; it taking but a few minutes to make the change from automobile to tractor or truck, and back again.



Pulling a 5-Ton Load—3 Tons on Ford and Two Tons on Trailer.

#### For Cheapness, Practicability, Simplicity and Stability

there is positively nothing on the market to equal it. Remember there is no pull or load on the chassis. The Draw Bar Yoke and Spring Support are attached directly to the wheels. This relieves the automobile of all strain.

#### You Still Use Your Car For Pleasure

Putting on or taking off the OLSON WHEELS and special body equipment requires but a few minutes as there is no change made in the chassis and but little trouble to put the regular body and wheels on whenever you want to use your car for pleasure. The power of these wheels can be changed—by merely changing the gears in the wheel housing. You can decrease the speed and increase the power to suit your exact needs. These gears are furnished to drive the wheels at 0-15-12-8-4 or 2 miles per hour when motor is developing its full speed on high.

As the speed is decreased the power is increased. The 5-ton load shown in illustration was hauled with a gear ratio which develops 4 miles per hour. For heavier or lighter loads the gears are changed accordingly.

#### You Can Buy Any Part of This Equipment From \$35 to \$650

##### Including the Ford Automobile

If you already have a Ford Automobile you cannot afford to be without this outfit. If you haven't a Ford you can get one and the Olson outfit complete for \$650. You then have a complete pleasure car, truck or tractor, note this point carefully, it will do the work intended for each to your perfect satisfaction and the change from one to the other does not change in any way what the machine is intended for.

These outfits will be exhibited at the State Fair held in Detroit, September 6th to 15th. Be sure to see it while you are there. Send at once for a complete price list of various wheel sets and Ford machines with complete outfit.

**THE SWEDISH CRUCIBLE STEEL COMPANY,**  
Sole Manufacturers in U. S. A. and Canada  
Detroit, Michigan, U. S. A. - Windsor, Ontario, Canada.

## Split Hickory \$39.25

THINK what that means. My big new 5% profit plan has split prices the lowest ever known. Get the New FREE Book.

**Split Hickory**

with 30 days' free road test and 2 years' guarantee. And a price offer that will startle you. Just send me your name on a post card.

H. C. Phelps, Pres.  
The Ohio Carriage Mfg. Co.  
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**\$39.25**

**FILL SILOS QUICK**

Three sizes, 6 to 18 ft. P. direct drive to main cutterhead shaft, 2½ in. in diameter, powerful 6-blade fan on same shaft. Emery wheel attached.

**Sold on trial**

**ROSENTHAL**

**SILO FILLERS**

Backed by guarantee. Write for free Farmer's account and record book also catalog.

**ROSENTHAL CORN HUSKER CO.**  
Box 2  
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**SAVE YOUR APPLES**

With a Monarch Hydraulic Cider Press you can turn your apples into good selling cider. You can also do custom pressing for your neighbors. Our improved high pressure construction gets all the juice from the apples with minimum power. All sizes of Presses, from 15 to 400 barrels a day. A small investment will start you in a profitable business. Ask for free, 60-page Press Catalogue describing our 1915 Outfits.

A. B. FARQUHAR CO., Ltd., Box 112, York, Pa.

**TREE SAWING MACHINE**

For Farmer-Lumbermen

Weights only 50 pounds. Operated by one man, standing up. Saws low down. One man can fell more trees than two men with cross-cut saw. Brand new invention; astonishes everybody. Folding, easily carried; saves labor and backache. Every owner of a wood lot will surely have it. Circular free.

**GLOBE MACHINE CO.**  
6 Bank Bldg., Machias, Me.

**Concrete Mixer Plans**

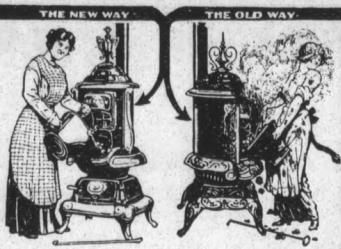
**FREE** Blue prints and instructions for building the best practical home-made concrete mixer invented. Your name on post card brings all **ABSOLUTELY FREE.** WRITE

Sheldon Mfg. Co., Box 2770, Nehawka, Nebr.

## AGENTS WANTED

to represent a reliable concern canvassing among farmers in your own neighborhood or elsewhere. No experience necessary. Liberal pay, and supplies furnished free to right parties. Reference required. Address, **ADVERTISER, CARE THE MICHIGAN FARMER, Detroit, Michigan**





### This Renown Underfeed Heater Will Pay for Itself

The Renown Underfeed will save you one-quarter your fuel bill the first season.

And it will continue to make this saving for you as long as it is in use.

Soft coal is fed underneath the fire. Thus smoke and gas are forced through the red-hot coals where becoming mixed with intensely heated air they are consumed. We burn what others waste.

The Renown Underfeed principle utilizes everything burnable in the fuel.

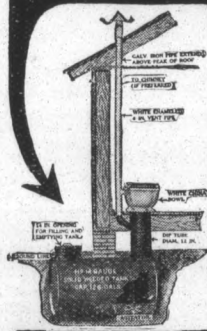
Smoke and soot cannot rush out into the room when you feed the fire. And "puffs" and "explosions" are unknown where a Renown Underfeed Heater or Range is used. Find out about them.

The saving in fuel is alone sufficient to make you want a Renown Underfeed, but this wonderful stove has many other decided advantages that you will want to know about.

Range and Heater Catalog sent free. Shows full line. Write for it and tell us what class you are interested in.

**Independent Stove Co.**  
Owosso, Michigan  
Established 1905

### Abolish Your Unsanitary Outhouse



Don't further endanger family health with the filthy, disease-breeding outhouse, cesspool and sewer—enjoy a health-protecting city comfort—sanitary and odorless, the

#### Kaustine Closet System

Costs a fraction over a penny a day to operate—and no water, no sewer, no plumbing. Enthusiastically endorsed by health authorities. Inexpensive, too—any man can install. Tank emptied in 20 minutes—twice yearly. For farm and village homes, schools, churches, factories. Send for particulars—our representative will call.  
**KAUSTINE CO., Dept. 1099**  
Buffalo, N.Y.

