

# MICHIGAN FARMER

AND  
**LIVE STOCK**  
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50 CENTS A YEAR,  
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## Developing High Yielding Pedigreed Oats

IN 1915 a well-known cereal company offered a gold medal for the highest yield of pedigreed oats produced in Michigan. It was required of contestants that they should grow five acres or more of oats and that their fields should be measured and the oats weighed at harvest by a committee of three, two of whom should be local men and one a representative of the Agricultural College.

The contest was won by Wallace Brothers, of Huron county, who reported a yield of 96 bushels of Alexander oats per acre. The second and third places were taken by Worthy oats. Jennings Farm, of Muskegon county, reported 88 bushels, and I. E. Parsons, of Genesee county, 87 bushels per acre.

Both the Worthy and Alexander oats are pedigreed varieties developed by the Michigan Agricultural College and released from the experiment station to farmers who belong to the Michigan Experiment Association about six years ago. Wherever introduced these varieties have won favor and have gained rapidly in popularity. Professor V. M. Shoesmith, Secretary of the Experiment Association, estimates that over 6,000 bushels of Worthy and Alexander oats were seeded last year. There is, therefore, a very considerable amount available for the coming season's planting, since, on account of the high yield secured, these pedigreed oats were largely held for seed purposes.

### Farmers' Reports on the Worthy and Alexander Oats.

Over one hundred farmers who grew the Worthy and Alexander oats in various sections of Michigan reported their yields to the Secretary of the Experiment Association. Assistant Secretary, A. L. Bibbins, reports an average yield on all fields of Worthy and Alexander oats grown in Michigan in 1915 of about 60½ bushels per acre. The average yield of oats per acre for the state of Michigan in 1915 was 40.21 bu., 20 bu. less than pedigreed varieties. It is certain that if a considerable number of Michigan farmers were growing the pedigreed oats instead of ordinary varieties that the state average would be materially raised.

A study of the reports from farmers and of tests made by the Experiment Association shows that the Worthy oats are particularly adapted to heavy soils, some of the highest yields being reported from Saginaw county. The Al-

exander variety does better on the lighter soil types and some of the highest yields have been reported from western Michigan. Both varieties are stiff strawed and are resistant to the tendency to lodge.

The Success, a new pedigreed variety, will be released in small amounts this season to members of the Experiment Association, only, by the Agricultural College. This new variety is the leading variety in the Experiment Sta-

tion Variety Tests, surpassing both the Worthy and Alexander. It has not, however, been given a thorough trial under different conditions over the state, and seed is not available as yet.

### How Pedigreed Oats are Developed at the Michigan Agricultural College.

There is as marked a difference between individual oat plants as there is between individual animals in a dairy herd. The Babcock test enables the dairyman to pick out the high pro-

ducers in his herd and to discard the "Star Boarders." The A. R. O. records assist in the breeding of high-producing herds from these superior individuals. In the improvement of oat varieties much the same problem faces the plant breeder; namely, to ascertain the high-producing desirable strains and with these high-producing individuals as the parent stock to develop pedigreed strains of the same general characteristics. It is necessary, however, to handle such a great number of plants, that the work soon reaches enormous proportions. Oat improvement work cannot be properly performed by the average farmer, but must be conducted by an expert who is thoroughly familiar with the principles underlying plant breeding, and who can give all his time to the details of his work. For the improvement of Michigan crops, the State of Michigan employs such a man, Mr. F. A. Spragg, Plant Breeder at the Michigan Agricultural College.

During the past few years splendid varieties of wheat, oats, rye and barley have been developed which, if generally planted, would markedly increase the yields of these crops in Michigan. The rapidity of the increase of the acre yields of Michigan through these pedigreed varieties depends simply on how soon a majority of Michigan farmers give them a thorough trial and adopt them.

While the details of the plant breeding work at the Agricultural College are extremely intricate, nevertheless the general plan is easily understood.

In oat improvement work, for instance, the first step is to carry on a variety test to determine the leading varieties. In this variety test duplicate drill-width strips about 600 feet long, of the best oat varieties are planted under uniform conditions and with frequent check plats of some standard variety at intervals. The variety test is conducted year after year until the high yielding varieties are ascertained. From these varieties which, like all commercial varieties, contain a great number of the individual strains, some high-yielding, some low, some stiff strawed, some weak, etc., the highest yielding, most desirable strains are selected. In accomplishing the selection about 200 or 300 superior plants from some particularly high-yielding variety are selected and harvested separately. Next year the

(Continued on p. 347).



A Field of Worthy Oats that Yielded Seventy-five Bushels Per Acre.



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DETROIT, MARCH 11, 1916

### CURRENT COMMENT.

**Farmers' Week.** Farmers' week, so-called, was announced as a general home coming at the Michigan Agricultural College for the farmers of Michigan. As usual, however, the attendance of farmers, while good, was not anything like what such an occasion should have brought out. There was a very considerable number of progressive farmers and farm women present at the various lectures and conferences held in different buildings on the College campus during the week, and the benefit derived by these which will be reflected in their home communities was undoubtedly sufficient to make the event a profitable one to the state.

There were valuable features aside from the instructive lectures which practically formed one-week short courses in the various departments of the College. The conference of county agricultural agents and the conference of Institute lecturers were features of importance, and the rural life conference was a most interesting and instructive feature of the week's program. Farmers' Week is unquestionably of greater benefit than the old-fashioned Round-up Institute, but its beneficial influence might be increased many times by a more general attendance of the farmers of the state who are so situated as to make it possible for them to attend. The fact that several programs were being carried on at the same time in different buildings on the college campus makes a comprehensive report of the meeting as a whole impracticable. Various sections of exceptional interest will be given some space in succeeding issues, for the benefit of readers who did not attend the meetings, but such cursory reports as are possible, will not give an adequate idea of the value of this series of meetings to those who improved the opportunity afforded and attended same.

May we not hope that in some manner a greater number of farmers may come to realize the benefits which accrue to themselves and their communities by general attendance at Farmers' Week in future years.

**The Marketing Problem.** Perhaps no section of the Farmers' Week program was better attended and evoked greater interest on the part of those present, or will have a greater influence in the state at large, than the marketing conference held under the auspices of the Michigan Country Life Association during Farmers' Week at M. A. C.

Here many phases of the marketing problem were discussed by men who have had experience in the development of co-operative enterprises in the state. At one session a score or more

of men who are identified with successful co-operative enterprises in Michigan were down for the discussion of the subject of co-operative associations and their federation in this state. The surprising fact was brought out by one of these speakers that while co-operative enterprises are still in their infancy in this country, the theory of co-operation is now being practiced to a far greater extent than is realized by the average person. This was proven by statistics showing that there are in the United States something over 10,000 co-operative farmers' organizations now in successful operation, including about 5,000 farmers' elevators, 1,500 co-operative creameries and the balance made up of various co-operative organizations for the marketing of products of the farm.

Michigan was shown to have 44 such co-operative organizations in existence at the present time. Some of these have already been described in the columns of this paper, and others will be touched upon in future issues. The difficulties encountered and overcome in the conduct of these organizations were made the subject of discussion by their various representatives and this discussion cannot but prove mutually helpful to those participating in it and of value to the progressive farmers of other sections of the state who were present at this meeting and who are interested in the subject of providing better marketing facilities in their various sections.

The discussion indicated that the greatest obstacle met with in the successful establishment of co-operative organizations in Michigan has been selfishness and narrowness of outlook on the part of members rather than outside competition or influences, although the latter have been factors to be overcome. As the manager of one of the most successful of these co-operative enterprises said at the conclusion of the discussion, the essential difference between success and failure was whether this class were in the majority or the minority in the membership of the organization. In his own and other successful co-operative organizations they have been in the minority. In cases where such organizations have not been successful, they will often be found to have been in the majority.

**Rural Credits.** The discussion of the problem of rural credits at the Country Life Conference held at M. A. C. during the past week, brought forth a renewal of the charge on the part of several farmers living in northern Michigan that a great majority of the bankers in the northern section of the state were exploiting the farmers in an unfair if not an illegal manner, in the demanding of exorbitant rates of interest from farmers who were compelled to seek short-time credit, and in some instances on long-time loans. A general charge was made by some farmers present that throughout the northern counties of the state the rate of interest, including the bonus or bank discount demanded, would average around 12 per cent per annum. Bankers from several points in northern Michigan, including the upper peninsula, were present and denied that the exaction of these usurious interest rates was anything like common in the northern territory.

Charges of this nature are not new. Only recently in referring to such a charge in these columns we asked Michigan Farmer readers to advise us with regard to credit conditions in their localities. Peculiarly enough, all of the replies received were from the well-developed sections of southern Michigan where the writers said that there was sufficient local capital to care for the credit needs of the farmers in their respective neighborhoods.

The farmers of any section where usurious interest is asked for loans made upon good security by men who are properly entitled to the credit

sought, were advised by some of the bankers present at this conference to refuse to pay the exorbitant interest rates demanded, and get in touch with bankers or private capital in other sections of the state where needed funds could be secured on more liberal terms. This advice should be followed wherever practical, and only to satisfy the most urgent present needs should the disposition on the part of bankers or private capitalists in the newer sections of the state to exact usurious interest rates be gratified.

**Improved Seed.** The leading article in this issue relates to the development of improved strains of productive varieties of oats at the Michigan Agricultural College. Other equally as good yielding varieties or improved strains of oats have in recent years been introduced into this state by private enterprise, so-called improved or regenerated seed oats have been imported directly from Sweden, from Holland and other European countries where progressive agriculture is generally practiced, and have in most cases proved greatly superior to the ordinary standard varieties grown from common field-run of seed which have been sown year after year on most Michigan farms.

In practically every community of Michigan some farmer has grown some one of these improved varieties in recent years and demonstrated their adaptability to the soils and climatic conditions of that community. Thus improved strains of seed oats in which selection of the very best has been practiced in seed breeding plots with a view of developing the high-yielding habit are plentiful, and can quite easily be secured for seed purposes by the farmers of almost any section of Michigan without going outside of the community. Where this cannot be done, seed of this quality can be purchased from a distance at moderate prices, so that the added cost per acre of improved seed for the sowing of this year's oat crop would be small indeed as compared with the probable benefit in an increased yield for any farmer who makes oats a factor in his crop rotation.

What is true of oats is equally true of other seed used to plant the staple farm crops. Of all the factors making for a good yield and consequently a fair profit, none is perhaps more important than this factor. Costly methods of improving the fertility of the soil may not be within the immediate reach of every farmer, particularly following a poor season such as last year proved to be in a great many sections of Michigan, but there are few if any farmers who could not manage to secure improved seed for this year's planting, and in case the present varieties or strains of seed used for planting the staple crops are not satisfactory from the standpoint of yield and quality, no investment can be made which will prove more profitable than the purchase of improved seed for this year's planting. If this seed can be secured in the community and from soil which corresponds with that upon which it is to be planted, this would be the cheaper and the better course to pursue, but in any event, the use of improved seed is essential to the best success with the season's farm campaign. This fact will appeal to any farmer who gives the matter his careful consideration, and every progressive farmer should act upon the inevitable conclusion which will be reached upon a fair consideration of this subject.

### MEETING OF BREEDERS OF RECORDED LIVE STOCK.

Exhibitors and breeders of recorded live stock will meet at the Otsego Hotel, Jackson, Mich., Friday, March 17. All live wires are needed and must come. If you are a dead one, notify us and we will send flowers.—Wing, Story and Eagger, Committee.

### HAPPENINGS OF THE WEEK.

#### Foreign.

**The European War.**—During the past week practically all interest in the great conflict centered in the struggle about Verdun, the great fortress in northeastern France. The second tremendous onslaught which had as its central object the taking of Douaumont on Pepper Heights in front of Verdun appears to have been successfully repulsed by the French. Thus far the Germans have taken six square miles of territory, and this it is estimated has cost them probably 50,000 men. It would appear from reports that the French are now in a better position to defend these positions than they have been at any time since the sudden attack by the Germans two weeks ago. There has been more or less continuous artillery firing in all the sectors along the entire western front. The greatest activity outside of the immediate district of Verdun has been to the west in the Argonne and Champagne sectors. There appeared to be an effort here to turn the French wing and squeeze out the defenders of Verdun. This effort has failed thus far. Also east of Verdun in the Woivre sector where the Germans hold an indented line that extends into French territory to St. Mihiel, terrific artillery infantry fighting has occurred, but without any general change in the battle front. In European Russia the Czar's forces are taking the offensive at a number of points and while several hot engagements have occurred, no important changes of battle lines have taken place. South of the Caucasus Mountains the Russians continue to pursue the fleeing Turks. Bitlis has been captured, together with many prisoners and a large depot of artillery munitions.

The German raider Moewe has returned safely to a German port after having captured 15 ships on the high seas, taken 199 prisoners and secured \$250,000 in gold bars. It also laid mines along the coast of Great Britain to which the battleship King Edward and other craft fell victims.

Competition for foreign trade already appears to be gaining in interest among countries at liberty to export. Much comment in Japanese and English newspapers regarding trade in the Orient is being made and American business methods particularly are criticized in this connection. The handicap placed upon countries at war, and the large amount of American capital available are factors which make it possible for concerns in this country to extend their business, not only into fields formerly supplied by the Teutonic nations, but also in direct competition with European concerns whose businesses have been long established.

The opposition party in Panama, where a presidential election will be held next July, has made a formal request for United States' aid during the polling to insure that a fair vote be secured.

#### National.

On Tuesday of this week Indiana voters will express their preference for candidates for office of president and vice-president.

Col. House, personal representative of President Wilson, who recently made an extended trip to London, Berlin and Paris, has returned and is now in conference with President Wilson regarding political conditions in Europe, especially with respect to their relation to this country. Col. House stated that the reports of European hostility toward the United States have been exaggerated.

Five thousand employees of the big packing plants in East St. Louis have received an unsolicited increase in pay. The increase is the first granted to skilled employees during the past 18 years.

Fire destroyed the engineering building and shops and damaged one of the large dormitories of the Michigan Agricultural College early Sunday morning, entailing a loss to the state of about \$24,000. How the situation in which this fire places the regular activities of the mechanical department of the College, will be cared for, cannot be stated at this time.

Muskegon business men are petitioning to make that port made a port of delivery. At present goods must first be taken to Grand Haven before they can be released from bond.

Samuel Johnson, of Dowagiac, for nine years professor of agriculture at the Michigan Agricultural College, and for 16 years past president of a farmers' mutual fire insurance company, died February 29 at his country home of pneumonia. He was 77 years old, and leaves a wife and three children.

In the death of Dr. Henry Baird Favill, of Chicago, President of the National Dairy Council, the dairy interests of the country have lost a valuable leader and advocate. Dr. Favill also had an international reputation as medical student and practitioner.



## DEVELOPING HIGH-YIELDING PEDIGREED OATS.

(Continued from first page).  
seed from the individual plants are planted in separate rows, every row being given a number. These short rows are in turn carefully harvested and their yields recorded, and all but a few of the best are discarded. The third year these best strains are planted in short strips and again are harvested separately and the best strains retained. The fourth year drill width strips of these superior strains are planted. After harvesting these drill-width strips the best strain is determined and planted the next year in a separate field so as to secure as rapid an increase as possible. Every kernel in this field is a descendant from the single kernel which gave rise to the parent plant of the initial selection five years previous. Hence, the variety is truly "pedigreed" since its parentage is of known purity. Thus all of the kernels of the thousands of bushels of Worthy oats are descendants of a single high-yielding plant. The oat flower is self-pollinated and varieties do not cross in the field. As long as care is taken to prevent pedigreed strains from becoming mechanically united with other oats, they can be kept pure.

## How Pedigreed Oats are Introduced.

In order to systematically introduce the improved varieties developed at the Michigan Agricultural College the Michigan Experiment Association was formed. The Experiment Association consists of an organization of Michigan Farmers who are interested in

crop improvement, and who work in co-operation with the Farm Crops Department of the Michigan Agricultural College. The present membership of the association is about 800, local organizations being well scattered over the state. Those members who are interested particularly in improving their oat crop receive from the Farm Crops Department of the Agricultural College bushel lots of the pedigreed varieties developed by the plant breeder. They guarantee to carefully compare these varieties with their own and, if they prove superior, it is, of course, to the experimenter's advantage to retain them.

Their superiority attracts the attention of other farmers and in this way a rapid dissemination of improved varieties is secured.

Mich. Agril. Col.

J. F. Cox.

With a large amount of pedigreed seed available, not only of these varieties developed at the Agricultural College, but other improved varieties of demonstrated high-yielding propensity which have been developed or introduced by private enterprise, every Michigan farmer who grows oats should secure enough pedigreed seed of an improved variety of proven merit to sow at least a portion of his crop. By so doing they will be able to compare the yield of the improved varieties or strains of regenerated seed stock with the degenerated or common seed. If such a comparative test could be made on every farm in the state, or even on a single farm in every neighborhood, the battle for the general introduction of improved seed all along the line would be won.—Editors.