**4000 FERRETS FOR SALE**  
Price list free. C. J. DIMICK, Rochester, Ohio.

#### POULTRY.

**Barred Rock Cockerels**—for Sept. and Oct. fairs, 500 yearling hens and pullets for shows and breeders. W. C. Coffman, R. 6, Benton Harbor, Mich.

**BARRED ROCKS**—Parks 200-egg strain stock and eggs in season. FRED ASTLING, Constantine, Michigan

**BIG BARGAIN SALE OF BARRED ROCKS.** 200 yearling hens that have laid 140 eggs each since Jan. 1st, 1915 to Aug. 1st, 1915 an average of 20 eggs per hen per month. Prices 6 hens \$10, 12 hens \$18, 20 hens \$25, 50 hens for \$60. They are pure bred, large and closely related to our first winners at Chicago, Cincinnati and Indianapolis shows. Suitable males to go with them at \$2 to \$5 each. 1500 young birds growing.  
**G. EARL HOOVER, R. 7, Matthews, Indiana.**

**Buff Rocks,** 3 out of 4 firsts Chicago, 1914. Eggs bal. of season \$1.50-15; \$6-100. S. C. Buff Leghorn eggs \$1-15; \$5-100. Pen of 12 Buff Leghorns \$10. 20 Buff Rock Hens. 75 cents to \$2.50, including Chicago and Minneapolis first prize winners. Bird Lawn Farm, Lawrence, Mich.

**Pine Crest White Orpingtons**—Splendid early hatched cockerels and pullets. Belgian hares and Collie puppies. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Michigan.

**RHODE ISLAND REDS and PLYMOUTH ROCKS.** Males 5 to 12 lbs., according to age \$2 to \$5; P. R. Hens weight 5 to 9½ lbs., eggs 15 for \$1.00; P. R. eggs \$5 per 100. Mammoth Bronze Tom Turkeys, 8 to 38 lbs., according to age \$5 to \$25, 10 eggs \$5. A. E. Cramp ton, Vassar, Mich.

**Rose Comb Brown Leghorn Cockerels** from Mad. Sq. winners 50 cts. up according to age. **CLAUDIA BETTS, Hillsdale, Michigan.**

**ROSE and Single Comb Rhode Island Reds.** Prepare to improve your flock by getting hens or young cockerels now from these laying strains at \$1 each. Jennie Buell, Ann Arbor, Mich.

**SALE OF ORPINGTON Cockerels**—12 wks. \$1; 8 wks. 75c. 8 wks. pen, 8 pullets, 1 cockerel \$10. S. C. Kellerstrass, white. M. E. Thompson, Redford, Michigan.

**Slaughter Sale of Barred & White Rocks** Cocks \$3.00 to \$5.00. Hens \$1.00 to \$3.00. Young stock after September 1st. Riverview Poultry Farm, Box 798, Union, City, Mich.

**SILVER Laced Golden and White Wyandotte Eggs** for hatching. Ten cents each or 30 for \$2.50. I pay parcel post charges. **C. W. BROWNING, Portland, Michigan.**

**White Wyandotte Eggs**—50c for 15, \$4.00 for 100. My two best pens \$2.00 for 15, \$3.75 for 30. **DAVID RAY, 202 Forest Ave., Ypsilanti, Mich.**

**White P. Rocks, Pekin and white runner ducks, White guineas, eggs and day old ducks and chicks, H. V. HOSTETLER, St. Johns, Michigan.**

#### DOGS.

**FOX, COON, SKUNK AND RABBIT HOUNDS** Broke to gun and field. Prices right. Fox and Coon hound pups \$5 each. Stamp for reply. **H. C. LYTLE, Fredericksburg, Ohio.**

**Trained Running Fox Hounds**—30 Fox and Coon hound pups, Puppies, Send stamp. **W. E. LECKY, Holmesville, Ohio.**

## Care of Chickens in Hot Weather

THE domestic fowl is a warm-temperature of a hen being several degrees higher than that of a human being. Thus it will readily be seen that the period of hot weather is especially trying to the birds. This is true unless precautions are observed in housing them. Wild birds spend their nights in the open air. Too often the hens are obliged to roost in stuffy unventilated houses. Even the open-front building is warm and uncomfortable. This is the reason why so many hens take to the trees outside if given the opportunity.

#### Open Shed Good for Summer Use.

We have in one of our hen yards an open shed, rather it is a roof set on posts. Under this we place roosting posts for the hens during the summer. When the cold weather comes on, it is no trouble to get the birds to return to the house. Simply remove the outside roosts and they are obliged to do so. Such an arrangement as this is very satisfactory for the growing pullets. It does much for their health to keep them in the open air until cooler weather comes on. It is also easier to keep the mites in check if the birds are not allowed to congregate in the houses during hot weather. Where the accommodations are such that the fowls are obliged to spend the night indoors, every effort should be made to keep the building free from mites. This is something of a proposition in old houses which afford abundant hiding places that cannot be reached with disinfectants. At any rate, the interiors of all buildings should be whitewashed and the material used should have a small quantity of some disinfectants mixed with it. This may

weather. Corn is of this class, and, as it tends to produce fat rather than muscle, for the growing chicks it is not desirable in large quantities. For the older birds a certain amount of corn is needed to put them into condition for the moult. Medicines are seldom needed if the chicks have pure

air, pure water and proper feed. Open range is best for all birds during the summer, but where this cannot be given, plenty of green food should be provided. Lettuce is one of the best summer greens that we have seen for young birds. Plenty of shade should not be forgotten whether the birds have free range or are yarded. Finally do not keep the old birds and chicks together.  
**C. H. CHESLEY.**

## Beginning the Poultry Business

THERE are a great many farmers who keep a few hens who ought to go into the business more extensively, also there are some who keep no hens at all and these should certainly, for economy's sake, keep enough biddies to furnish a supply of eggs and poultry for their own tables. The fall season is the time to make plans for next year, both because that is the time when stock can be purchased cheapest and when one can best make arrangements for proper housing and yarding. There have been many failures in the poultry business and doubtless there will be many more. This would be discouraging if there were not many successes to offset the failures. That there is still room for the "hen farm" is attested to by the high prices for strictly fresh eggs and other poultry products. Like any other branch of farming, careful attention to details is a necessary factor toward winning success.

#### Making the Plans.

In starting a poultry plant at this time it is important to take into consideration all branches of the business. I would, first of all, aim toward getting the maximum number of eggs, and as large a proportion of them as

brooders, all of which must be handled exactly according to instructions given by the machine makers, will be all that are necessary at the start. The old hen will scarcely answer the purpose for hatching if one plans to do more than a small business, largely for home consumption. The beginner should not attempt to hatch out chickens too early. Better have them come out about April 1. The cockerels will make broilers for the summer trade and the pullets should be laying by the first of October. Another flock a month later will furnish roasters for early fall and layers for the winter.

As to houses one will have to be governed to a considerable extent by the space available. Undoubtedly the open-front house is best, even for the colder parts of our country. Hens do best in small flocks and if a continuous house is used, there should be numerous divisions that the flocks may be kept small.

#### How to Keep Informed.

One starting in the business should read all the literature available. One or two books on the subject will be found of value and the poultry columns of farm journals cover almost every question likely to arise. Aside from these one will get a good deal of pleasure from the class poultry papers. When a man or woman starts out to make the poultry business a paying proposition, it must be expected to study incessantly, for no scrap of information is too trivial to be weighed in the balance of reason and perhaps put into practice. But after getting all the information possible from the work of others, it is practical experience that counts for most after all.  
**C. H. C.**

#### FEEDING DURING MOULT.

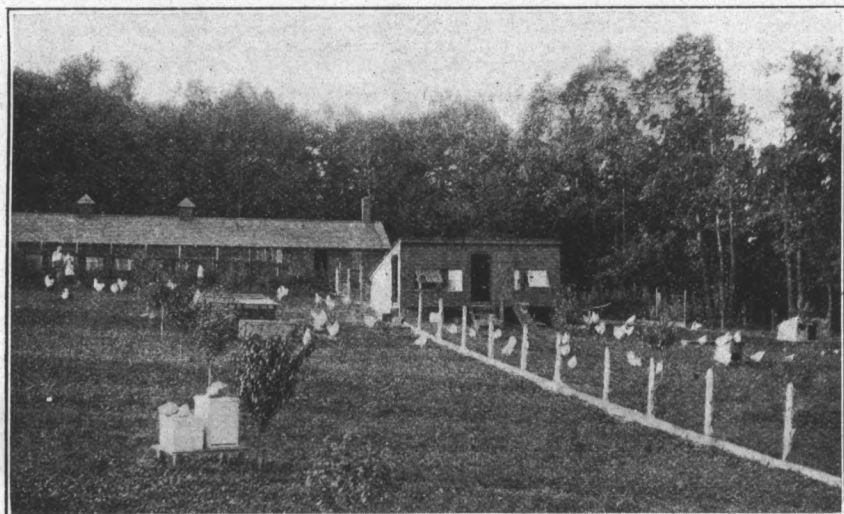
Moulting hens should be well fed of nitrogenous and feather-forming foods. The method of starving the hens into a premature moult has been discontinued by the best poultrymen, as it was found that the starving so weakened the hens that many never fully regained their former strength. Linseed meal and sunflower seed are the great feather-forming foods. A good dry mash for moulting hens is composed of two parts bran, one part each of middlings, corn meal, linseed meal and beef scrap. A good grain ration is two parts wheat, and one part each of corn and sunflower seed.

If possible, the hens should be given free range, and grit and charcoal should be kept before them all the time.

By feeding and handling moulting birds as described, I usually have them laying before cold weather.  
**Indiana. T. Z. RICHEY.**

#### A GOOD VETERINARY BOOK.

Very often a Veterinary Book can save you money. We have been able to buy 1,000 copies of Gleason's Veterinary Book (latest edition) at 29 cents apiece. This book contains methods of training horses and curing their diseases. To old subscribers who now take the Michigan Farmer we will send this book for 29 cents, postpaid. To new subscribers we will send the book and the Michigan Farmer one year for 79 cents. This is a bargain, as the veterinary book would cost you at least 50 cents in any other way.



Successful Extensive Poultry Farms are the Result of Steady Growth.

best be put on with a hand spray pump and should be applied as often as once a week during the hot weather. We also spray the interior with hot water, in which a quantity of some coal tar disinfectant has been mixed. If houses are tight and all the cracks can be reached with the spray, the mites have a small chance to increase to any great extent.

Much labor will be saved by the caretaker if dry feeds are given and these are fed from hoppers. Chicks have a knack of balancing their own rations if given the opportunity. In addition to the dry feed, a moist mash should be fed about every other day. It is best to feed the animal food in the moist mash during warm weather rather than to give it in the dry mash, as is done in colder weather. Pure water is a summer essential. Fountains that will keep the water reasonably cool should be used. We know of one chicken raiser whose buildings are supplied with water by the gravity system and a pipe is laid to the hen yard, where pure water is constantly running in a tiny stream.

#### Corn Should be Fed Sparingly.

Feeds of a carbohydrate nature should be given sparingly during hot

possible during the off season, that is, the late fall and winter months when prices are high. In addition I would aim to produce pure stock for breeding purposes and eggs for hatching. I would also cater to the capon trade and try to do something in the broiler business. To best care for all of these interests I would select one of the American breeds and build up an efficient producing strain, by selecting only the best for breeding stock and keeping the flock well endowed with vigor.