## Growing the Oat Crop

A VERY large proportion of those who grow oats seem to fail to appreciate the real merits of the grain as feed for the different kinds of stock kept on the farm. Oats are among the best of feeds for the horses, milch cows and calves, breeding ewes and lambs, pigs and poultry. They should be ground for the cows and pigs. They give the horses muscle and ambition, help the cows to give milk, the calves to grow, sustain the sheep and enable them to grow wool, the pigs to grow and make an increase in weight cheaply, and the hens to lay eggs. In fact, with a good supply of oats on hand a farmer is prepared to do well by all the stock which he keeps on the farm.

In growing oats we too often fail to take into consideration the nature of the plant. Scientists tell us that it is a descendant of a plant that flourished on low and moist ground. It is a gross feeder, requiring large quantities of moisture and plant food in order that it may grow and mature the grain in 100 days. It is claimed that for every pound of dry matter which the oats produce, they require 500 pounds of moisture.

The oats have a strong system of fibrous roots which reach out in search of plant food in all directions just underneath the surface of the ground. There must be present an abundance of plant food, in an available form, to enable the roots to get all the crop needed in a short period of time. It can be seen that in order to raise heavy crops, good judgment must be used in the selection of soil and location, as well as previous preparation of the ground on which the crop is to be grown.

## Preparing for the Crop.

When we consider the nature of the oats we can see that the ground must be either naturally fertile and moist, or be well fertilized before the seed is sown. Ground on which clover has grown and has been manured for a corn crop the previous year, if plowed in the fall or early in the spring, furnishes ideal conditions for both plant food and moisture. If the ground is

plowed in the fall it catches the moisture from the melting snow and the early spring rains, and if worked down into a good seed bed early, it will be in a condition to contain and hold more moisture throughout the growing and ripening season of the oat crop, than if plowed late in the spring. Early spring plowing is the next best plan. Ground plowed late in the spring will not generally contain a large amount of moisture, and if there is not frequent rains during the months of May and June, there will be a lack of sufficient moisture to make a maximum crop.

When fitting the seed bed much can be done to help the crop, both as to moisture and available plant food. If the ground is well worked until in fine tilth, the fine roots of the plants can permeate it when reaching out for plant food, securing what is needed for rapid growth, and at the same time the blanket of fine dirt will prevent the evaporation of moisture from the ground for some time. After the seed is sown, very little can be done for the crop, except, perhaps, to roll the ground on light, sandy soil.

## The Seed Used.

The degree of success with the oat crop will depend largely on the kind and the quality of the seed sown. One need not expect a good crop if light, inferior oats are sown. The light and small oats should be blown and screened out of the grain used for seed. Small stalks and small heads grow from small kernels. Large stalks and heavier heads grow from plump, heavy kernels.

Better results may be expected if "pure-bred," selected seed is sown instead of seed of the ordinary varieties. Ancestral influences assert themselves when seed is selected from a breed that has been bred for productivity for many successive years. Well-bred seed has greater vitality, roots deeper, produces more stalks from a stool, and on each stalk there will be better heads than on the low-bred varieties.

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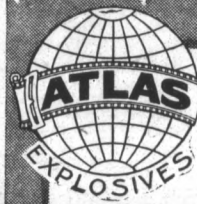


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a half of good, plump seed, well distributed, is all that can stand well on an acre of ground. If too much seed is sown, the stalks will be too thick, the heads small, and will be more likely to lodge, than if each stalk has sufficient room given to develop and stand up well.

Oats give better results if sown only about from one to two inches deep. At the Illinois Experiment Station the yield diminished gradually when sown from one to six inches deep.

**Treat Seed for Smut.**

If there is any possibility of there being any smut present with the seed, it should be treated to destroy it. Good judges estimate that there is a reduction of ten per cent in the yield of oats each year on account of smut. A good treatment is as follows:

Put the oats in a gunny sack and suspend the sack in a solution made with one pint (or pound) of formalin in fifty gallons of water for two hours. If drill is to be used in sowing, spread and dry before attempting to sow.

Wayne Co. N. A. CLAPP.

Another method which gives good results is to spread the oats out on the floor thinly and sprinkle or spray formaldehyde solution over them, mixing thoroughly until every kernel is thoroughly wet. This will require about one gallon of the solution to each bushel of grain. Then the whole should be shoveled into a compact pile and covered with canvas or blankets for four or five hours in order to avoid the rapid evaporation of the formaldehyde. The oats should be spread and shoveled over frequently until dry enough to sow to avoid any heating in the pile, which would injure the germinating quality of the seed.—Editor.

## ONE TOWNSHIP RECORD IN ROAD BUILDING.

From time to time, articles dealing with stone road construction in Fayette township and in other adjacent townships of Hillsdale county, have been contributed to these columns, by the writer. Just now, some facts and figures are available concerning this work in Fayette township, that will be of special interest, owing to the approach of spring and the re-opening of the good roads question throughout Michigan. The history of Fayette's up-to-date road-building policy is full of interest and encouragement for all who have the advance of the movement at heart.

The first step in Fayette's good roads program, was taken nine years ago, when the old path-master system was abolished by the voters of the township. At that time, as will be recalled, the law made the adoption of a cash basis of road improvement optional with the townships. Through the instrumentality of W. B. Howlett, supervisor of the township for a decade, the question was submitted to the voters, and the old, inadequate, path-master system was abolished. Fayette was the only township in the county to abolish this system, voluntarily. Two years later, a state enactment placed all townships on a cash basis of road improvement. During these two years, Fayette had been making superior roads under the cash system, and was ready for the next step made possible by the state reward law. Step by step as rapidly as state laws were enacted, the township availed itself of the new advantages. This was due in large measure to the supervisor just mentioned who, from first to last, has stood for permanent road improvement, and who has seen to it that each new advance was made possible. The nature of the equipment, manner of construction of roads, and remarkable success of the project, have all been set forth in previous articles. The following facts give in a nut shell, the record of achievement:

During the last four years, over ten miles of state reward macadam highway have been constructed in the town-

ship. During this time, the township has received from the state as reward money, \$12,500. During the same period, the voters of the township have voted for permanent road improvement, \$14,500. This amounts in all, to \$27,000. It will be seen from these figures that the net cost to the township for road construction, has been \$1,450 per mile. During these four years, roads in the township have been repaired to the amount of close to \$1,000 per year. The tax for road construction has amounted to about \$2.00 per thousand of assessed valuation. Certainly not a high tax in these days of necessary road improvement, and an amazingly low one, when we take into consideration the work accomplished.

The above facts and figures speak for themselves. It is hardly necessary to say that under the new road law, not a single petition for permanent road improvement has been circulated in Fayette township. The voters are willing to let the good work go on under the township system as it has done. They realize that the distribution of the benefits are all that could be expected, and that time alone is necessary to cover the main roads of the township with macadam. Most of the stone road so far built in the township, is of the nine-foot road-bed sort. As soon, however, as the trunk-line, 16-foot road was made possible, work on this kind of highway was commenced on the Detroit and Chicago pike which traverses the township. The coming summer will see the entire length of this pike in Fayette, covered with crushed stone. Other townships through which this pike runs, are only at the beginning of a work nearly concluded by Fayette.

## Evidence of General Interest.

In the opening weeks of 1916, good roads meetings were frequent in various parts of Hillsdale county. Petitions for state reward highways are numerous, and road construction will be actively carried on throughout the county, the coming season. Taxation will necessarily fall heavy, under the new law, along the highways where this permanent road improvement is made as a result of petition. The fact that these petitions exist, shows beyond a doubt, that the people want better roads. The point in all this is, that those townships that have seized opportunity by the fore-lock, are the ones that will feel least, the burden of taxation for road construction. Fayette has proceeded leisurely, perhaps, but none the less surely. She has not burdened her taxpayers with excessive taxation. The taxpayers themselves have voted the money for road construction, and they have paid it cheerfully. Several other townships of the county have followed Fayette's example, and are solving the good roads problem slowly but surely.

In the course of this article, mention has been made of the work of Supervisor Howlett. It would not be fair to close this brief review without mentioning also, Fayette's highway commissioner, A. J. Marvin. Mr. Marvin has been the active road builder, and made a success of the work that Mr. Howlett has made possible. While other township boards and township officials have been inactive and indifferent, these men have been working. The voters have had brought before them at each town meeting, the possibilities and the problems in hand. They have voted for each new advance, and the highway commissioner has built roads that pass the ordeal of state inspection. It is not yet too late for other townships to follow Fayette's example.

Hillsdale Co.

J. A. KAISER.

When shipping live poultry to market always allow sufficient room and use a coop sufficiently high, so that the fowls will not suffer from cramped positions while on the road. Any discomfort reduces their weight and costs the producer a certain amount of money.



# CLOVER SEEDING ON FALL-SOWN GRAIN.

It will soon be the season to think about the grass seeding. I am a firm believer in early seeding. I believe in this latitude (Central Michigan) clover seed can be sown any time after it freezes up in the early winter with a reasonable degree of safety, safer by far than trusting to the other extreme of lateness. Freezing and thawing does not hurt the clover seed, in fact, in case of a warm spell in mid-winter if the seed should sprout, and then freeze off, it will not spoil the seed as it will start again. This does not often happen, however. Where the seed is thrown on fall wheat or rye, and not dragged in, as is usually the case, early sowing gives the seed a chance to get worked into the little soil crevices during the longer time it is on the ground. I have had more failures by waiting too late in the spring for the ground to get into just the right condition, and the lack of seasonable rains has allowed the seeds to lay on top of the ground and never germinate, especially on the higher ground.

It is well to take a little time in looking around in the selection of your clover seed, where possible, and get it from some farm you know to be pretty free from noxious weeds, then have it cleaned and re-cleaned. Enough foul weeds will volunteer without sowing them.

Alfalfa is coming into more general use all over the country. Here in Michigan where the red clovers are so successfully raised, not as much attention has been paid to this plant. A very good way to begin alfalfa culture is to begin by sowing about a quart to the acre with the red clover, thus getting the land inoculated for the alfalfa, which is necessary.

I think, as a rule, more seed should be sown to the acre than is commonly done. I have never yet seen a clover seeding too thick, unless from a volunteer seed, and it certainly does not pay to have a portion of the land lie fallow for the want of a quart or two of seed. This is mighty poor economy.

Right here I wish to say a word about timothy seeding. There are lands where timothy can be grown profitably, but I believe in a great majority of places where timothy is regularly sown in the crop rotation, it had better be left out entirely. Timothy is a soil exhauster pure and simple, without ample financial return to justify the exhaustion. Twice during my farming career I proved this without doubt, to myself. I farmed to timothy and clover mixed, for about five or six years and noticed my crops were not satisfactory following the hay crop. I left out the timothy and noticed a big difference with the clover alone. After a few years I forgot the lesson. Clover seed soared in price and I bought less clover seed and filled out with timothy seed, and the original condition of poor crops after meadow followed. I then abandoned the timothy crop permanently.

In conclusion, sow about six quarts to the acre, of clean red, or mammoth clover (with alfalfa, if desired), per acre. Do not sow too late. You will find this a good general rule to follow. At least I have found it so in my experience.

Isabella Co. Wm. J. COOPER.

## SUMMER CROPS FOR HOG PASTURE.

Kindly advise me as to a suitable combination of crops to furnish pasture for hogs this coming summer.

SUBSCRIBER.

Peas and oats will make about the earliest hog pasture you could secure in this orchard. Some rape might be mixed with same, or you might prepare a good seed bed and sow dwarf Essex rape at the rate of about five pounds per acre. These forage plants or a combination of same are the most desirable for spring sowing to make hog pasture for the same season.

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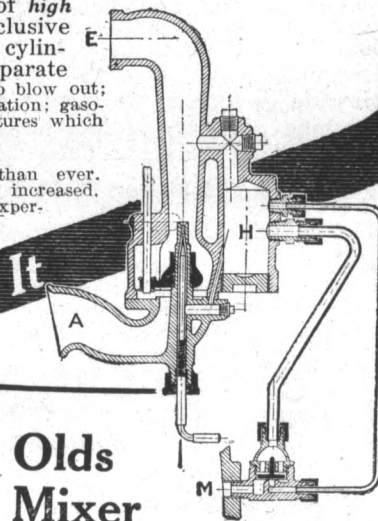
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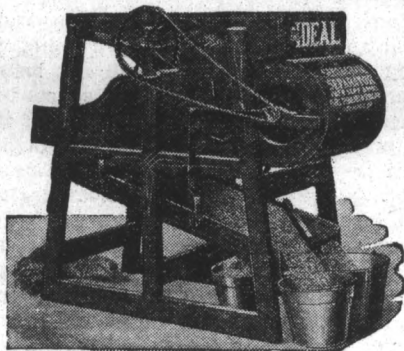
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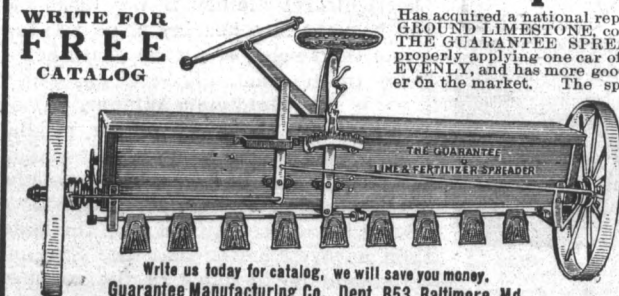
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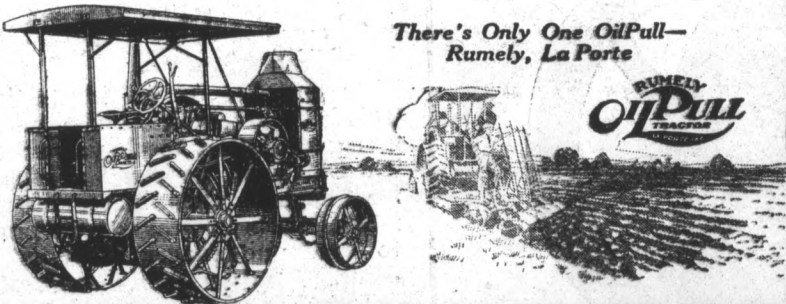
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## Apples for Commercial Orchards

**I**N selecting the varieties of apples to be planted in the commercial orchard it is not possible to experiment with any great number of varieties with safety. The market has already determined the apple that it likes best, and the grower must give the buyers exactly what they desire in order to be assured of a ready market at harvest time. If the commercial orchard consists of only a few acres it must be limited to the production of a few varieties. The orchard of mixed-up varieties does not produce enough of one kind of fruit to interest the buyer and the cost of harvesting is greatly increased if the orchard is not laid out in even blocks of the same kind of fruit. Many of the old commercial orchards were carelessly planted and for this reason some buyers do not care to attempt the reclamation of such trees. One well known commercial variety will prove profitable when ten varieties of varying quality will not bring good returns. Of course, this applies to the commercial orchard and not to the home orchard where the crop is largely used on the farm.

### The Value of the Spy.

The premier apple for this state is undoubtedly the Northern Spy. The storage men like Spys and the ultimate consumer is familiar with Spy quality. The Spy brings a good price when other apples are not in demand, they hold up well in storage and should be considered when planting the commercial orchard. The Spy has its faults. It

popularity, however, as its dessert value becomes known and it should also be included in the commercial apple orchard. It is generally understood among commission men with whom I have talked that the Spy, Baldwin and Greening are Michigan's best contributions to the apple business. We can produce other varieties with great success but when it comes to growing first-class Spys, Baldwins and Greenings there is no state which can do better than Michigan. That being the case it is probable that the commercial apple grower can play safe by sticking to Michigan's "best bet," the Spy, Baldwin and Greening.

Next to the Spy, Baldwin and Greening there are several fine market varieties which do well in this state and find much favor with the large buyers. They include the Canada Red, Wealthy, Yellow Transparent, Grimes, King, Duchess, McIntosh, Fameuse and Jonathan.

The Canada Red holds up well in cold storage and while it is sometimes a shy bearer the quality of the fruit is excellent. It has a slow habit of growth and has been top-worked upon the Gideon in the same manner as the Spy. The Wealthy is a hardy apple of excellent quality and the tree bears heavily at five or six years of age. I have seen young orchards of this variety so heavily loaded that they had to be thinned and the fruit sold neatly packed in bushel baskets for \$2.00 per bushel. I paid that sum myself for a



Plant Varieties in Blocks and Trees Far Apart to Make Orchard Care Easy.

comes into bearing rather late and many growers charge it with being a shy producer. Often it will not bear until twelve years of age but seems to increase in productivity with age if it is given good care. Top-worked Northern Spy apples are now on the market. In one case they have been grafted into Gideon apple stock, which is hardy and a rapid grower and it is claimed by this method that the Spy apple is brought into bearing as soon as any other standard variety. I have never had any experience with these Spy trees top-worked on the Gideon and should like to hear from growers who may have started a Spy orchard in this manner. Personally I believe that the Spy is good enough to wait for but it will undoubtedly be quite a horticultural victory if the trees can be brought into bearing at an age less than the twelve or fifteen years necessary in the past.

### The Baldwin a Winner.

The Baldwin is one of our reliable croppers much in demand for placing in storage, as it is generally popular for culinary use during the winter. Some buyers seem to regard the Baldwin as even better than the Spy and it should be included in the commercial orchard. The Rhode Island Greening is one of our very best apples which does not receive just consideration because of its color. The market seems to demand a red apple, often buying entirely by color regardless of the inferior quality of the product beneath the skin. The Rhode Island Greening seems to be increasing in

bushel of the big ones and a memory of their quality still keeps me a friend of the productive and fine looking Wealthy apple.

The Yellow Transparent is being planted rather extensively in some sections because it is an early bearer, producing fruit in from four to six years. It is a fine looking apple for the local market but it has a thin skin and will not stand rough transportation with the resulting mechanical injuries. Doubtless this apple should not be planted extensively in the commercial orchard unless the grower has a paying local market for his product. The Grimes is an apple of quality which has not been appreciated because it is yellow instead of red. I have heard many growers say that they preferred the Grimes to the Spy. It bears early, usually in six or seven years, and for this reason it appeals to the commercial apple grower who desires an early return on his investment. As the public becomes aware of the Grimes quality it will undoubtedly be in much greater demand than in the past. The King produces fruit in from six to eight years and while of excellent quality it is a shy bearer and does not seem to be planted extensively. In every instance where I have seen first-class Kings on the market they have brought good prices. The apple appeals to the buyer as it grows large and possesses an excellent flavor.

### Growing the Duchess.

I have heard some growers state that when all the Duchess trees now planted came into bearing that there



will be absolutely no market for the Duchess. Doubtless many of these orchards now planted will fail to materialize and the reliable Duchess will still find a buyer although the prices may not be high and the profits may not be any larger than can be expected in the producing of any other variety of apple. The Duchess is a vigorous variety which bears in late August and early September and should be a good apple in some localities for the home trade as it does not have to compete with stock shipped in from other sections as is the case with many varieties of winter apples. I believe that in many sections early apples for local trade will prove more profitable than the later varieties.

The Fameuse or Snow apple, the Jonathan and the McIntosh are somewhat of the same style of an apple and they belong to the same class. The Fameuse bears at from five to seven years, the Jonathan, four to five years, and the McIntosh, five to seven years.

Regarding the McIntosh I recently heard a grower state, "It is a fine apple for the hotel trade, the managers like it as the appearance is fine and the size is not too large for serving on their tables. A customer likes to eat a fine appearing apple but he wishes it to be of moderate size so that he will have room for something else besides the apple. The McIntosh fills hotel requirements exactly." The Fameuse and the Jonathan are both excellent dessert apples which find many friends on the market.

In selecting the varieties for the commercial orchard it is necessary to know just which apples will do the best on your soil and also which varieties will prove the most profitable and meet with a ready sale. The varieties discussed are not the only apples which will prove profitable in Michigan but they are the major varieties which seem to be raised successfully in the commercial orchards of the state.

R. G. KIRBY.

## Saving Orchards from Scale

This is not what the people of central Michigan are doing and the fact has induced me to say something about it through the medium of the Michigan Farmer. The truth is that a large majority of farmers in the south half of the lower peninsula of Michigan seem trying to forget their orchards entirely. To forget them means to lose them. This is very clear to any man who knows the habit of the scale. It is not strange that the average farmer does not spray his orchard. It is hard for him to see how he can do so and carry on his other work; then there is the dread of getting at it, a matter which always pops up in the way, when we think of attempting something new. But more serious yet is the fact that many people have gotten into the notion that the scale cannot be controlled. Every now and then someone says to me: "My neighbor sprayed and the scale are getting his orchard." I desire, if I can, in this connection to give briefly a description of a method that will surely control scale if thoroughly followed.

In the first place, when once these little insects have found their home on the bark of a limb or upon the fruit they are there to stay. They do not move about. If we kill them at all, it must be by contact and that is only possible when the spray strikes where they are. It is impossible to do a thorough job of spraying higher than twenty feet from the ground unless one has a tower, and a tower is not a practical thing for the ordinary farmer. The first thing, therefore, to be done is to trim every tree in the orchard from the top until its height is reduced to twenty feet or less. This means the cutting off of some large limbs. These should be severed just above the point where other limbs grow out from them even though the place at which the cut is made is less than twenty feet from the ground. These limbs will draw the sap and assist in healing wounds. The ends of the cut limbs may be painted with white lead. If the orchard has not been pruned for some years, only the dead wood should be cut from the lower part of the top and the remaining limbs should be left, as the lowering of the top to a point where it can be successfully sprayed will require the cutting of as much wood from the tree as should be removed at one time. The following year, the lower part of the top can be thinned without injury to the tree, but will not the cutting of these large limbs injure the tree? It certainly will, but we must make a choice between two evils.

If we treat it as indicated above and then spray it thoroughly, we shall save it for a good many years, during which time it will bear profitable crops of fruit. Lime-sulphur mixture is the most reliable agent in the destruction of

scale. It should be applied at the rate of one gallon of the mixture in seven gallons of water, or seven gallons of the mixture to fifty gallons of spray. The spraying should be done while the trees are dormant, though no harm will result if the buds have started, providing the leaves have not begun to grow. One should spray with the wind, that is to say, if the wind is in the south when the first spraying is done, the trees should be covered as thoroughly as possible and as soon as the wind gets into the north, they should be sprayed thoroughly from the other side. Every part of the surface of the tree must be covered with the spray if we expect to get results. If only a few scales are left alive, they will multiply into millions by the end of the season and our work will have amounted to very little, and yet if we do the work thoroughly upon trees that have been lowered to a point where we can hit the entire surface, we shall get results.

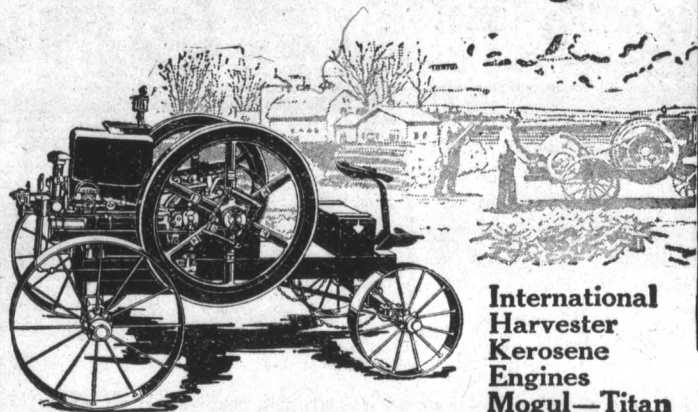
People are spraying successfully everywhere where their work is sufficiently thorough. But the man who goes into the orchard feeling that he cannot spare the necessary time to spray the trees anyway, and must therefore finish the job at the earliest possible moment, and so shoots the material into the tops with not much care as to where it strikes, will never get results and the thorough man who goes into his orchard and tries vainly to reach the tops from twenty-five to thirty feet in the air or higher, no matter how much pains he may take, no matter of the mixture he may apply, will be sure to leave enough scale untouched to render his work of little or no avail.

W. F. TAYLOR.

### CONTROL OF CURL LEAF.

According to observations made by the New Jersey Station, peach leaf curl can readily be controlled by a thorough application of concentrated lime-sulphur before the buds swell in the spring. Bordeaux mixture, applied early in the spring before the buds start, also will control leaf-curl, but the lime-and-sulphur mixture is advisable because it will control San Jose scale as well. In using lime-sulphur it is essential to use a solution that has been properly prepared and diluted with water to a strength of not less than 1.03 specific gravity. The spray material should then be thoroughly applied so that every bud and small twig receives its coating. Any portion of the tree that is not covered with the spray material is likely to become infected. The object of the early spring application is to kill the spores of the leaf-curl fungus before they germinate. In other words, spraying for leaf-curl must be preventive as no cure is possible after the disease is established.

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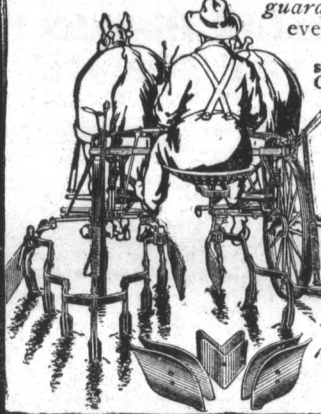
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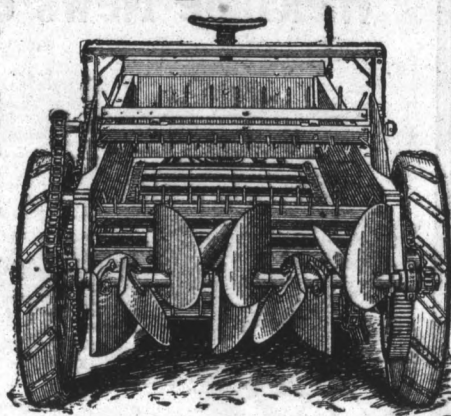
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# Save the Young Lambs

The supply of sheep throughout the whole world is short. Never before in the history of the sheep industry in this country has the outlook for good prices for all the lambs and sheep that can be raised, been so good as at the present time. Prices are higher now than ever before and are likely to be high at all times of the year for several years. It would require several years of revival in sheep raising to bring us up to the normal number of sheep, not only in this country, but in all the sheep raising countries of the world. One is not taking any chances against low prices. The prices in the future are sure to be high.

The spring lambing season will soon be here, and every precaution against usual losses should be taken. It is best to look ahead and prepare to make conditions favorable for saving the lambs when they first arrive. Take "time by the forelock" and be ready for them.

From now to the time that the lambs are expected to arrive, the ewes should be fed well and on a variety of feeds. No one or two feeds will meet their requirements at this critical time. The feed should be sustaining, and one should remember that more good feed will be required to sustain the ewes in good condition the last six weeks before the lambs arrive, than at any other time during the period of gestation. If the ewes are in good condition and strong at the time the lambs arrive they can impart life and vitality to the lambs; if they are low in flesh and strength they can not.

Some of the feed should be of a succulent and laxative nature. This is important for the general health of the sheep, and it is also important to enable them to provide milk for the lambs as soon as they arrive. If the ewes are weak and constipated losses may be expected.

While the exercise need not be vigorous at this time, yet there should be an opportunity for some exercise in the open air each and every pleasant day. It will tend to invigorate them and increase the appetite. If there is strength and vigor and a good appetite the sheep are ready to go on with their work of lamb raising with success, and bring handsome profits for their owner.

### Prepare for the Lambs.

When it is about time for the lambs to arrive one should keep close watch of the flock. During unfavorable weather, and nights, the flock should be confined in the barn. Impromptu pens can be made along on the inside of the shed. If a ewe manifests symptoms of delivery she can be put in one of the small pens and a cover of loose boards put over and some dry straw put on the cover to prevent the cold air coming down on the young lamb and chilling it. If the bed is covered with dry straw and there is a layer of sheep manure underneath, the sheep's breath will warm the pen and the lamb will arrive in a comfortable atmosphere, and soon get up and seek his dinner. A little assistance may be needed just at this time and should be given.

If a lamb is dropped outside the small pen, both ewe and lamb or lambs should be put in a pen to prevent the flock running over them while young and weak and the needed attention given them.

Sometimes the milk does not come in the udder as soon as the lamb arrives. A few feedings of sliced potato, (two double handfuls), on which there has been sprinkled a double handful of fine wheat middlings will usually start the milk.

A tin teapot with a round spout on it which can be wound with a little cotton cloth, over which there can be fastened a rubber nipple, is a handy device to use in giving the little lambs some milk from a recently freshened cow to tide them along until the ewes

have been started into producing a full flow of milk. When heating the milk to about blood heat, it is best to hold the teapot in hot water to prevent scalding the milk and injuring it for food for the little lambs.

As soon as the lambs that were dropped first become sufficiently strong to enable them to follow their mother ewes and get their dinner without help, the ewes and lambs can be put in a comfortable place by themselves and the ewes fed with the best of hay and some roots and grain. Each batch of young lambs, as they come along and get strong, can be added until all the ewes have dropped their lambs, when the whole flock can be handled as conditions may seem to require.

It is always a good plan to provide a creep for the little lambs as soon as they get strong enough to help themselves, where they can be given some of the choicest of clover hay and some dainty grain feeds. A little wheat bran put in a trough, just high enough for them to reach handily, on which has been sprinkled equal parts of wheat middlings and granulated sugar, will help them to get a start at eating. Coarser feeds, like wheat bran and oats, can be given in a short time.

Always clean the trough before putting into it a fresh supply of grain. Lambs abhor filth and will not eat dirty food. Devote a sufficient amount of time to the ewes and lambs to supply their needs, and save all the lambs that can possibly be saved, for a reward, in the shape of high prices, will be awaiting the faithful, who weary not in well doing and succeed in raising a goodly number of spring lambs.

Wayne Co.

N. A. CLAPP.

### RAISING THE YOUNG CALVES.

Why sell the young calves for veal when they are six or eight weeks old? We have always done this, however, until the last couple of years and we find there is more profit in them to keep them until they are 18 or 20 months old. After they are two or three months old they are not so much bother as a person would think. We have a barn in which we used to keep our horses, but having built a new barn last summer we did not need the old horse-barn for the horses any more so we now use it for the young calves.

We packed the inside of the walls with shredded corn fodder from top to bottom, except the windows. This makes it very warm and by keeping it well cleaned and dry it makes a fine place. Of course, on nice, bright days we let the calves outside to get plenty of exercise as this is a necessity to growing stock.

We give them all the skim-milk, and also use a commercial calf meal when they are very young. Also, we feed them corn fodder which does very well for a rough feed. The fodder which is fed to the calves during the winter will not amount to a great deal and when they are wintered the worst part is over, as we have woods which will afford them plenty of pasture and there is also a spring which gives them all the water they want during the summer.

In the fall when they are about 12 or 14 months old it is a good time to sell them, as they will need quite a bit of winter feed and they will not make much gain in the winter. It is a good time to pick a good milch cow from the bunch while you have several to choose from. I think there is much greater profit in selling them this way.

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THE PIG-EATING SOW.

Occasionally a sow will eat her own pigs immediately after they are farrowed, and as is generally true in a case of this kind an emergency measure is the thing most desired. At the same time it is the thing most difficult to prescribe. As a question of general interest it is simply one of how to prevent the evil. Only when a sow is in a feverish condition does she kill and eat her own offspring.

A pig that has been overlaid in the nest is very often devoured by the mother, but there is no connection between this act and that of the sow frantic with fever that kills her pigs. Except through some abnormal condition or undue excitement no sow ever purposely devours her young. For this reason the matter of feeding a laxative and cooling ration to the brood sow before and following the farrowing period becomes one of much importance. At this time corn should be studiously avoided and especially following the time the sow has farrowed should the ration be administered with all the care possible and the sow should be kept from all undue excitement. Here is where the one who handles his sows with a great deal of personal attention the year around has a distinct advantage over the breeder whose sows are wild and object to his presence at the time of farrowing.

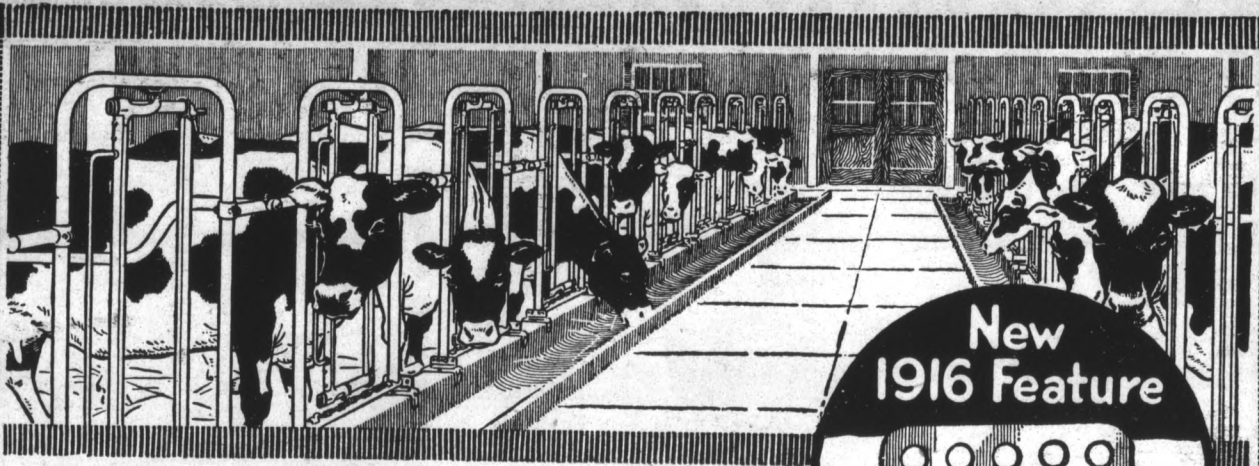
Various remedies have been proposed for breaking a sow of the habit of eating her pigs, some of which are recommended as very effectual. But in my experience in raising swine which covers a period of about 27 years I have never been bothered very much with pig-eating sows. During my first few years' experience I was troubled some in this way and I was not long in getting rid of the sows, believing they were to blame for having such an appetite, but I found by study and practical experience that the feeding and care of the sow before and soon after farrowing, had all to do with the matter. At present I have eleven brood sows six years old and each one has brought two litters of pigs a year since a year old. Of the hundreds of pigs these sows have produced not one has been devoured by the mother. These sows are now in the very best of condition and I expect them to bring at least 100 pigs during March and April.