Having stated the purpose, how shall we attain it? First, I would buy a small breeding flock, getting them now because they are cheaper than they will be later. I would provide houses and runs adequate to accommodate as many as I could hope to raise next spring. From this beginning, I would aim to increase gradually the extent of the business until it had assumed as large proportions as space for quarters or time for care and attention would permit. Many make a mistake by trying to rush in all over the first season instead of learning by careful experience the intricacies of the business.

One incubator and two or three



## BREEDERS' DIRECTORY

## CATTLE.

## ABERDEEN ANGUS

If you are in need of an extra good bull or a few choice young cows or heifers, we have them for sale. Our herd is headed by the Grand Champion Black Monarch 3rd. We invite you to come to our farm and see them. They are bred right and priced right. U. L. Clark, Hunters Creek, Mich. Sidney Smith, Mgr.

## ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900. TROJAN-ERICAS and BLACKBIRDS only. Young bulls and Percheron stallions for sale. Also breeders of Percheron, Hackney and Saddle Horses. WOODCOTE STOCK FARM, Ionia, Mich.

AYRSHIRES—One of the foremost dairy breeds. The most economical milk producers. Calves for sale. White Leghorn cockerels. Duroc Jersey swine. Michigan School for the Deaf, Flint, Michigan.

THE VILLAGE FARM,  
Grass Lake, Michigan,  
GUERNSEY CATTLE.

MILO D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM  
GUERNSEYS

Combine the blood of the following great producing sires and dams:

|                        |                    |
|------------------------|--------------------|
| Masher Sequel          | 57 A. R. Daughters |
| Galexy's Sequel        | 37 A. R. "         |
| Glenwood Boy of Haddon | 26 A. R. "         |
| May Rose King          | 21 A. R. "         |
| Dairymaid of Pinehurst | 910 lbs. fat       |
| Dolly Bloom            | 886 "              |
| Imp. Itchen Daisy      | 714 "              |
| Selma of Pinehurst     | 762 "              |
| Stanford's Princess    | 725 "              |

Bulls for sale only.

A Dairy Show Every Day.

CAMPBELL & ANGEVINE, Coldwater, Mich.

For Sale—Reg. Guernsey Cattle and BERKSHIRE SWINE either sex. JOHN EBELS, R. 10, Holland, Michigan.

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

GUERNSEY BULLS FOR SALE, ready for service from A. R. Dams. If you want the right kind write for price and breeding. BYERS & BARNES BROS., Coldwater, Michigan.

REGISTERED Young Guernsey Bulls, great grand-sons of Gov. Chene, Serviceable age nicely marked, exceptional breeding. Avondale Stock Farm, Wayne, Mich.

HEREFORDS; Two last Oct. bull calves for sale. Big fellows. ALLEN BROS., 21 Paw, Michigan.

## Do You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 6 1/2 % fat daughter of Pontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

Espanore Farm,  
LANSING, MICHIGAN.

Home of the great Holstein bull "Pledge Spofford Calamity Paul"—sire of a 35-lb. cow and three over 30 lbs. If you are looking for a bull calf of this kind of breeding write for prices and pedigrees.

CHASE S. OSBORN, Owners.  
ADAM E. FERGUSON,

## 1 4-YEAR-OLD BULL

by a 31-lb. son of Pontiac Korndyke, and out of 27-lb. dam. 2 two-year-old and three yearling bulls. The above bulls have breeding and individuality to spare. Also a few richly bred bull calves. These will be priced right. This is a chance to get a valuable bull for little money. Get busy, as this ad. will appear but twice.

L. E. CONNELL, Fayette, Ohio.

## HATCH HERD

YPSILANTI, MICHIGAN

Registered Holstein-Friesian sires, grandson's of World's greatest dairy sire, out of choice A. R. O. dams and King Pontiac Jewel Korndyke. Brother of K. P. Pontiac Lass 44.15; average record of 50 dams in his pedigree 31.25 in 7 days; average per cent of fat three nearest dams 4.37; of his own dam 4.93. Sires in first three generations already have over 600 A. R. O. daughters. A few females bred to "King". Prices reasonable.

## The Two Greatest Bulls

KING OF THE PONTIACS

DE KOL 2d's BUTTER BOY 3rd

I have young bulls from cows having high official records and Granddaughters of above bulls. Stock extra good. Prices reasonable.

BIGELOW'S HOLSTEIN FARMS, BREEDSVILLE, MICH.

FOR SALE—REGISTERED HOLSTEIN BULL born Feb. 28, 1914. Mostly white. Dam has A. R. O. record, also Chester White Pigs. CHARLES I. COOK, Box 438, Fowlerville, Michigan.

2 Choice Jersey Bulls 2  
FOR SALE AT BROOKWATER FARM  
AS FOLLOWS:

Brookwater Eminent Lad 128246. Sire, one of the best sons of Oxford Lad. Dam, an imported daughter of Eminent. Calved Feb. 9, 1914. A strong robust but typey solid colored ready for service bull, Price \$125.00.

Brookwater L. D's. King Sold 3 Days After Ad. Appeared. Hurry.

Brookwater King Chita. Calved Sept. 2, 1914. Sire, Benedictine King. Dam, Chita of M. a good producing cow. Bull a dark squirrel gray and an excellent individual, Price \$75.00. These bulls must be seen to be appreciated.

BROOKWATER FARM, Ann Arbor, Michigan.

## "TOP-NOTCH" HOLSTEIN

20, 25, 30, 35 and 37-lb. Bulls from large milking. A. R. O. dams. Nice variety from three farms to select from. Breed Better: Get the Best.

McPHERSON FARMS CO., Howell, Michigan.