W. M. HARDY.

LIVE STOCK NEWS.

Because of the greatly unprecedented shortage of sheep, yearlings and lambs in preparation for the market in the United States, ruling prices everywhere are far higher than in any former winter season. Prime lambs offered on the Chicago market have sold up to \$11.50 per 100 lbs., with relatively high prices paid for choice yearling wethers, as well as for older wethers and prime ewes.

With labor, both skilled and unskilled, better employed and wages much higher than ever before, consumption of beef and other meats is on a large scale, but the average family pocket-book is not fat enough to admit of paying the high prices asked in the retail meat markets of the country for the choicer cuts of beef. This results in killers wanting chiefly a class of cattle of light and medium weights that can be cut up into beef selling at a moderate price. Most of the cattle now reaching the Chicago market are running to short-fed steers and warmed-up cattle, and although there is very little call for the best long-fed steers, so few are offered that sellers find no difficulty in getting extremely high prices. For weeks past about all of the highest-priced steers have consisted of heavy lots, and there has been an absence of prime little yearling cattle. Reopening of the feeder outlet in the Chicago market is a matter of general encouragement, and some sales of feeding steers have taken place at a range of from \$6 to \$7.25 per 100 lbs. Calves from the Wisconsin dairy districts will soon be marketed freely, and lower prices may be expected. Cattle feeding conditions are the reverse of those existing a year ago, when good corn was abundant and the markets were crowded with choice beefs. Now, most of the corn is soft and deficient in feeding quality, and good corn is dear.



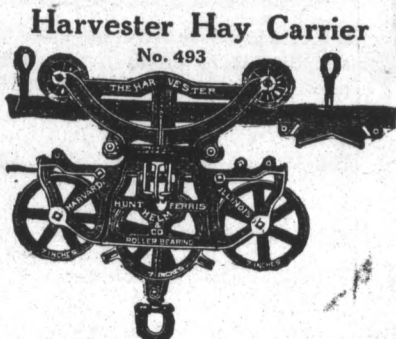
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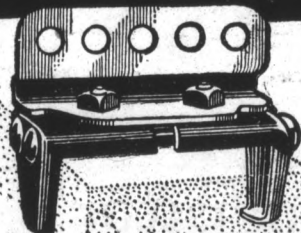
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## Making Milk Production Profitable

**E**CONOMY in the production of milk is of prime importance to the dairy farmer today, especially in view of the fact that labor and feeds are growing higher and higher each year. The farmer today who disregards record keeping with his herd is walking in the worst kind of darkness. He is a gambler whose losses or winnings are uncertain, and his doom is certain sooner or later, no matter whether his stock be grade or registered.

Few sections of the country have placed the dairy cow upon a more critical pedestal than the farms of New York state, where the dairy cow returns an annual product worth \$80,000,000. For some years it has been the aim of both the agricultural educational agencies and the leading dairy farmers to place the state dairy herds upon a business basis, which allows the farmers to know to a certainty just what each cow of each herd is returning in profit or loss to the owner.

### Many Cows Are Boarders.

Recently the data taken from the records of the forty cow-testing associations of the state of New York have been compiled. These show that in the average herd in the associations all the profit is made from two-thirds of the cows. In other words, one-third of the cows are a "stone around the necks of the others," as it were, not only reducing their annual profits, but demanding an excessive expenditure for feed and care. In a number of dairy herds it was discovered that not more than one-half of the cows were even making a profit. Other herds have one-third rated as profitable, one-third as "boarders," merely paying for their feed but returning nothing for care and housing, while the remaining one-third are plainly robbing the farmers of the hard-earned money produced by those cows making a profit.

The dairy farmer who is producing milk today is aware that at the present day it is much more difficult to make a profit from the herd than in former years; yet few realize that the cost of producing milk has doubled in the past twenty years. Since the price at which the product is sold has not increased in like proportion it becomes necessary for the individual cow in the herd to produce a much larger quantity of milk and fat from the same quantity of food in order to make a profit for her owner. There are many unprofitable cows; this is the reason that we hear in recent years so much about the "boarder cow."

### Cost of Production Has Increased.

The condition existing at Delhi, New York, where the cow-testing organization possibly first received its greatest start, shows in a concrete manner the way the present dairy situation is going, so far as the producer of milk of any kind is concerned. Since 1898 the prices paid for feeds has increased 69 per cent; the flat prices paid to dairy farmers for their milk in the same period has increased only 39 per cent.

Taking into consideration the increase in the price of roughage and labor and the increase in the value of dairy cows, which makes a like increase in the interest on the original investment and the depreciation on the herd, we may safely state that it is costing the dairy farmer at least 85 per cent more to produce milk today than it did in 1898; while the increase in the selling price is only about 40 per cent, saying nothing about the increased demands made for high-grade milk products on the part of the consumer.

In view of these facts, the cow-testing association is the only real salvation of the modern dairy farmer, for the records supplied by a business-kept organization enable the farmer to cull out those cows being kept at a loss or at a low profit, from his herd; it tells the farmer which cows to keep the heifer calves from in order to

raise better producing cows; it enables the farmer to distribute his feed in proportion to the milk and fat produced, and stimulates better work both on the part of the dairy farmer and his help in taking care of the herd and milk. All these important points aid in the economical production of milk.

### Value of Individual Records of Cows.

A record of the production of individual cows and of herds gives the dairy farmer a basis for profitable feeding. Instead of guessing, the cows are fed according to the milk they produce and by following this method the farmer is able to obtain a greater amount of milk from a given number of cows for the same amount of feed. If the farmer be able to save five cents per day per cow for a year, the amount will be large enough to pay for the attention, but many New York farmers are making savings as high as \$15 per week per head as a result of this method.

To intelligently cull the dairy herd the dairy farmer must have a record of the milk production of each individual cow and the cost of the product. The farmer who weighs his milk will get more milk from his herd because he is bound to give them better care. His yearly records furnish a basis of comparison by which to feed and breed, and so the work becomes more and more profitable. This knowledge will demand that the farmer have the best possible sire, a son of a high-producing mother who produces the greatest amount of butter-fat in the herd.

### The Effect of Advanced Methods.

It was intended by nature that the dairy cow produce a sufficient amount of butter-fat to feed her calf until it was old enough to eat grass. This age of dairying was followed by a summer production of possibly 1,000 pounds of milk. But the application of modern business methods to dairy farming has allowed us to find cows whose annual production is as high as 15 tons of milk, or more than one ton of solids, and more than half a ton of fat. Making this comparison as between the cow nature gave us and the one which man has brought to a high standard by his advanced methods, it is not at all strange that we find a universal variation in individual cows and farm herds, and that the country is overrun with scrub boarders. If the farmers of every dairying section would cull out these poor producers, they would reduce the production of milk, stop a great leakage, and immediately the price of milk and butter-fat would advance, thus making prices better. They would be feeding profitable cows and making milk profits all along.

The scrub boarder cows are not found only in certain sections of the country. This condition of affairs is not exclusive to any one breed of cows, but is found in general wherever the results of the modern cow-testing organization have been tabulated and farmers profited by its figures. Where the record work has been carried on for a number of years we find the number of profitable cows is very much increased. In one herd in New York, of 23 cows whose average yearly production was 6,500 pounds of milk and 241 pounds of fat, all of the profit was made from 15 of the herd, the farmer paying the other eight poorest cows \$41.42 for their company for one year. And this herd, it must be remembered, is much above the average farm herd. The 15 best cows paid all expenses and paid 20 per cent on the investment. The best cow paid the farmer 44 cents per hour for all the time spent on her, while the poorest cow paid him but five cents per hour. It is up to the farmers to do as any wise manufacturer would, eliminate the unprofitable milk producers. The cow turns our raw products into a finished product, and as an individual producing machine, must be made to perform the same amount of profit as



we would expect from a man we were hiring for a certain period at a certain fixed figure per month.

#### The Returns for Labor.

The results of the work of the Ithaca Cow-testing Association presents interesting facts to the farmer who desires to place his business upon a profitable scale. While the average cow in the poorest herd cost her owner a loss of \$8 per year; the average best ten cows in the same herds made a profit of \$17.40 per cow and the average best cow made \$38.72 profit over all expenses. In the best six herds although the average cow made \$11.45 profit, the best ten raised it to \$42.92 and the best cow to \$68.20, making \$100.74 over her feed. The farmers owning the poorest cows were therefore obliged to work long hours in order to make a day's wages, while the best cows in the same herds paid all food, interest and depreciation and gave a day's wages in three hours and 31 minutes.

If the dairy farmer desires shorter hours and better wages, he must keep better cows. The labor, interest and

and lose the seed. They don't want to be too ripe for silage. Last summer was wet and cold and beans did not mature as early as usual. The early yellow, or the Ebony variety, answer very well.

I think the only reason for your ensilage moulding is lack of moisture. If it had been wet enough it would not have moulded at all. The frost takes out a lot of moisture from corn. More than we would think.

#### Will Cull Beans Improve the Ration?

I would like to know if I am feeding the proper ration to a cow fresh in December. In the morning we feed ground oats and corn, about two quarts and a 12-quart pail of sliced roots. I feed the chops right with the roots. I feed this night and morning with cornstalks. At noon we feed clover hay and soft corn. Would it be advisable to feed cooked cull beans?

Wayne Co.

E. W. K.

Corn and oat chop is not rich enough in protein to properly balance a roughage ration of cornstalks and clover hay. Some grain food should be added that will contain protein in excess of a balanced ration to balance the extra carbohydrates in cornstalks. Beans



To Increase Production in Dairying and Lower its Cost, Keep Good Producing Cows.

depreciation cost in these records are based on data given by the owners of the herds and are as follows: Labor, \$20.84; depreciation, \$8.45; interest, \$3.25 per cow. Time spent in milking and care for a year per cow, 117 hours. Average charge for time 18 cents per hour, or \$1.80 per working day.

It is obvious when these tests show the presence in a herd of a cow which is being kept at a loss or at a very small profit as compared with the other cows, that the first step should be to eliminate her from the herd and replace her by one of greater productive capacity. It is not likely that any amount of feed and good care will convert a cow like these above referred to into a profitable producer. While there can be no doubt but that the general grade of our dairy cows is being increased, yet there is still ample room for improvement on every farm where cows are kept.

New York.

E. W. GAGE.

#### DAIRY PROBLEMS.

##### Soy Beans for Silage—Mouldy Silage.

About a year ago I read an article in the Michigan Farmer in regard to sowing soy beans in corn for ensilage. I planted a bushel of Mammoth Yellow soy beans; they made a very good growth, pods formed on the vines but no beans formed. I wondered if those were the right kind of beans for this section, or was it owing to the extremely wet season? I also would like to know what should cause ensilage to mould in the center of the silo? It is only in places and they will be in spots several inches in diameter. The corn was frosted but was cut right away and put in the silo. There was one man attending to drawing water and running it in the blower, and four men in the silo. It is a 10-foot silo. Lenawee Co.

J. A. P.

The Mammoth yellow soy is a rather late variety for Michigan, but even at that you get growth enough to make good silage. A too early variety might get so ripe that the pods would shatter

will do this all right and can be bought at a reasonable price. If it is not too much trouble to cook them and not too much trouble to educate the cows to eat them, there is no better way to feed them. But if you experience any difficulty in either of these ways you can have the beans ground into meal and mix it with the corn and oat chop. I don't think you are feeding sufficient grain. Four quarts per day, two quarts night and morning, is not enough to permit a cow to do her best. Double this amount would be more like it. Of course, if you feed cull beans now that will make a more liberal ration. Don't cut down on the corn and oat chop but feed the beans in addition.

COLON C. LILLIE.

#### COST OF KEEPING A COW.

We sometimes get the impression that the cost of keeping a horse or a cow is determined by the amount of feed consumed, plus the amount of labor expended, and possibly an interest charge. The government has published figures on the cost of raising, from birth, a two-year-old heifer which show that 65.6 per cent of the total cost was expended for feed, 12.9 per cent for labor, 5.9 per cent for interest, and 15.6 per cent for other charges, such as buildings, equipment, bedding, etc., or with a total expense of \$62.06. These items which might be called "other charges," amounted to \$9.72.

This emphasizes the need of caution in determining the cost of any single enterprise of the farm. Too frequently these "other charges" are omitted in reporting profits. About the surest way to avoid the possible error is to keep a complete set of accounts. Of course, there is some work attached to it but by adopting a simple entry method of book-keeping it isn't such a bad job.

## WHICH WILL YOU BUY



## A "Cream Thief" or a "Savings Bank" Cream Separator?

WITH a great many machines or implements used on the farm it doesn't make much difference which of several makes you buy. One may give you a little better or longer service than another, but its mostly a matter of individual preference and often it makes little difference which one you choose.

Not so with buying a cream separator, however.

There is a big difference in cream separators.

The most wasteful machine on the farm is a cheap, inferior or half worn-out cream separator.

## The most profitable machine on the farm is a DE LAVAL Cream Separator

A cream separator is used twice a day, 730 times a year, and if it wastes a little cream every time you use it it's a "cream thief," and an expensive machine even if you got it as a gift.

But if it skims clean to the one or two hundredths of one per cent, as thousands and thousands of tests with a Babcock Tester show the De Laval does, then it's a cream saver, and the most profitable machine or implement on the farm—a real "savings bank" for its fortunate owner.

But cleaner skimming isn't the only advantage the De Laval user enjoys.

There are many others, such as longer life, easier turning, easier washing, less cost for repairs, and the better quality of De Laval cream, which, together with its cleaner skimming, make the De Laval the best as well as the most economical cream separator.

If you need a De Laval right now there is no reason why you should let its first cost stand in the way, because it may be purchased on such liberal terms that it will actually pay for itself out of its own savings

A De Laval catalog to be had for the asking tells more fully why the De Laval is a "savings bank" cream separator, or the local De Laval agent will be glad to explain the many points of De Laval superiority. If you don't know the nearest local agent, simply write the nearest De Laval main office as below.

### The De Laval Separator Co.

165 Broadway, New York 29 E. Madison St., Chicago  
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## A FINE RECORD

Sodus, Mich., Feb. 25th, 1916—My cow Abbie has just finished a year record of 14201 lbs. of milk, 817 lbs. of fat. She will freshen in April and is still making 10 lbs. of fat a week.

I am well pleased with UNICORN.  
Fred C. Gleason.

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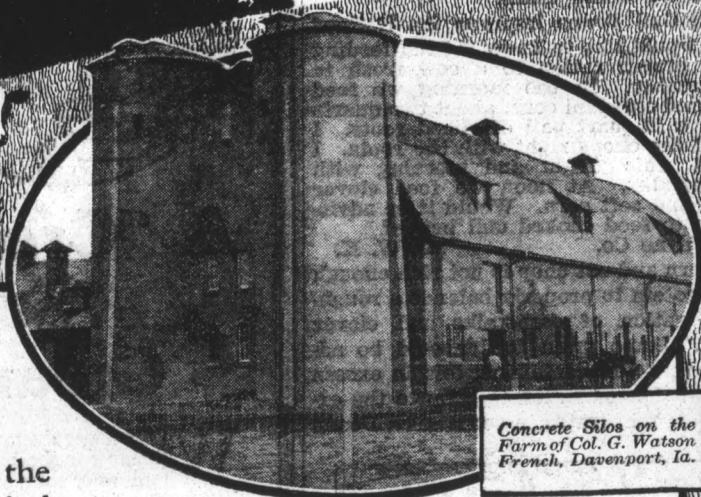
LEARN AUCTIONEERING at World's Original and become independent with no capital invested. Every branch of the business taught in 5 weeks. Write today for free catalog. JONES' NAT'L SCHOOL OF AUCTIONEERING; 28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

CULL BEANS FOR FEED. Write if you can use a car or less. YOUNG-RANDOLPH SEED CO. Owosso, Mich.

Hinman Milking Machine, practically new at a bargain. Selling my herd so have no use for it. Pardee & Seaman, Dearborn, Mich.



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Farm of Col. G. Watson  
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does not deteriorate. It grows stronger with age. Filled or empty, the concrete silo resists the heaviest strains, the most severe wind storms, and, in many instances, has been the only structure standing after cyclones.

### Fireproof

Time and again a disastrous farm fire has totally destroyed barns without affecting adjoining concrete silos, or their contents. This has made possible the keeping of herds that otherwise would have had to be sold.