REGISTERED Holsteins—Herd headed by Albina R. nte Butter Boy. His dam has A. R. O. records as follows: at 2 yrs. milk 430, but at 18.85; 4 yrs. milk 604.8, butter 27.03; at 6 yrs. milk 620, butter 28.55 lbs. W. B. READER, Howell, Mich.

Registered Holstein Bull 4 months old. A. R. O. dam, and sire of fashionable breeding. Good individual, well grown, nicely marked. \$65 brings him right to your town with all papers. Safe arrival guaranteed. HOBART W. FAY, Mason, Mich.

High Class HOLSTEINS My herd is headed by Smithdale Alcatraz Pontiac, whose dam is the famous Alcatraz Polkadot. Have few young bulls and females for sale at reasonable prices. Will buy a few heifers about 15 months, not bred. Farm 1/2 mile from court house. SETH B. RUBERT, Howell, Mich.

HOLSTEIN BULL CALVES—Don't buy until you write us. No better breeding in Michigan. Long Beach Farm, Augusta, Kalamazoo Co., Mich.

HOLSTEIN CATTLE and Duroc Jersey Swine. Choice pigs of both sex now ready to ship. Prices reasonable. E. R. CORNELL, Howell, Michigan.

\$200 Buys one registered Holstein yearling heifer and one bull 15 months old not akin. 1/2 white. King Segis and Johanna breeding. B. B. Reavey, Akron, Mich.

MICHIGAN HOME AND TRAINING SCHOOL  
LAFER, MICHIGAN  
Breeder of High Grade Holstein Cattle. Lists and prices upon application.

\$80 Gets a 5 mos. old HOLSTEIN BULL CALF whose sire is full bio to a former World's Champion 3 yr. old. Elmer E. Smith, Redford, Mich.

Holstein-Friesian Breeder—The best families of the breed represented. D. D. AITKEN, Flint, Michigan.

Yearling Reg. Holstein Bull. A sister by the same record and making nearly 1000 lbs. butter in a year. DEWEY C. PIERSON, Hadley, Mich.

\$40.00 DELIVERED  
Handsome Holstein bull calf, 1/2 white. By 24-lb. butter bull. Registered and all papers. ROUGEMONT FARMS, Detroit, Michigan.

\$75—buys registered high bred Holstein bull calf 8 months old. Sire, Pontiac Korndyke Burke. Dam Lady Beata Dekol Mercedes, 15.33 butter at 26 months old. RIVERVIEW FARM, Vassar Mich

## HOLSTEINS AND GUERNSEYS

Our Holsteins combine the blood of Belle Korndyke and DeKol 2nd. Our Guernseys are strong in Lady Gempey, Glenwood Boy of Haddon, and Stranor. Glenwood of Pinehurst blood. Some fine bull calves of both breeds for sale. Boardman Farm, Jackson, Mich.

REGISTERED HOLSTEIN BULL, calved Jan. 2, 1914. Send for description. W. C. TAYLOR, Milan, Mich.

For Sale—4 Registered Holstein Heifers. One 4 mos. old, and 3 11 months. One bull calf. All well bred. COLEMAN & WHIPPLE, Mason, Mich.

Maple Lane Register of Merit Jersey Herd. Tuberculin tested by U. S. Government. For sale bull calves and heifer calves from R. of M. dams and grand dams, and Hood Farm Sire. IRVIN FOX, Allegan, Michigan.

THE WILDWOOD Jersey Herd. Registered Jersey Cattle of Quality. Herd headed by Majesty's Wonder 2017, one of the best sons of Royal Majesty. The daughters of Majesty's Wonder are mated to a son of Majesty's Oxford King. Herd tuberculin tested. We have for sale a few choice young bulls for fall service from high producing cows. Alvin Balden, Capac, Mich.

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

Jerseys. Bulls ready for service, extra quality sired by Jacoba's Fairy Emanon. No. 1011 from high producing dams. SMITH & PARKER, Howell, Mich.

FOR SALE—High class Jersey Bull Calves from Register of Merit ancestry. WATERMAN & WATERMAN, Meadowland Farm, Ann Arbor, Mich.

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

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For "Beef and Milk" Registered Bulls, Cows and heifers Scotch-topped, roans, reds and whites for sale. Farm at L. S. & M. S. Depot. Also D. T. & L. R'y.

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Shorthorns For Sale, farm 1/2 mile east of Davis crossing on A. A. R. R. W. B. McQUILLAN, Chilson, Liv. Co., Michigan.

Milking Shorthorns 1-bull 18 months old \$125, 2-cows. DAVIDSON & HALL, Tecumseh, Michigan.

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

Dairy Bred Shorthorns of best Bates strains. Young bulls 7 months old for sale. Price \$100 each. J. B. HUMMEL, Mason, Mich.

Registered Shorthorns One bull 2 yrs. old, some young cows with calves by side. Wm. D. McMullen, R. 1, Adrian, Mich.

## HOGS.

## Durocs &amp; Victorias

Grand bunch of Gilts due March and April. Comprising the blood of Superba, Defender, Much Col., Orions and others. A few young boars. M. T. STORY, Lowell, Mich.

FOR SALE—Berkshire hogs, both sexes and different ages. Bred gilts for fall farrowing. Poll Angus Bull calf, not registered. Price right. Chase's Stock Farm, R. 1, Marietta, Mich.

Berkshires. Two fall gilts bred for Aug. & Sept. farrowing and a choice lot of April gilts for sale. A. A. PATTULLO, Deckerville, Mich.

BERKSHIRES—Some choice brood sows and spring pigs, either sex, also one stock boar for sale cheap. I. M. LEWIS & SON, Akron, Mich.

For Sale Duroc Jerseys Bred Gilts for Sept. farrow. Carey U. Edmonds, Hastings, Mich.

HAMPSHIRE Swine—Breeding stock of all ages from most popular strains. Write for breeding. Inspection invited. Floyd Myers, R. 9, Decatur, Ind.

WEST WINDS HAMPSHIRE SWINE. Booking orders for sow pigs immediate shipment. No males to offer. E. P. Hammond, owner, N. A. Wiser, manager, Pontiac, Mich.

HAMPSHIRE.—For the next 10 days I offer for sale cheap 1 Hampshire Reg. Boar 2 yrs. old Sept. 30; 6 sows and 5 boars, 4 mos. old Sept. 1. F. C. McKenon, Mason, Mich.

WOULD like to hear from those desiring to start a herd of thoroughbred Chesters. Prices attractive. F. W. ALEXANDER, Vassar, Michigan.

## Big Type, O. I. C's and Chester White Swine.

400 fall pigs either sex. Special prices for the next 30 days, also bred gilts and service males and we are booking orders for spring pig. All our stock is good enough that I will ship C. O. D. and reg. free in the O. I. C. or Chester White Assn. We won, more prizes than all other breeders put together, at Ill. and Wis. State Fairs. Write for Show record.

## ROLLING VIEW STOCK FARM

Cass City, Michigan.

## O. I. C. PIGS of March and April farrow

JOHN BERNER & SON, R. 4, Grand Ledge, Mich.

## JEWETT'S REGISTERED BLUE RIBBON O. I. C.'s

Growthy type. Photos. J. Carl Jewett, Mason, Mich.

O. I. C.'s—Sows bred to farrow last of June and July. Prices reasonable. G. P. ANDREWS, Dansville, Michigan.

O. I. C.—Gilts bred for Aug. and Sept. farrow. Will take orders for March and April pigs. H. W. MANN, Dansville, Michigan.

## O. I. C.'s—STRICTLY BIG TYPE

Gilts bred for Sept. farrow and March pigs now ready to ship. Extra good ones at prices that will move them. Pairs not akin. I will be pleased to ship them C. O. D. and record them free in purchaser's name. NEWMAN'S STOCK FARM R. No. 1, Marietta, Mich.

O. I. C. SWINE—Are you on the market for a choice bred sow to farrow the last of Aug. or fore part of Sept.? If you are, write me. I have them. A. J. GORDEN, R. No. 2, Dor, Michigan.

O. I. C.'s—8 last fall gilts bred to farrow last of Aug. and in Sept. Big growthy stock, also last spring pigs and one last fall boar. 1/2 mile west of depot. OTTO B. SCHULZE, Nashville, Mich.

O. I. C.'s—all ages both sexes. Priced to sell. time given. Satisfaction guaranteed. A. R. GRAHAM, Flint, Michigan.

O. I. C. Pigs, 8 to 10 Weeks Old \$10. Pairs not akin \$12. Registered free. C. J. Thompson, Rockford, Mich.

O. I. C. Choice Gilts bred for Sept. farrow. Serviceable boars. Spring pigs not akin. ALVIN V. HATT, Grass Lake, Michigan

Way Brothers Stock Farm. The home of the big bone O. I. C. Hogs. Stock for sale. Registered free. J. R. Way, Pompeii, Mich.

FOR SALE—Fancy bred gilts, fall males, spring pigs, of the large, smooth kind. Price to sell. JOHN McNICOLL, Station A, R. 4, Bay City, Mich.

Capitol Herd Duroc Jersey Swine. Established 1888. Spring pigs for sale, satisfaction guaranteed. Express prepaid. J. H. Banghart, East Lansing, Mich.

Heavy Bred Duroc Jerseys. Breeding stock and some good show pigs for sale. M. A. BRAY, Okemos, Ingham Co., Michigan

DUROC JERSEYS—Spring pigs either sex. Gilts bred for Sept. farrow to a son of Volunteer Grand Champion at Intern'l Stock Show Chicago. F. J. Drott, R. 1, Monroe, Mich.

THIS  
**O. I. C.**  
SOW WEIGHED 932 LBS.  
AT 23 MONTHS OLD  
IONIA GIRL

I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan. "How to Make Money from Hogs." G. S. BENJAMIN, R. No. 10 Portland, Mich.

Duroc Jersey Bred Gilts. Special prices on some first-class gilts for 10 days. W. C. TAYLOR, Milan, Michigan.

Duroc Jersey—March pigs either sex, sired by a son of Volunteer Champion of 3 State Fairs and Chicago Show in 1912. E. H. Morris, Monroe, Mich.

DUROC JERSEYS—Fall and spring pigs either sex, from choice strains. S. C. STAHLMAN, OCHERRY LAWN FARM, Shepherd, Michigan.

BIG TYPE P. C. Either sex, pairs or trios not akin. Bred sows and gilts. Have several 1000 lb. boar prospects. Absolutely no larger breeding. Everything guaranteed right. FRANK KRUGER, Ravenna, Mich.

POLAND CHINA Spring Pigs from heavy boned prolific stock. Sows bred for 7-up and Fall pigs at close prices. ROBERT NEVE, Pierson, Michigan

Poland Chinas, either sex, all ages. Something good at a low price. Bargains in boars ready for service. P. D. LONG, R. F. D. 8, Grand Rapids, Mich.

POLAND CHINAS of the big type. Boars ready for service. Sows bred for spring farrow. A. A. Wood & Son, Saline, Mich.

LARGE TYPE P. C.—Either sex, pairs and trios, not akin. Am booking orders for bred gilts. W. J. HAGELSHAW, Augusta, Mich.

Big Boned Poland Chinas. Fall gilts bred weighing from 260 to 300 lbs. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

Large Strain P. C. two extra good Summer Yearling Boars; a few choice sows bred for Aug. & Sept. farrow. Spring pigs that are beauties, sired by Big Defender, the boar that everybody goes wild over. Come and see him. H. O. SWARTZ, Schoolcraft, Mich.