### Keeps Silage From Spoiling

The concrete silo protects silage from rats and mice. They cannot gnaw through and let air in to ruin the contents. Silage does not dry out in a concrete silo nor freeze readily;

nor is the concrete affected in any way by the silage acids or rot.

### Easily Built

The first cost of a concrete silo is low—and it is the only cost. Once built, no maintenance is necessary. In most communities there are competent contractors who will build silos for a very moderate sum, and in a very short time. Farmers frequently build silos themselves, or work in co-operation with others in the neighborhood to build several silos during the slack season.

Write our nearest office for our book—"Concrete Silos."

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## FEED AND MILK.

There are yet many who wholly misunderstand the question as to what effect feed fed to cows has on the quality of milk produced. By quality we mean the amount of butter-fat. Some feeds affect the flavor of milk and possibly to a slight extent its color. Feeds rich in protein, it is long known, have a tendency to increase the percentage of fat in some animals but not in others.

The milk-producing function of the cow is to a large extent under the control of the nervous system. Anything that disturbs the quiet or normal condition of the animal, whether it be rough usage, extremes of temperature, will have its effect upon the quality.

On the other hand, plenty of the right kind of feed increases the quantity of milk until the animal reaches the maximum production. We have yet to hear of any feed or system of feeding that so improves the quality of milk as to make a given quantity of milk produce more butter-fat at one time than another. Of course, the greater the quantity of milk, the more cream there will be.

Those who have been in the habit of stinting their cows during the winter season, thinking that liberal feeding does not pay, are losing thereby, although they may not realize it. Where feed is scarce and high, it is possible to bring a cow through the winter with a very moderate amount of feed, but there will be a loss in the end.

Indiana.

D. LEATHERMAN.

## MILK AND CREAM CONTESTS.

Milk and cream contests have been found to be a very valuable means of inducing dairymen to take greater pains in the production and handling of milk. It is said that "Education accomplishes more than legislation." The law can, of course, be applied to glaringly insanitary conditions, but after a certain degree of cleanliness has been reached, subsequent improvement must be obtained in other ways.

The first milk and cream contest was held in 1906 during the National Dairy Show at Chicago. Since then there have been many others and the method of scoring the exhibits has gradually been improved. Under the present system, out of a total possible score of 100 points, 35 are allowed for the bacterial count, 25 for the flavor and odor of the milk, 10 for the absence of visible dirt, 10 for percentage of fat, 10 for percentage of solids not fat, five for acidity, and five for the appearance and condition of the bottle and cap.

To obtain a perfect score for the bacterial count the milk must contain less than 500 bacteria per cubic centimeter. A bacterial count above the local legal limit results in a score of 0. The deductions from the possible score of 25 for flavor and odor are made according to the conditions that are found. This is also true of the examination for visible dirt. Four per cent, or more, of fat in the milk results in a perfect score of 10; less than 2.7 per cent in 0. To obtain a perfect score for the solids not fat, the percentage must be 8.7 or more, and less than 7.8 per cent is counted 0.

The same score card is now being used for market milk and for certified milk, but in most of the contests those who compete in the certified class are not allowed to enter samples in the market class.

The educational value of these contests is indicated by the fact that almost invariably dairymen who have had experience in such competitions obtain higher scores than those who have not. On the other hand, the contests are used also to point out to consumers the fact that clean milk is more difficult and expensive to produce than dirty milk.



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# Magazine Section

LITERATURE  
POETRY  
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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

**M**ERE activity may be farthest from duty-doing. Not "how to keep busy," but "which work is my duty?" is the only question that ought to interest you.

The laziest person living is the one who does what he wants to do, instead of what he ought to do.

Strength means power that is payable on demand. Therefore, strength calls for accumulated, carefully guarded power; accessible, plentiful and responsive to our slightest call.

## Will Power By DR. N. OXENIUS

A self that I can control, and not a self that controls me, is an absolute essential to strength.

And the converse is true, that constant self-indulgence of any kind is incompatible with strength.

Would it not be well to think of this the next time that familiar habits makes its demand upon us?

It matters not what the habit is,

nor how seemingly trifling or harmless—gambling, tobacco, liquors—if it is a habitual concession to self, then it is sapping our strength. The only remedy is merciless, instant death to the habit.

Many a person who prides himself on his will-power is failing to use it in the really critical issues of life.

He will set a high standard for him-

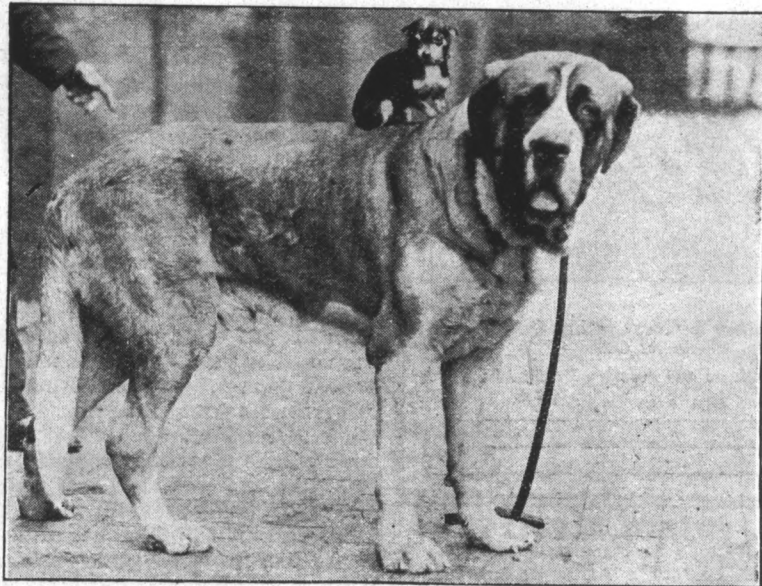
self in some important detail of everyday living, such as rigid punctuality or scrupulous care in his person or dress, or persistent physical exercise, and he will hold himself to that standard, no matter what it costs to do so, by an uncompromising effort of the will.

This is good exercise; it takes character and it makes character. But when it comes to moral self-conquest, that same person is oftener the veriest weakling. He may know that a cer-

## WORLD EVENTS IN PICTURES



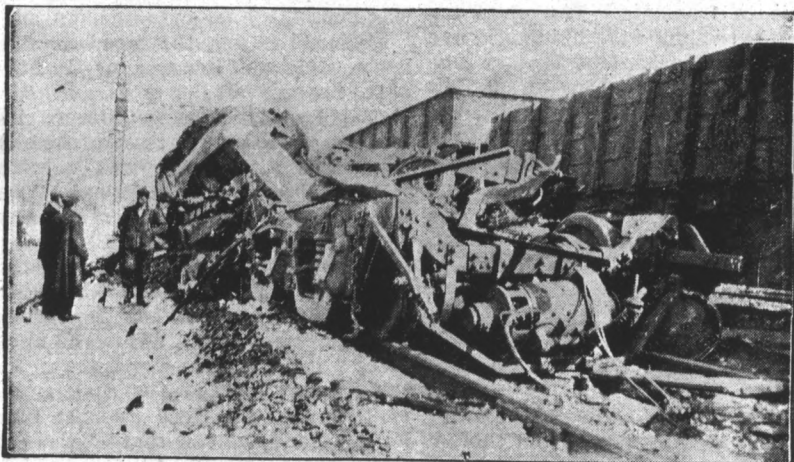
Charming Gown of White Chiffon Cloth with Folds of Black Net.



The Largest and Smallest Dogs Entered at the Recent Dog Show at Madison Square Garden, New York.



Suit of Cream Cloth with Brown Velvet Trimming.



Results of the Recent Wreck on the New Haven Railroad at Milford, Conn., where Ten Persons were Killed.



Figured Silk and Rosettes Used Effectively in this Plain Hat.



Lord Beresford Appeals for a Stricter Blockade of Teutons.



The Latest Idea is to Motorize Sleds, Two Types of which are Shown Above Ready for a Race.



Method of Recording Vocal and Instrumental Music in a Studio.



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Farmers have learned that roofs composed of material other than metal last only a few years.

Such roofs deteriorate rapidly. Leaks develop over night which ruin stored crops—the result of the season's labor.

Unless all of your buildings, both old and new, are covered with good metal roofing, you cannot be even reasonably sure that your property is well protected.

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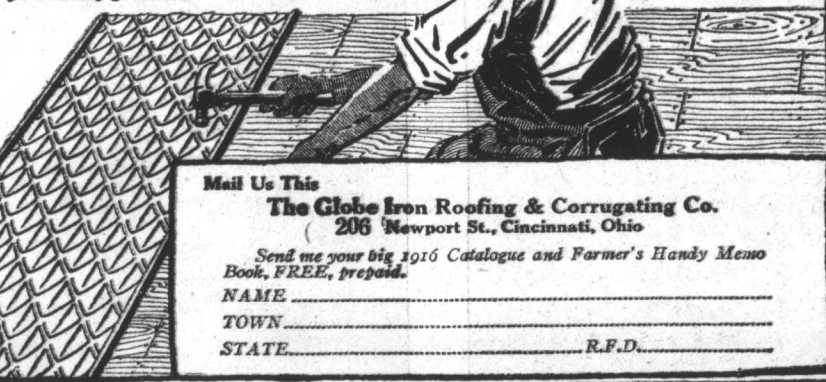
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WALTER C. PIPER,  
S.W. Cor. Grd. River & Griswold, Detroit, Mich. Cad. 436.

**FOR SALE:** Fruit Farm 140 A., clay loam; 6,500 apple trees mostly 7-16 years old; 75 per cent Spies; no scale; high rolling location; 40x80 barn; fruit storage 36x76x10 ft.; 11 room house; all necessary out-buildings; small lake; buildings beautifully located; 1 1/2 miles from Alto on P. M. Owner E. L. TIMPSON, Alto, Michigan.

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**Farmers:** You can get more value for your money in farm property in Southern Michigan than any where in the United States. If interested write for free catalogue. C. F. BYERS & BROWN, Coldwater, Michigan.

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**80** acres all under cultivation, 3 1/2 miles from good town, 1/2 mile from good clay soil, flowing well, buildings only fair on R. F. D. Price only \$8000.00. J. W. FARRER, HILLMAN, MICH.

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tain indulgence is wrong and harmful, yet the idea of summoning against this inclination toward self-gratification, that iron will of his on which he rightly prides himself, seems not to occur to him.

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## Light of Western Stars

By ZANE GREY

But surely he had not come alone! The lean, dark faces, corded and rigid, told her in what direction to look. She heard the slow, heavy thump of hoofs. Soon into the wide aisle between the trees moved the form of a man, his arms flung high over his head. Then Madeline saw the horse and recognized Majesty, and she knew it was really Stewart who rode the roan. When doubt was no longer possible, she felt a suffocating sense of gladness and fear and wonder.

Many of the guerillas leaped up with drawn weapons. Still Stewart approached with his hands high, and rode right into the camp-fire circle. Then a guerilla, evidently the chief, waved down the threatening men, strode up to Stewart, and greeted him. There seemed to be amazement and pleasure and respect in the greeting. Madeline could tell that, though she did not know what was said.

Stewart appeared as cool and careless as if he were dismounting at her porch steps; but when he got down she saw that his face was white. He shook hands with the guerilla, and then his glittering eyes roved over the men and around the glade until they rested upon Madeline. Without moving from his tracks, he seemed to leap, as if a powerful current had shocked him. Madeline tried to smile to assure him she was alive and well, but the intent in his eyes, the power of his controlled spirit, telling her of her peril and his, froze the smile on her lips.

With that he faced the chief and spoke rapidly in the Mexican jargon which Madeline had always found so difficult to translate. The chief answered, spreading wide his hands, one of which indicated Madeline as she lay there. Stewart drew the fellow aside and said something for his ear alone. The chief's hands swept up, in a gesture of surprise and acquiescence.

Again Stewart spoke swiftly. His hearer then turned to address the band. Madeline caught the words "Don Carlos" and "pesos." There was a brief muttering protest, which the chief thundered down. Madeline guessed her release had been given by this guerilla and bought from the others of the band.

Stewart strode to her side, leading the roan. Majesty reared and snorted when he saw his mistress prostrate. Stewart knelt, still holding the bridle. "Are you—all right?" he asked.

"I think so," she replied, essaying a laugh that was rather a failure. "My feet are tied."

Dark blood blotted out all the white from Stewart's face, and lightning shot from his eyes. She felt his hands loosening the bonds round her ankles. Without a word he lifted her upright and then upon Majesty. Madeline reeled a little in the saddle, held hard to the pommel with one hand, and tried to lean on Stewart's shoulder with the other.

"Don't give up!" he said.

She saw him gaze furtively into the forest on all sides; and it surprised her to see the guerillas riding away. Putting the two facts together, Madeline formed an idea that neither Stewart nor the others desired to meet with some one who would shortly arrive in the glade.

Stewart guided the roan off to the

right and walked beside Madeline, steadying her in the saddle. At first she was so weak and dizzy that she could scarcely retain her seat. The dizziness left her presently, and then she made an effort to ride without help. Her weakness, however, and a pain in her wrenched arm, made the task laborious.

Stewart had struck off the trail, if there were one, and was keeping to denser parts of the forest. The sun sank low, and the shafts of gold fell with a long slant among the firs. Majesty's hoofs made no sound on the soft ground, and Stewart strode on without speaking.

Neither his hurry nor his vigilance relaxed until at least two miles had been covered. Then he held to a straighter course, and did not send so many glances into the darkening woods.

The level of the forest began to be cut up by little hollows, all of which sloped and widened. Presently the soft ground gave place to bare, rocky soil. The horse snorted and tossed his head. A sound of splashing water broke the silence. The hollow opened into a wider one, through which a little brook murmured its way over the stones. Majesty snorted again and stopped and bent his head.

"He wants a drink," said Madeline. "I'm thirsty, too, and very tired!"

Stewart lifted her out of the saddle and, as their hands parted, she felt something moist and warm. Blood was running down her arm and into the palm of her hand.

"I'm—bleeding," she said a little unsteadily. "Oh, I remember—my arm was hurt."

She held it out, the blood marking her conscious of her weakness. Stewart's fingers felt so firm and sure. Swiftly he ripped the wet sleeve. Her forearm had been cut or scratched. He washed off the blood.

"Why, Stewart, it's nothing! I was only a little nervous. I'm not used to seeing my own blood."

He made no reply as he tore her handkerchief into strips and bound her arm. His swift motions and his silence gave her a hint of how he might meet a more serious emergency. She felt safe; and because of that impression she was surprised when he lifted his head and she saw that he was pale and shaking. He stood before her folding his scarf, which was still wet, and from which he made no effort to remove the stains.

"Miss Hammond," he said hoarsely, "it was a man's hands—a greaser's fingernails—that cut your arm. I know who it was. I could have killed him; but I might not have got your freedom. You understand? I didn't dare!"

Madeline gazed at Stewart, astounded more by his speech than his excessive emotion.

"My dear boy!" she exclaimed; and then she paused. She could not find words.

He was making an apology to her for not killing a man who had laid a rough hand upon her person. He was humble and ashamed and seemed to be in a torture of fear that she would not understand why he had spared the man.

"Stewart, I understand. You were being my kind of cowboy. I thank you!"



But she did not wholly understand. She had heard many stories of this man's cool indifference to peril and death. He had always seemed as hard as granite. Why should the sight of a little blood upon her arm pale his cheek and shake his hand and thicken his voice? What was there in his nature to make him implore her to see the only reason he could not kill an outlaw?

The answer to the first question was that he loved her. It was beyond her to answer the second; but the secret of it lay in the same strength from which his love sprang—an intensity of feeling which seemed characteristic of these western men of simple, lonely, elemental lives. Madeline's eastern lovers, who had the graces that made them her equal in the sight of the world, were without the one great essential that a lonely, hard life had given to Stewart. Nature here struck a just balance.

Something deep and dim in the future, an unknown voice, called to Madeline and disturbed her; but because it did not call to her intelligence she deadened the ears of her warm and throbbing life and decided never to listen.

"Is it safe to rest a little?" she asked. "I am so tired. Perhaps I'll be stronger if I rest."

"We're all right now," he said. "The horse will be better, too. I ran him out, and up hill at that."

"Where are we?"

"Up in the mountains, ten miles and more from the ranch. There's a trail just below here. I can get you home by midnight. They'll be worried down there."

"What happened?"

"Nothing much to anyone but you. That's the—the hard luck of it. Florence caught us out on the slope. We were coming back from the fire. We were dead beat, but we got to the ranch before any damage was done. We sure had trouble in finding a trace of you, till Nick spotted the prints of your heels under the window, and then we knew. I had to fight the boys. If they'd come after you we'd never have got you without a fight. I didn't want that. Old Bill came out packing a dozen guns. He was crazy. I had to rope Monty. Honest, I tied him to the porch. Nels and Nick promised to stay and hold him till morning. That was the best I could do. I was sure lucky to come up with the band so soon. I had figured right. I knew that guerilla chief. He's a bandit in Mexico. It's a business with him; but he fought for Madero, and I was with him a good deal. He may be a greaser, but he's white."