BIG TYPE POLAND CHINAS. Some choice boars now ready to ship. Satisfaction guaranteed. G. W. HOLTON, R. No. 11, Kalamazoo, Michigan.

Big Type Poland China Hogs. We show at Marshall then at Detroit. Call at the pens, get acquainted and see our stock. BEAN CREEK FARM, ADDISON, MICHIGAN

Spring Pigs at Half Price:—Bred from the largest strain of Poland Chinas on earth, none bigger. If you ever expect to own a registered Poland China, this is your opportunity. Get busy and order at once. Pairs and trios not akin \$15 each. A few bred sows at \$25. J. C. BUTLER, Portland, Mich. Bell Phone.

LARGE Type P. C. Herd Boar Hoosier Giant 2nd 238011, Pigs sired by him. One Big Smooth Jumbo Boar. Bred sows, prices right. MRS. J. E. BATHWAITE, Brant, Mich.

BIG Type boars by Big Smooth Jumbo. Greatest boar in State, 748 lbs at 17 mo. These boars are long tall, big bone, sold at farmers prices, shipped C. O. D. Call or write. Wm. Waffle, Coldwater, Mich.

For Sale Poland Chinas of Merit, also Ayreshire Bull. B. M. WING & SON, Sheridan, Mich.

BIG type Poland Chinas with quality bred right, feed right, and priced right to go to their new homes and do right. A. D. GREGORY, Ionia, Mich.

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Imported Strain. Both sexes. Prices Reasonable.

Hatch Herd, Ypsilanti, Michigan.

## 50 YORKSHIRES—All ages. Red Polled Cattle.

Rock, I. R. Ducks, E. S. CAHR, Homer, Mich.

## FOR SALE Lawnege Lodge Yorkshires. Boars from

3 to 8 mos. old. Weanling pigs to ship Sept. 1st. GEO. McMULLEN, Grand Ledge, Mich.

Mulefoot Hogs:—Weanling pigs, pairs not akin. Bred sows and gilts for fall farrow, two service boars. C. F. BACON, R. 3, Britton, Mich.

Little Farmstead Yorkshires. Boars ready for service. Gilts bred for Sept. farrow. Spring pigs, pairs and trios, not akin. Colon C. Lillie, Coopersville, Mich.

## YORKSHIRES

Bred gilts, service boars, September and October pigs. Prices reasonable. W. C. COOK, R. 42, Ada, Mich.

## WANTED:—To buy some GRASS

BREED PIGS. Address R. D. No. 1, Box 96, Standish, Michigan.

Thoroughbred Tamworth Pigs—four months old, healthy and well grown, \$12 each. J. S. Carpenter, Oxford, Michigan

## HORSES

FOR SALE—Registered Percheron Stallion Mares and Fillies at reasonable prices. Inspection invited. F. L. KING & SON, Charlotte, Mich.

Pigeon Pony Farm—Reg. Shetland Ponies, mostly spots, 1 spotted stallion and young stock for sale. Dr. W. T. Morrison, Pigeon, Mich.

Registered Percherons Brood mares, Fillies and Young Stallions. Priced to sell. Inspection invited. L. C. HUNT & CO., Eaton Rapids, Michigan.

SHEEP.

Black Top Delaine Sheep. Yearling rams for sale. Fred E. Reichert, Elm Ridge Farm, Ann Arbor, Mich.

Oxford Down Sheep. Good Yearling Field Rams. M. F. GANSLEY, Lennon, Michigan.

SHROPSHIRE RAMS Good big fellows with quality. Special prices on them this month. See our exhibit at Columbus and Detroit. KOPE KON FARM, Kinderhook, Michigan.

Leicesters—Yearling and ram lambs from Champion stock of Thum of Mich. Also select Berkshire swine. Elmhurst Stock Farm, Almont, Mich.



## Veterinary.

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

**Catarrhal Fever.**—Over two weeks ago a barrow appeared to be ailing, seemed to have earache or pain in the head and his appetite was not equal to others. We immediately drove all other hogs from that pasture. He lost flesh and coughed while trying to eat. He has had no bowel trouble and does not appear dull or stupid—always comes to the trough when called, although he soon gives up eating and coughs. Four days ago we called a Vet; he found his temperature 104, and pronounced it hog cholera. The question is, can a hog be free from bowel trouble and not be stupid and still have hog cholera? With any other animal on the farm we should have treated for distemper. One more point—the hog does manage to consume about half rations of swill and picks at pasturage a good deal. He has been treated with the serum and we are endeavoring to observe every precaution. A. W. B., Lowell, Mich.—A hog in this condition should not be allowed to sleep around straw stacks and manure heaps, but given dry, comfortable quarters and fed slops for a few days. If his bowels are costive, give him castor oil. The animal should be allowed to inhale the steam from a one-half per cent solution of turpentine for 15 minutes twice a day. Also disinfect his pen with coal tar disinfectant. If your hog had cholera, his appetite would be gone. He would perhaps vomit, he would also have chills or the appearance of chilling. His back would be arched, move his hind parts stiffly, stagger and cross his hind feet when moving. His eyes would doubtless be sore, red spots or blotches would perhaps appear upon his ears or on the skin near his ears; besides, on the neck and lower part of abdomen, on the lips and lining membrane of mouth. Early in cholera the bowels are costive then become loose alternately. I hardly believe your hog has cholera. Give him 4 grs. of quinine at a dose five times a day.

**Garget.**—I have a cow that came fresh some six weeks ago, since then she has had more or less udder trouble, and the treatment I have given and the remedies I have applied fail to clear her bag. C. B., Jackson, Mich. Apply one part fluid extract phytolacca, one part extract belladonna, adding four parts lanolin, then apply to udder once or twice a day.

**Bunch in Udder.**—I have a cow that came fresh last April, since then she has bunch in udder the size of a pint measure, but it is not sore. J. O. N., Burr Oak, Mich.—Apply one part iodine and nine parts fresh lard to bunch every day or two.