"How did you effect my release?"

"I offered them money. That's what the rebels all want. They need money. They're a lot of poor, hungry devils."

"I gathered that you offered to pay ransom. How much?"

"Two thousand dollars Mex. I gave my word, and I'll have to take the money. I told them when and where I'd meet them."

"Certainly. I'm glad I've got the money." Madeline laughed. "What a strange thing to happen to me! I wonder what dad would say to that. Stewart, I'm afraid he'd say two thousand dollars is more than I'm worth. But tell me—that rebel chieftain did not demand money?"

"No. The money is for the men."

"What did you say to him. I saw you whisper in his ear."

Stewart dropped his head, averting her direct gaze.

"We were comrades before Juarez. One day I dragged him out of a ditch. I reminded him. Then I—I told him something I—I thought—"

"Stewart, I know, from the way he looked at me, that you spoke of me."

Her companion did not offer a reply to this, and Madeline did not press the point.

"I heard Don Carlos's name several times. That interests me. What have



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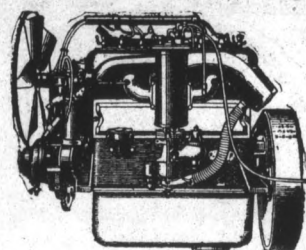
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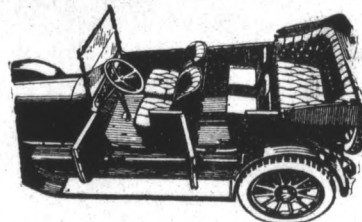
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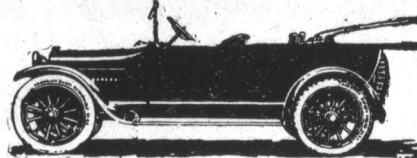
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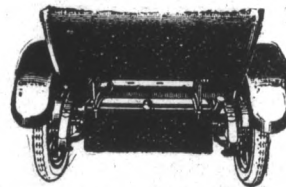
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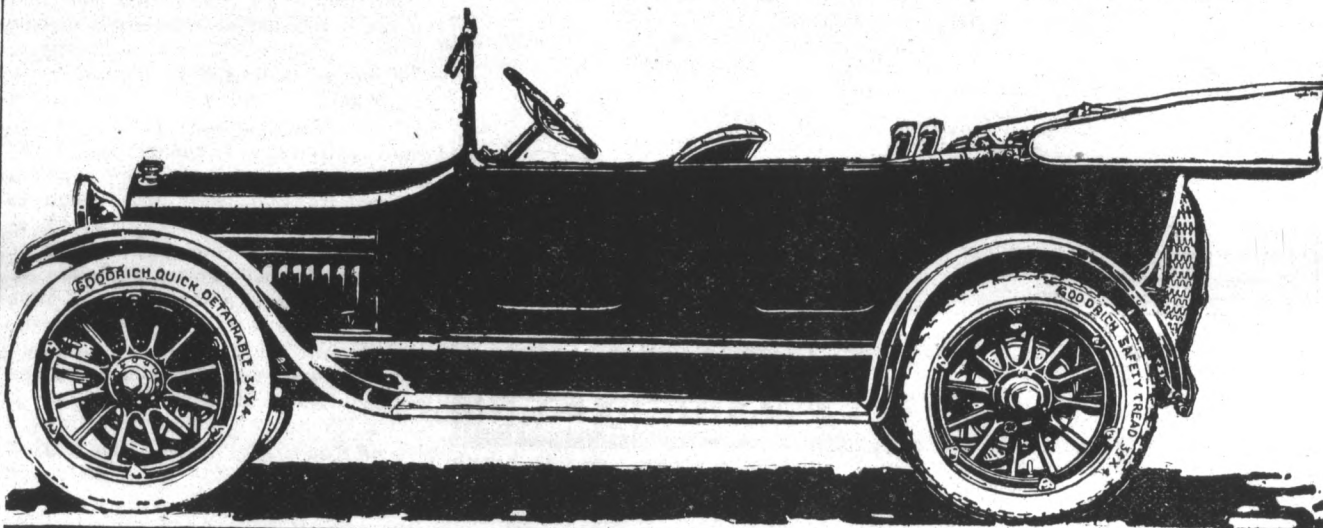


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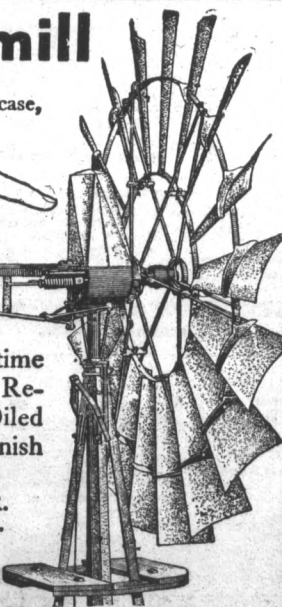
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Don Carlos and his vaqueros to do with this?"

"That greaser has all to do with it," replied Stewart grimly. "He burned his ranch and corrals to keep us from getting them; but he also did it to draw all the boys away from your home. They had a deep plot, all right. I left orders for someone to stay with you, but Al and Stillwell, who're both hot-headed, rode off this morning. Then the guerillas came down."

"Well, what was the idea—the plot, as you call it?"

"To get you," he said bluntly.

"Me! Stewart you do not mean that my capture—whatever you call it—was anything more than mere accident?"

"I reckon I do mean that; but Stillwell and your brother think the guerillas wanted money and arms, and just happened to make off with you because you ran under a horse's nose."

"You do not incline to that point of view?"

"I sure don't. Neither does Nels or Nick Steele; and we know Don Carlos and the greasers. Look how the vaqueros chased Flo for you!"

"What do you think, then?"

"I'd rather not say."

"But, Stewart, I would like to know. If it is about me, surely I ought to know," protested Madeline. "What reason have Nels and Nick to suspect Don Carlos of plotting to abduct me?"

"I reckon they've no reason that you'd take. Once I heard Nels say he'd seen the greaser look at you, and if he ever saw him do it again he'd shoot him."

"Why, Stewart, that is ridiculous. To shoot a man for looking at a woman! This is a civilized country."

"Well, maybe it would be ridiculous in a civilized country. I reckon there's some things about civilization I don't care for."

"What, for instance?"

"For one thing, I can't stand for the way men let other men treat women. It was bad in Kansas City and worse in St. Louis. I reckon I couldn't live in New York."

"But, Stewart, what strange talk from you, who, that night I came—"

She broke off, sorry that she had spoken. His shame was not pleasant to see. Suddenly he lifted his head, and she felt scorched by flaming eyes.

"Suppose I was drunk. Suppose I had met some ordinary girl. Suppose I had really made her marry me. Don't you think I would have stopped being a drunkard and have made good to her?"

"Stewart, I do not know what to think about you," replied Madeline.

There followed a short silence. Madeline saw the last bright rays of the setting sun slide up over a distant crag. Stewart rebridled the horse and looked at the saddle-girths.

"I reckon I'm awkward in talking. I got off the trail. About Don Carlos, I'll say right out not what Nels and Nick think, but what I know. Don Carlos hoped to make off with you for himself, the same as if you had been a poor peon slave-girl down in Sonora. Maybe he had a deeper plot than my rebel friend told me. Maybe he even went so far as to hope for American troops to chase him. The rebels are trying to stir up the United States. They'd welcome intervention. However that may be, the greaser meant vil to you, and has meant it ever since he saw you first. That's all."

For several moments Madeline made no reply. Then she said slowly:

"Stewart, you have done me and my family a service we can never hope to repay."

"I reckon I've done the service; only don't mention pay to me. But there's one thing I'd like you to know, and I find it hard to say. It's prompted, maybe, by what I know you think of me, and what I imagine your family and friends would think, if they knew. It's not prompted by pride or conceit. It's this—such a woman as you should never have come to this God-forsaken country, unless she meant to forget

herself. But as you did come, and as you were dragged away by those devils, I want you to know that all your wealth and position and influence—all that power behind you—would never have saved you from hell tonight. Only such a man as Nels or Nick Steele or I could have done that."

Madeline Hammond felt the great leveling force of the truth. Whatever the difference between her and Stewart, or whatever the imagined difference set up by false standards of class and culture, the truth was that here on this wild mountainside she was only a woman and he was simply a man.

"I reckon we'd better start now," he said, and drew the horse close to a large rock. "Come."

Madeline's will greatly exceeded her strength. For the first time she acknowledged to herself that she had been hurt. Still, she did not feel much pain except when she moved her shoulder. Once in the saddle, where Stewart lifted her, she drooped weakly. The way was rough; every step the horse took hurt her; and the slope of the ground threw her forward on the pommel. Presently, as the slope grew rockier, and her discomfort increased, she forgot everything except that she was suffering.

"Here is the trail," said Stewart at length.

Not far from that point Madeline swayed, and, but for Stewart's support would have fallen from the saddle. She heard him swear under his breath.

"Here, this won't do," he said. "Throw your leg over the pommel! The other one—there!"

Then, mounting, he slipped behind her and lifted and turned her, and then held her with his left arm so that she lay across the saddle and his knees, her head against his shoulder.

As the horse started into a rapid walk, Madeline let herself go and lay inert. For a little while she seemed to be half drunk with the gentle swaying of a hammock. Her mind became at once dreamy and active, as if it thoughtfully recorded the slow, soft impressions pouring in from all her senses.

A red glow faded in the west. She could see out over the foot-hills, where twilight was settling gray on the crests, dark in the hollows. Cedar and pinon trees lined the trail, and there were no more firs. At intervals huge drab-colored rocks loomed over her. The sky was clear and steely. A faint star twinkled. And lastly, close to her, she saw Stewart's face, once more dark and impassive, with the inscrutable eyes ever fixed on the trail.

He held her as easily as if she had been a child. The roughness of his flannel shirt rubbed her cheek, and beneath that she felt the dampness of the scarf he had used to bathe her arm, and, deeper still, the regular pound of his heart. Against her ear, filling it with strong, vibrant beat, his heart seemed a mighty engine deep within a great cavern.

Her head had never before rested on a man's breast, and she had no liking for it there; but she felt more than the physical contact. The position was mysterious and fascinating, and something natural in it made her think of life.

As the cool wind blew down from the heights, loosening her tumbled hair, she was compelled to see strands of it curl softly into Stewart's face, before his eyes, across his lips. She was unable to reach it with her free hand, and therefore could not refasten it. And when she shut her eyes she felt those loosened strands playing against his cheeks.

In the keener press of such sensations she caught the smell of dust and a faint, wild, sweet tang on the air. There was a low rustling sigh of wind in the brush along the trail. Suddenly the silence ripped apart to the sharp bark of a coyote, and then, from far away came a long wail. And Majesty's metal-rimmed hoof rang on a stone.



She opened her eyes and found that night had fallen. The sky was a dark, velvety blue blazing with white stars. The cool wind tugged at her hair, and through waving strands she saw Stewart's profile, bold and sharp against the sky.

Then, as her mind succumbed to her bodily fatigue, again her situation became unreal and wild. A heavy languor began to steal upon her. She wavered and drifted. With the last half-conscious sense of a muffled throb at her ear, a something intangibly sweet, deep-toned, and strange, like a distant calling bell, she fell asleep, with her head on Stewart's breast.

#### CHAPTER XIX.

Three days after her return to the ranch Madeline could not discover any physical discomfort as a reminder of her adventurous experience. This surprised her, but not nearly so much as the fact that after a few weeks she found she scarcely remembered the adventures at all. If it had not been for the quiet and persistent guardianship of her cowboys she might almost have forgotten Don Carlos and the raiders.

Madeline was assured of the splendid physical fitness to which this ranch life had developed her, and felt that she was assimilating something of the western disregard of danger. A hard ride, an accident, a day in the sun and dust, an adventure with outlaws—these might have once been matters of large import, but now for Madeline they were in order with all the rest of her changed life.

There was never a day that something interesting was not brought to her notice. Stillwell, who had ceaselessly reproached himself for riding away the morning Madeline was captured, grew more like an anxious parent than a faithful superintendent. He was never at ease regarding her unless he was near the ranch or had left Stewart there, or else Nels and Nick Steele. Naturally he trusted more to Stewart than to anyone else.

"Miss Majesty, it's sure amazin' strange about Gene," said the old cattleman as he tramped into Madeline's office.

"What's the matter now?" she inquired.

"Wal, Gene has rustled off up into the mountains again."

"Again? I did not know that he had gone. I gave him money for that band of guerillas, and perhaps he went to take it to them."

"No. He took that a day or so after he fetched you back home. Then in about a week he went a second time, an' he packed some stuff with him. Now he's sneaked off, an' Nels, who was down to the lower trail, saw him meet somebody that looked like Padre Marcos. I went down to the church, an' sure enough Padre Marcos is gone. What do you think of that, Miss Majesty?"

"Perhaps Stewart is getting religious," laughed Madeline. "You told me so once."

Stillwell puffed and wiped his red face.

"If you'd heerd him cuss Monty this mawnin' you'd never guess it was religion. Monty an' Nels hev been givin' Gene a lot of trouble lately. They're both sore an' in fightin' mood ever since Don Carlos hed you kidnaped. They're goin' to break loose soon, an' then we'll hev a couple of wild Texas steers ridin' the range; but it's Gene I'm most worried about."

"What do you fear?"

"I think he's found Danny Mains up in the mountains, an' has taken Padre Marcos up there to try to persuade Danny to come back."

"If that is true, it is nothing to worry about. I think that very creditable to Stewart."

"Wal, Miss Majesty, I sure wasn't discreditin' Gene none," replied Stillwell reproachfully. "What I'm worryin' over is no padre could persuade that blamed little cow-puncher."

(Continued on page 363).



## The HIGHER PRAISE

"It's a great car."

Over storm-roughened, winter roads, a car forces its way swiftly across the plains, reaches the Continental Divide, climbs steadily and surely up the ice-coated, eighteen-mile ascent, tops the brow, then moves rapidly downward to the town in the foothills.

A curious crowd gathers around. Dimly on the sleek-encrusted radiator they make out the trademark bearing the name: "Saxon."

"It's a great car," they say one to another.

\* \* \*

Turn time back a short space. The day of the famous hill climb has come. The race for premier honors begins. The crowd clustered at every point of vantage is a-buzz with excitement.

Finally the last car finishes the arduous climb up the winding mountain road.

There's a consultation of judges, a comparison of times, then announcement of first, second, third places. And the winner—bears on its radiator this name: "Saxon."

"It's a great car," says the crowd.

\* \* \*

Time and again this phrase—"It's a great car,"—leaps from the lips of thousands upon thousands of owners.

The man who has driven only costly cars says it with a distinct note of surprise in his voice.

The expert—from the depths of his experience with many cars—repeats it with an emphasis, which implies that he has voiced the ultimate in praise.

"It's a great car."

Thus the world pays its tribute to the "Saxon."

\* \* \*

Forget for a moment—if you will—the matter of price. Consider only the added charm a Saxon brings to your motoring experience.

Observe the matchless grace of the yacht-line body—the lustrous beauty of the finish. Observe the finished perfection of every detail—in equipment and appointment.

Then take your place at the wheel—throw out the clutch

—select a long, hard road, uphill and down, through sand and mud—and your ride of revelation begins.

First you sense only the utter comfort of the deep upholstery—the roomy restfulness of the wide seats.

Then there steals over you consciousness of the wonderful smoothness of this ride—of the fluid flexibility of the power-flow—of the lack of vibration as the speed increases—of the firmness with which the car grips the road.

Next—as the miles fling by—you note the eager ease with which the car responds to the merest pressure on the accelerator—the quickness with which it answers your guiding touch on the wheel.

Observe, too, the velvety smoothness of every movement of the mechanism—the well-nigh perfect silence, unbroken save by the low purr of the great motor.

Finally—at the end of this wonderful ride—note your physical sense of well being—how fresh and invigorated you feel.

And you'll find yourself saying—as do the thousands and thousands of owners—"It's a great car."

\* \* \*

"Sixes"

|             |       |
|-------------|-------|
| Touring Car | \$785 |
| Roadster    | 785   |

"Fours"

|              |       |
|--------------|-------|
| Roadster     | \$395 |
| Delivery Car | 395   |

Write for interesting booklet "Saxon Days." Address Dept. 19

Saxon Motor Car Company, Detroit



## Three Hundred Million Bushel Crop in 1915

Farmers pay for their land with one year's crop and prosperity was never so great.

Regarding Western Canada as a grain producer, a prominent business man says: "Canada's position today is sounder than ever. There is more wheat, more oats, more grain for feed, 20% more cattle than last year and more hogs. The war market in Europe needs our surplus. As for the wheat crop, it is marvelous and a monument of strength for business confidence to build upon, exceeding the most optimistic predictions."

Wheat averaged in 1915 over 25 bushels per acre  
Oats averaged in 1915 over 45 bushels per acre  
Barley averaged in 1915 over 40 bushels per acre

Prices are high, markets convenient, excellent land low in price either improved or otherwise, ranging from \$12 to \$30 per acre. Free homestead lands are plentiful and not far from railway lines and convenient to good schools and churches. The climate is healthful. There is no war tax on land, nor is there any conscription. For complete information as to best locations for settlement, reduced railroad rates and descriptive illustrated pamphlet, address

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178 Jefferson Ave., Detroit, Mich.

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THE GARDNER NURSERY COMPANY, Box 745, OSAGE, IOWA  
NOTE: We will send one dozen genuine Progressive Everbearing Strawberry Plants, enough for one bed, for 50 cents, postpaid.

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ALLEN BROTHERS, R. 9, Paw Paw Mich.

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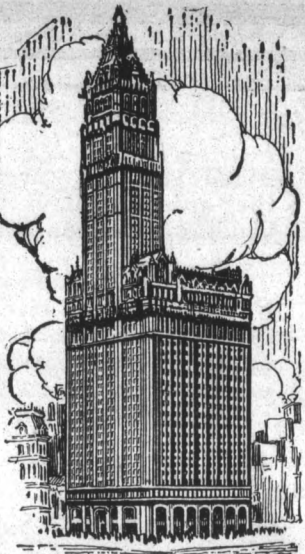
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## Build With Natco Hollow Tile

Best for the city and best for the farm. NATCO buildings are weather proof, decayproof, fireproof and frost-resisting. They are attractive, too—buildings you'll be proud of.

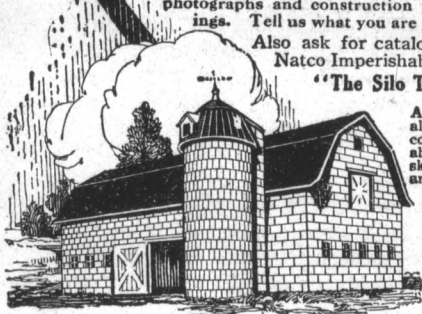
Send for our new book "Natco on the Farm." Fully illustrated from photographs and construction details of all types of farm buildings. Tell us what you are going to build.

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Natco Silo Wall. Note perforated shell providing firm anchorage for mortar joints



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# Land O' Nod Stories.

By HOWARD T. KNAPP

## Where the Ants Get Their Slaves

YOU had better take refuge with me in my apartments at the bottom of the city," said the Queen of the Ants as her army prepared to go to war for the purpose of capturing a new lot of slaves. "These slave-making raids are dangerous undertakings, and if the enemy should win the battle, they would invade my kingdom and maybe capture the city, and goodness knows what would happen to you in that case."

"Thank you, your Highness," replied Billy Be By Bo Bum, "but if you don't mind, I would rather join the army and go to war."

"Tut, tut," interrupted Tinker Tee-dee Tee. "You can't do that you know. You probably would be chewed all to pieces by the savage soldiers, and then what would I tell your mother. But if you really want to see the battle, and it is not a pleasant sight, I assure you, we can climb to the top of an oat tree and watch the fight in safety."

So Billy and Tinker said good-bye to the Queen and made their way to the plain above where the army was already forming. A steady stream of soldier ants was pouring from the city gate and swarming down the sides of the hill, until in a few minutes the cleared ground surrounding the city was black with soldiers, all eager for the fray. As the numbers increased the excitement grew. The soldiers were moving uneasily back and forth and around in a kind of maze, for all the world like a regular army going through a drill. A faint, crackling sound arose from the agitated mass, a martial music caused by the sharp contact of countless insects whose hard skin formed an armor as serviceable as that worn by the knights of old.

In and out of this seething mass the slaves, the small Negro ants, were moving back and forth, going about their daily round of work as though nothing unusual was happening, and Billy couldn't help wondering if these slaves knew the army was bent on destroying their native city and carrying their kinsmen into captivity, just as they had been captured in some former slave making raid.

At last the muster was complete, mysteriously but effectively the signal "Forward, March," was given and the army moved off through the oat forest. Although there was no general in command of the column or any subordinate officers to give orders, the ant army marched in regular, orderly rows. There was no guide or overseer and no commands were given, but for all that no army of men ever went forth to war in better array.

Billy and Tinker pushed their way through the crowd to the edge of the clearing. Then they plunged into the oat forest and ran until they were out of breath, when the merry little elf spread his wings and flew to the top of a tall oat tree, while Billy shinned up the smooth trunk, perching himself on the top of the stalk of grain.

"There's the city our friends are going to attack," said Tinker, pointing across the oat forest to a small clearing in the center of which stood an ant hill. The inhabitants of the city evidently were not expecting an attack, for the little Negro workers were going about their daily tasks, carrying supplies into the city, lugging out pellets of dirt, which showed they were enlarging the underground city, while others were sunning themselves on the hill and making their toilets.

"Here come our friends," shouted Tinker, waving the weeny copper kettle he wore for a hat, and the next minute the Queen's army dashed out of the forest and fell upon the poor

Negroes. At the first onset the villagers fled into their city and spread the alarm, closely pursued by their foes. Now in many ways ants are a great deal like men and women. When disaster befalls them, their first thought is for their children. So the brave little Negro ants, instead of trying to escape by fleeing through the oat forest, rushed down into the nursery and sought to save their babies. All who could grabbed up an egg, a cocoon or a baby ant in its jaws, seeking to carry their precious burden to a place of safety.

But the enemy fell upon them, crushing them in their powerful jaws and making off with the cocoons or eggs. In less than no time the Queen's soldiers had fought their way into the nursery, where they seized the remaining eggs, carrying them back to the home city. But strange to say, they did not bother the full grown Negro ants except those that were trying to escape with eggs or cocoons, and this puzzled Billy greatly.

"I thought you said the soldiers were going to capture a lot of slaves," said Billy.

"That's just what they are doing," replied the elf.

"But as soon as they get the egg or cocoon away from a Negro they stop attacking him and let him escape," protested Billy.

"Yes, they want only the eggs," replied Tinker. "These they take home, where they are welcomed by the slaves maybe the brothers and sisters of the baby captives. The slaves carry the plunder to the nursery where they tend and care for them as carefully as they do those of their masters. When the Negro babies hatch out, they will be trained to grow up into useful slaves."

And next week I'll tell you how the ants fought a bloody battle.

## THE SALE OF THE COLLIE.

BY M. B. R.

She stands in the doorway weeping—  
The goodwife of Farmer John;  
The bidding is almost over,  
And the sale is almost done;  
Seeder, and mower, and binder,  
Horses and cattle are sold,  
And now comes the turn of Bonnie,  
The guardian of the fold.

High, and loud, and insistent  
The voice of the auctioneer:  
"This way, gents! Do you see her?  
The dandiest critter here!  
Goes for the cows at sundown,  
Guards the sheep all day from harm,  
Who bids, who bids for the Collie!  
Prettiest thing on the farm!"

Cold blows the wind o'er the meadow;  
Her quick ear catches a sound,  
She breaks away from the salesman,  
Clearing the crowd at a bound;  
Alas! The cry of the lambkin  
That urges her on like fire;  
For she fails to scale the barbing  
And frantic dies on the wire.

Her brave little heart now heeds not  
The cry on the April storm;  
Jim are the eyes that behold her—  
The faithful Collie's still form.  
Up speaks a plain man among them—  
Sons of the soil ev'ry one—  
'Neighbors, so near was she human,  
Let's bury her there by John."

## REFUGE.

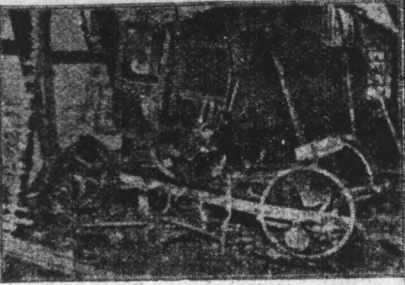
BY ARTHUR W. PEACH.

Put not your trust in circling walls  
If Care draw near your home;  
Think not, that stayed by gate of iron,  
Onward he may roam.

As easily he enters in  
A princely palace hall,  
As in a humble cottage home,  
Where wealth in gold is small.

Nay, might of iron and gleam of gold,  
He never halts before,  
But ever does he turn about,  
If Love be at the door!



**Garage at Montague Burned**

The garage, with six automobiles, burned at Montague, February 25th; four of the automobiles were not covered by insurance.

But few farmers of the state are carrying any insurance that protects them while away from home. Damage by fire, theft and liability is constantly increasing; in fact, about fifteen hundred cars were stolen last year and about two thousand persons injured in automobile accidents. The prudent farmer wishes to be on the safe side.

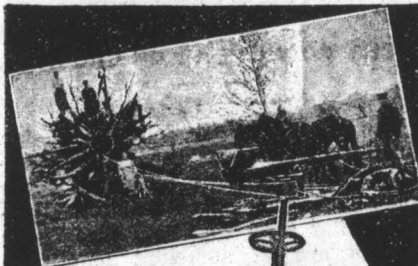
The rate in stock companies for fire, theft and liability on a medium size car is about \$50 per year. You can insure your car for fire, theft and liability in the Citizens' Mutual, of Howell, for \$1.00 policy fee and 25 cents per H. P. Policy protects your car anywhere in United States or Canada. The Company is having a rapid growth, having written about twenty-three hundred members since September last. Ex-Gov. Rich, Congressman Cramton, Speaker Charles W. Smith, of Lapeer, and Lawyers Persons, of Lansing, Cavanaugh, of Paw Paw, Burke, of Ann Arbor, are members.

The Company is running on the mutual plan; you get your insurance at cost, and a large membership will reduce the cost.

Every farmer should insure at once.

Write, giving name of car, to

**W. E. ROBB, Secy., Citizen's Mutual Automobile Ins. Co., Howell, Mich.**



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**Triple-Power**  
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Many farmers wonder what Dewey Hanes of Arcanum, Ohio, used for fertilizer in growing his big prize crop. In the "Country Boy" for January he says he used ten loads of stable manure and 600 pounds of bone meal, making the ground extra rich having in view a big crop and apparently not minding the expense. Sensible crop rotation and regular use of Bradley's Fertilizers have given Dewey and his father one of the most fertile farms in the state. They write they "have been using Bradley's Fertilizers with good results, and will continue with Bradley's again on my spring crops. Consider Bradley's the best I ever used."

The American Agricultural Chemical Company of Cleveland or Cincinnati will be glad to send their contest book to any farmer asking for it.

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**LIGHT OF WESTERN STARS.**

(Continued from page 361).

"Stillwell, your feelings are hurt. You care a good deal for Danny, and you can't believe he ever stole that money. And now you are worrying because you are afraid what you hope will not come true. Isn't that it?"

"I reckon you've hit it."

"Then keep on hoping and believing, but stop worrying. Surely a man that you've such faith in must somehow be worthy of it. Just wait. Let Stewart take his mysterious trips up into the mountains. Meanwhile, I have news for you that may give you reason for worry. My sister, with a party of friends, is coming out to visit me. They are society people, and one of them is an English lord."

"Wal, Miss Majesty, I reckon we'll all be glad to see them," said Stillwell. "Unless they pack you off back east."

"That isn't likely," replied Madeline thoughtfully. "I must go back some time, though. Well, let me read you a few extracts from my mail."

Madeline took up her sister's letter with a strange sensation. How easily the sight of a crested monogram and the scent of delicately perfumed paper could recall the life she had given up! Helen's letter was in turn gay and brilliant and lazy, just as she was herself, but Madeline detected more of curiosity in it than of real longing to see the sister and brother in the far west. Much of what Helen wrote was enthusiastic anticipation of the fun she expected to have with bashful cowboys.

Helen seldom wrote letters, and she never read anything, not even the popular novels of the day. She was as absolutely ignorant of the west as the Englishman who, she said, expected to hunt Buffalo and fight Indians. Moreover, there was a satiric note in the letter that Madeline did not wholly like. Manifestly Helen was reveling in the prospect of new sensations.

When she finished reading aloud a few paragraphs, the old cattleman grunted and his face grew redder.

"Did your sister write that?" he asked.

"Yes."

"Wal, I—I beg pawdin', Miss Majesty, but it doesn't seem like you. Does she think we're a lot of wild men from Borneo?"

"Evidently she does. I rather think she is in for a surprise. Now, Stillwell, you are clever, and you can see the situation. I want my guests to enjoy their stay here, but I do not want it to be at the expense of the feelings of all of us, or even any one. Helen will bring a lively crowd. They'll crave excitement. Let us see that they are not disappointed. You take the boys into your confidence. I don't care what they do, what measures they take to protect themselves, what tricks they contrive, so long as they do not overstep the limit of kindness and courtesy. My guests expect to have fun. Let us meet them with fun. Now, what do you say?"

Stillwell rose, his great bulk towering, his huge face beaming.

"Wal, I say it's the most amazin' fine idee I ever heerd in my life."

"Very well," replied Madeline; "we will consider it settled. My guests will arrive on the ninth of May. Meanwhile let us get Her Majesty's Rancho in shape for the invasion."

On the afternoon of the ninth of May, perhaps half an hour after Madeline had received a telephone message from Link Stevens announcing the arrival of her guests at El Cajon, Florence called her out on the porch. Stillwell was there with his face wrinkled by his wonderful smile and his eagle eyes riveted upon the distant valley. Far away, perhaps twenty miles, a thin streak of white dust rose from the valley floor and slanted skyward.

(Continued next week).

# Red Side Wall and Black Tread The Trade Mark of Firestone TIRES

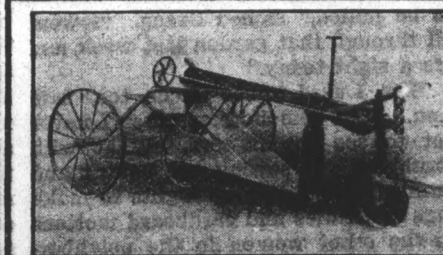
This exclusive color combination is the result of long experiment to develop a tread of extra thickness without extra weight. This reduces strain on the body of the tire and means longest life to the fabric.

Increased toughness is another advantage which results in further added mileage.

In addition to these practical values, Firestone equipment gives elegant appearance and harmonizes with any car.

**FREE OFFER**—For your dealer's name and make of your tires we will send you, free, a fine rubberized Tube Bag. Also Free Book, "Care and Repair of Tires," No. 25.

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Akron, O.—Branches and Dealers Everywhere



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## Woman and Her Needs At Home and Elsewhere



### The Domestic Crucible—23

#### Grace Decides Possession Doesn't Spell Happiness

OH, it's Aunt Ann! Come right in." Grace Ludlow looked up from the Sunday School paper she was trying to read, as a figure darkened the sitting-room door.

"John told me I'd find you in here," explained Aunt Ann, "so I walked right through the house. Said he preferred the hammock with plenty of air. Men get so used to the open through the week they just can't be quiet inside four walls. I should think you'd like to be out yourself," she continued. "You're shut up here so most of the time. Why aren't you in the hammock yourself?"

"Oh, I like to be where it's quiet and out of the sun," Grace said primly, quite ignoring the fact that the sheltered side porch was so quiet and shady that just to drop down there would make you forget there was such a thing as noise and light and confusion elsewhere in the world. "Besides I want to admire my new drapes after all they've cost me. Aren't they beautiful?"

Ann Smedley took note of the flush on Grace's cheeks and the stubborn lines about her mouth. But she was outwardly oblivious to anything unusual in the fact that Grace occupied the

had a minute for the really easy pleasant things, until I came near losing the best thing of all in my over-anxiety to outdo my neighbors.

"I can laugh at it now," she mused. "But it came near being a tragedy then. This country was new when I came in here and we hadn't much of anything but necessities. Bare floors were the rule until one woman threw the neighborhood into a turmoil by putting a rag carpet on her sitting-room floor. They were sitting-rooms then instead of living-rooms. That was enough for the rest of us. We were all determined to have a carpet if we cut up our clothes and went half-naked to get the rags to make it. And just to show my superiority to the rest I wanted a bedroom carpet.

"It would have been all right if I had been satisfied with the sitting-room, but when it came to carpeting the bedroom my husband rebelled. He had slept in a room with a bare floor all his life and he said the carpet would get full of dust which our walking about would free and it would fill our lungs. I scoffed at the idea, and declared that I could sweep out every particle and he'd never know the difference. He clung to his side of the

light and air," Grace agreed. A choky feeling kept her from saying more.

"But I must be going," said Ann. "And you'd better go out in the fresh air awhile. Your cheeks look flushed and this fresh breeze will cool them."