**Sidebone—Worms.**—What had I better apply to reduce hard bunches on pastern and coronet of horse, and I would also like to know what to give a mare that is in foal which is troubled with worms. I. A., Paynesville, Mich.—Apply one part red iodide of mercury and four parts lard to bunches twice a month; however, if these bunches are not growing any larger, producing no lameness or soreness and you are working the horse, better leave them alone until you can rest the horse. Give a tablespoonful of salt and a tablespoonful of ground gentian at a dose in feed twice a day to brood mare.

**Surfeit Buds.**—My eight-year-old mare has small bunches all over her body; she rubs and bites herself and lately she has made sores on legs. I have applied lard and sulphur, and have also used coal tar disinfectant, but she is no better. J. B. W., Millington, Mich.—Give her ½ oz. of hyposulphite of soda at a dose in feed or water twice a day; also give her ½ oz. of Donovan's solution at a dose three times a day. Wash her body three times a week, and apply one part bichloride of mercury and 500 parts water twice a day. If you work her and she perspires much, wash her every evening with tepid water, and leave water on body.

**Brain Hemorrhage.**—I have a three-year-old colt which has a peculiar ailment. The first symptoms I noticed was that she did not, or could not, step over in stall as she should, but I led her out and she could hardly walk. She attempted to play, but soon fell over; however, she got up again, then I called a Vet. who told me she had brain trouble. Her sickness came on one week ago, eats and drinks as well as usual, but holds her head a little to one side and her right ear droops some. G. W. B., St. Clair, Mich.—Give your colt 1 or 2 drs. of carbonate of ammonia in a pint or two of water either as a drench or mixed with feed four times a day. Also feed colt plenty of grass. If you fail to notice any improvement in a week, give 1 dr. doses of potassium iodide two or three times a day.

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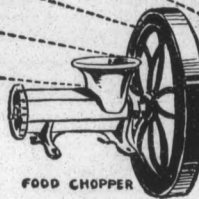
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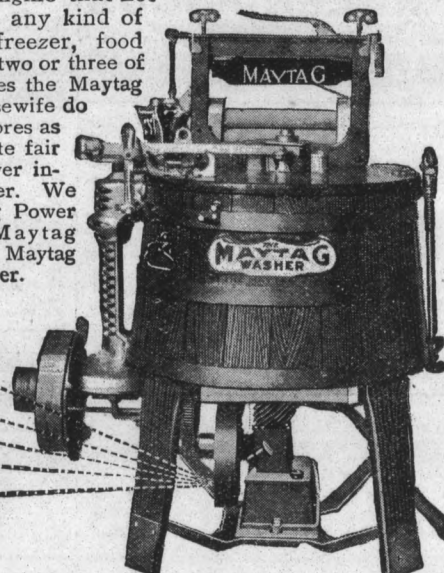
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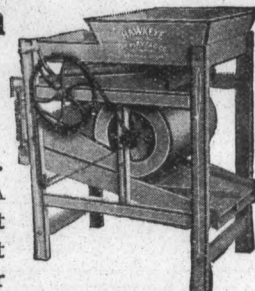
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The Wonderful Little Engine of the Maytag Washer Will Run All of These Machines.

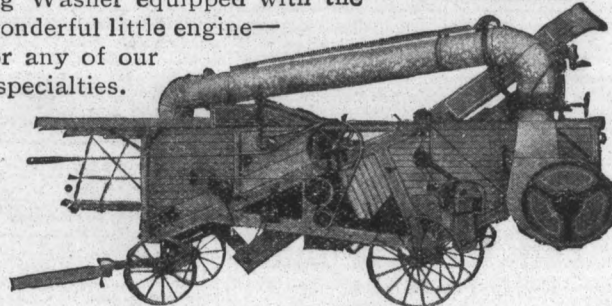
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The Maytag-Ruth Self Feeder, Maytag Husker-Shredder, Maytag Hog Waterer, Maytag Grain Grader and other specialties for farmers and threshermen will be shown.

Get to know the Maytag line. A visit to our State Fair exhibit will interest you. If you do not expect to attend the State Fair write us for circular on the Maytag Washer equipped with the wonderful little engine—or any of our specialties.

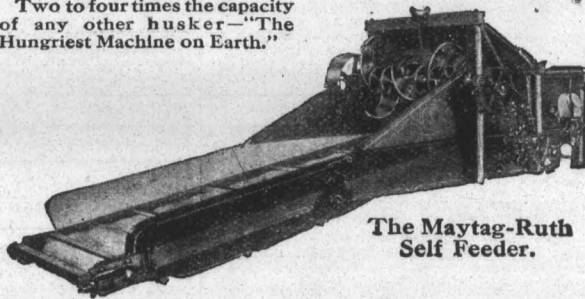


The Maytag Grain Grader



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Two to four times the capacity of any other husker—"The Hungriest Machine on Earth."



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Invites You

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### The State Fair

Writing table, information bureau, etc., will be provided for convenience of visitors. Pay us a visit—get acquainted—see the Maytag Washer with the wonderful little engine that will do so many things. We'll be glad to see you and your friends.

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Illinois State Fair, Springfield, Ill. .... Sept. 17-25.  
Indiana State Fair, Indianapolis, Ind. .... Sept. 6-10.  
Iowa State Fair and Exposition, Des Moines, Iowa. .... Aug. 25-Sept. 3.  
Missouri State Fair, Sedalia, Mo. .... Sept. 25-Oct. 2.  
Kansas State Fair, Hutchinson, Kans. .... Sept. 18-25.  
Minnesota State Fair, Hamline, Minn. .... Sept. 6-11.  
Nebraska State Fair, Lincoln, Nebr. .... Sept. 6-10.  
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Michigan State Fair, Grand Rapids, Mich. .... Sept. 20-24.

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