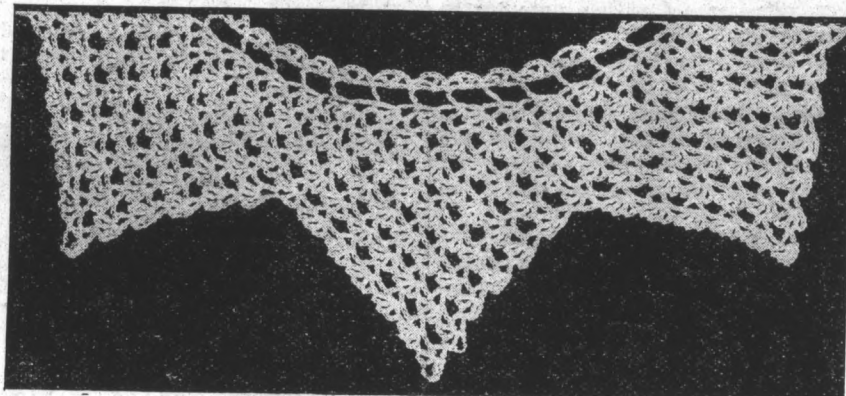
"I'll go out in a minute," said Grace, rising suddenly. "I've got something to do first."

Left alone she brought in a kitchen chair, mounted it swiftly, took down her beloved drapes and folded them in a neat pile. Those in the dining-room followed, and topping all came the precious blue silk from her own room, though these came down more slowly and with tears. Then, gathering them up in her arms she marched to the porch and deposited them in the hammock with John.

"I can't afford to make a bonfire of them, as Aunt Ann did the rag carpet," she laughed, with an odd little break. "But I'll stack them in my cedar chest till next winter when the windows are shut anyway, or I'll drape them over a pole in the attic and go up there and gloat over them, if that'll suit you better. They cost a lot of money, but they're not worth half what they've cost me this week." She dropped her head on John's shoulder to hide the tear she felt trickling down her nose.

"You're a brick, and I'm a pig-headed chump," said John huskily, gathering her into his arms. "Hang them up all over the windows and walls, too, if you like. I guess you're the boss inside, aren't you?"

DEBORAH.



A Practical Design for a Crochet Yoke.

living-room alone on a stifling July day, while John, separated from her by the entire length of the house, moped in the hammock.

"They are beautiful," agreed Ann. "The maroon brings out the color in the paper wonderfully. Isn't that purple clematis on the porch a beauty, too?" she added. "I just wanted to sit down by it and admire it all the rest of the day."

"It is pretty," agreed Grace, "but I don't get much time to enjoy it. I've been so busy all week getting these drapes up to suit me and taking care of berries and the garden that I've not had much time to look at flowers."

"Summer is a busy time for farmers' wives," said Ann. "I remember when I was your age I never had time to breathe. At least I thought so then, though looking back I am sure I might have found the time if I had planned right. But I always saw so much indoors which I thought had to be done I couldn't see the things that had been put outdoors for my especial benefit."

"I can see plenty of weeds waiting to be pulled," sighed Grace. "I went all through that garden last week, and it's a sight today."

"Yes, I used to see weeds, too," said Ann. "But somehow or other I never got to see the flowers. What with scrubbing and sewing and baking and canning and sitting up nights to make rugs and tidies and cardboard mottoes so the other women in the neighborhood couldn't get ahead of me, I never

argument, and I to mine and the carpet went down. Thomas went to the barn to sleep, and still I wouldn't give in. One night a tramp came along and crawled in on the hay after Thomas was asleep. He was half drunk and smoking, and we never did get him out, but Thomas awoke just in time. He came running through the door just as the roof fell in. I made a bonfire of the bedroom carpet next morning, and after that I began dimly to see that life does not consist so much in what we have as in what we enjoy. I never enjoyed that carpet a minute. I couldn't with Thomas angry, but I just wanted to have my own way."

"I suppose he was half right about the dust," said Grace. "They have bare floors in tuberculosis sanatoriums."

"Yes, and bare windows," mused Aunt Ann. "John never talked to you about his friend Andy McIntosh, who died of tuberculosis when you were in school, did he? I thought not," she ruminated, "because John never does talk about things he feels most deeply. He and Andy were great cronies, and he was all broke up when Andy died. If you had been home at the time you would have seen it, but of course John always buries his troubles, so you'd never guess how badly he felt. He got a horror of tuberculosis then, and had those extra windows cut in here. Told me he was going to keep tuberculosis out of his family if sun and air would do it."

"Yes, John has a hobby for lots of

#### NIGHT GOWN YOKE OF CROCHET.

BY MAE Y. MAHAFFY.

The simple, easily followed design illustrated is not only especially attractive as a night gown or corset cover yoke, but is unusually durable, the pattern being such that few threads or strands are of sufficient length to catch or break readily.

Make a ch (chain), of 30 sts (stitches). Turn and dc (double crochet), 1 into the 6th st of ch. Ch 2, dc 1 into same st. Ch 2, dc 1 into 4th st in advance. Ch 2, dc 1 into same st. Ch 2, dc 1 into 4th st still in advance. Ch 2, dc 1 into same st. Ch 2, dc 1 into 4th st ahead. Ch 2, dc 1 into same st. Ch 2, dc 1 into 4th st beyond. Ch 2, dc 1 into same st. Ch 2, dc 1 into 4th st still farther along the ch. Ch 2, dc 1 into same st.

Next Row.—Ch 4 for turn. Dc 1 into ch of 2. Ch 1, dc 1 into same ch. Ch 1, dc 1 into same ch. Skip first ch of 2 and dc 1 into 2nd ch of 2 in advance. Ch 1, dc 1 in same st. Ch 1, dc 1 into same. Proceed thus in alternate chs of 2 across yoke, thus making six groups or fans in this row.

Next. Ch 5 to turn, dc 1 into 1st ch of 1 or open space in 1st fan. Ch 2, dc 1 into same space. Ch 2, dc 1 into last open space of fan. Ch 2, dc 1 into same space. Ch 2, dc 1 into central open space of 2nd fan. Ch 2, dc 1 into same space. Ch 2, dc 1 into central open space of next fan. Ch 2, dc 1 into same space, etc., across the lace.

Turn with ch of 4 and come back the entire width with fans in alternate chs of 2, as in former row of fans. It will be noted that an extra group is added each time by placing two groups in the end fan, instead of only one in the center, as elsewhere. This gives the pointed effect to the yoke. When the lace has widened to eleven fans start a new point by turning at the fifth fan, then widening gradually as before.

Eleven points or scallops make a good sized yoke although this is determined largely by the size of thread used. After the yoke proper is finish-



ed, ch 8 from the last fan, and to (triple crochet), 1 into outer st of next fan. Ch 5, to 1 into outer st of third fan along yoke top, and so on across yoke. Turn, sc (single crochet), 1 in last tc. Ch 2, dc 1 in central ch of 5. Ch 2, dc 1 in same st. Ch 2, sc 1 in next tc. Proceed to finish top of yoke in this fashion, the triple crochet spaces giving opportunity to run in ribbon or tape.

A harmonious finish for sleeves or armholes is secured by making a ch of the required length, and then making the triple crochet space for ribbon, and the small scallops, the same as for the yoke top.

### THE SCHOOL LUNCHEON.

BY GRACIA SHULL.

Five days out of the week mothers of little folk have to wrestle with the school lunch box problem. This need not be such a problem, however, if some sort of system is planned and adhered to. Always make it a point to have plenty of string, waxed paper, paper napkins, etc., in a kitchen drawer convenient to one's hand. Make out a list of menus and tack it to the inside of cupboard or pantry door. Give a varied assortment of foods that will be attractive to eye and palate and will, at the same time, build up brain and brawn.

The simpler foods are best but attention must be paid to individual need. Rich cakes, doughnuts, and pastries should be eliminated from the lunch box of every school child. Good, home-made bread, white, brown and whole wheat that is one day old, thinly sliced, can be made into appetizing sandwiches with cold beans, minced boiled ham, beef or chicken, chopped nuts and olives, or cold boiled eggs chopped and mixed with a plain mayonnaise. These will provide the "heart" part of the meal.

Soft gingerbread or cookies, home-made candies, a handful of dates, figs or raisins will provide the sweets needed for good health. A cup custard, a pot of cottage cheese, an individual pot of baked beans, an apple or orange, bread sticks, tid-bits and certain kinds of manufactured cooky and cracker specialties may be placed in the school lunch box of every growing child. It is the heavy, fat, rich, over-heating, over-stimulating foods that must be avoided if the child is to do his best in the school room. Provide plenty of paper drinking cups. A bottle of milk or a tiny one of soup to be warmed up for luncheon will prove acceptable. Make the lunch attractive by wrapping each article of food separately. Provide a collapsible lunch box that may be opened out, washed, sunned and aired thoroughly. Lay a folded paper towel on top of the luncheon just inside the cover that the little one will be reminded that clean fingers are in order before the luncheon is to be consumed.

### CHILDREN'S DISEASES.

#### Diphtheria.

Diphtheria is not so common as it used to be, we frequently hear. Certainly we do not hear of so many suffering from the disease as we once did, but this is perhaps due to the fact that many throat diseases once called diphtheria are now given some other name. It is an acute, communicable disease characterized by the formation of a false membrane on the tonsils, pharynx, larynx or nose. In severe cases it is accompanied by heart trouble, pneumonia and sometimes inflammation of the kidneys.

Unlike the so-called children's diseases one attack of diphtheria does not make one immune from further attacks. Cases have been known where a patient had two attacks of diphtheria not more than two months apart. Children under ten are most liable to the disease, especially between the second and fifth years.

Diphtheria always has its origin in a previous case, that is it does not

arise where there have been no previous cases. The bacilli may be taken into the mouth in many ways, sometimes by kissing. It is often spread by infected milk, but seldom by water. It may be given by the patient, the doctor or the nurse, but seldom by any other third party, as it seems to come only from those who are in direct contact with the patient. Infection may come from the clothing, bed, rugs in the sick room, or from the toys and books handled by the patient. Occasionally pet animals spread the disease. Persons suffering from chronic catarrh and adenoids are more liable to diphtheria than those with a healthy throat.

In mild cases of diphtheria there is sometimes no membrane formed, although cultures show the bacilli. In mild cases there is soreness of the throat, accompanied by a temperature of 101 to 104 degrees. If a membrane forms it starts as a gray film followed by a gray or white deposit which starts in small spots or patches. These sometimes remain separate and sometimes run together. The deposit is hard to remove. The temperature stays around 100 to 102 while the membrane lasts, which may be from three days to a week.

Severe cases sometimes start gradually with a temperature running to around 100 for four or five days, accompanied by sore throat. Again they start suddenly with vomiting, headache, chills and a temperature as high as 104. Sudden attacks are more common in children than older folks.

In the severe cases there is a great deal of discharge from the mouth and nose and the membrane changes from a white or gray to a darker color, often olive green. It spreads from the throat to the mouth, sometimes even to the lips. The breathing is heavy, the tongue dry and the lips frequently bleed. In favorable cases the membrane begins to come away at the end of a week or ten days, though it may last for two or three weeks.

DEBORAH.

### SHORT CUTS TO HOUSEKEEPING.

An exceedingly simple thing that it seems very many housewives do not know, is that no kettle, skillet or pan ever need be scraped if, instead, it be put over the fire for a moment with a little water in it. This heated water quickly loosens whatever foodstuff adheres to the bottom or sides unless severely burned, and the vessel is cleaned with trouble or injury. Besides, there is very great danger in the scraping of enameled ware, as once broken, small particles of the enamel are constantly chipping off, and this, the doctors declare, is one great cause of the prevalence of appendicitis these days, as the sharp bits are mixed with our foods.—L. McC.

At this time of year when eggs are scarce, just try settling coffee with flour, and I believe you will always keep it up. To two tablespoonsfuls of coffee add one teaspoon of flour, wet thoroughly with cold water before adding hot water.—E. M. K.

#### POOR DAD.

Grandma's a Prohibitionist, A Socialist is Nan, Mother's Progressive through and through, Sue's a Republican. So the Antis' talk makes father mad, 'Twould be rather hard on poor, old Dad, To express these views with one ballot small, Since he's Democrat and hates them all. —Judge.

#### Ginger Snaps.

Household Editor:—I would like to have a good recipe for ginger snaps printed in the Michigan Farmer.—B. K., Dorr.

One cup of molasses, boiled, one and a half cups of sugar, one cup shortening, one teaspoon each of ginger, cinnamon and cloves, two teaspoons of soda dissolved in a cup of boiling coffee. Flour to make a soft dough.



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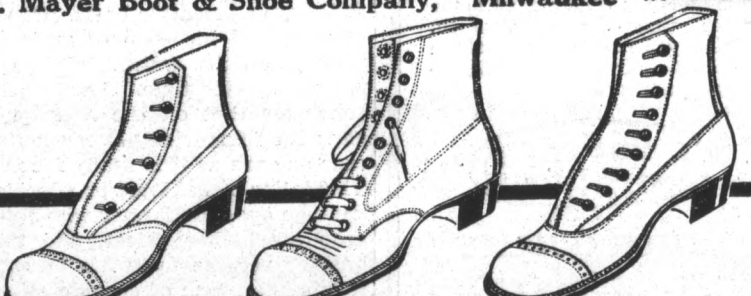
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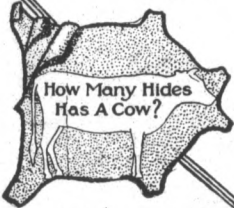
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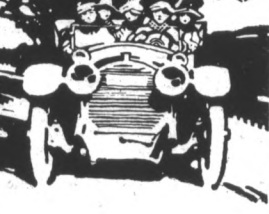
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# Farm Commerce.

## Shrinkage a Factor In Marketing

By FLOYD W. ROBISON

EVERY year the farmer is puzzled to determine for himself the proper time for the marketing of his crop, particularly his grain crops. There is a considerable chance element in this procedure which has seemingly defied all attempts to reduce it to a scientific basis. One farmer will hold his crop of grain—corn, wheat, or oats—waiting always for a more favorable time. Another farmer concludes that on the average he is as well off financially by marketing his crop as soon as it is ready for market. This latter has at least one decided advantage over the farmer who holds his crop for higher prices, and that is, quicker returns upon his investment, if this is an item of consideration, and it always is an item of consideration, of course. It would seem, other things being equal, an early market should be sought.

The question to be solved, however, really is what sacrifice in the way of price should a farmer concede in order to dispose of his crops promptly. It is a well known fact in the marketing of all commodities that the time of the greatest supply is not usually the time of the highest price. This may be accepted as a rule which applies in all normal times. Consequently once the crop of wheat is harvested, in securing a market at that particular time the farmer would not expect to receive the maximum price for his product. This condition would hold only provided a great majority of farmers did market their crops immediately upon harvesting.

There are other points involved, however, which in a sense tend to offset the depressed market at the period of greatest supply. Among these the one of greatest significance is the question of shrinkage. As the grain crop is held it undergoes sweating, curing, and drying, all of which conditions taken together cause shrinkage. In other words, one bushel of wheat at the time of harvesting will not weigh as much as a bushel of the same product if held for a considerable period of time. Undoubtedly there is a point in the storage of the grain when an equilibrium is established, but it will be necessarily some considerable time after the threshing of the grain.

Conditions which Cannot be Standardized.

Involved in this consideration of shrinkage and the time of marketing there comes into consideration also the possible influence of other unknown conditions upon the question of the market price. For instance, during the past year one of these conditions has been the European war. This undoubtedly will disturb the averages in a very marked degree. Generally speaking, averages while valuable, do not mean a very great deal after all. Statistics are cold, hard bases to figure on. We once heard a very celebrated public speaker remark as follows: "There are white lies and black lies, and statistics." And while, of course, we must base for mathematical accuracy, our conclusions of any scientific experiment largely upon the basis of statistics, nevertheless statistics are not a reliable guide for individual transactions. Statistics are averages and averages mean a correlation of failures on the one hand and of successes on the other. We may successfully and rightfully use averages as a basis of community action. We may use averages as a basis for united farmers' activity, but averages will scarcely serve as a guide for an individual farmer's activity. So we find regarding the

prices of the different grains during the last fifty years. During the time of the Civil War, as at present, the prices for grain were very much inflated.

Average Prices for wheat since 1879.

During the last few years the general average for certain of the grains has been high. From 1909 to 1913, the average price on the Chicago market, according to the Illinois Station, for wheat has been \$1.051 per bushel; from 1879 to 1883, the price for wheat was \$1.067 per bushel; from 1884 to 1888, the price was 81.6 cents per bushel; from 1889 to 1893, the average price was 83.4 cents; from 1894 to 1898, a period of great depression in this country, the average price of wheat, on the Chicago market, was 69.5 cents; from 1899 to 1903, the average price was 73.4 cents per bushel; from 1904 to 1908, it rose to 93.3 cents and was steadily rising when the European war broke out, giving its tremendous fluctuations with the continued high prices for the product. These prices, judged from the standpoint of averages, indicate from 1904 a gradual increase in the price of wheat. Whether this is a permanent condition it is difficult to say, but it is logical to assume that the steady increase of population not only of the United States but of the world, is responsible in a measure for this gradual rise in the price of grain.

Average Price for Grain by Months.

Leaving this out of consideration, which is balanced very nicely, no matter what period of the year the crop is marketed, the thing we are particularly interested in here is the effect of the curing and drying of the grain upon the price for which it may be sold at various periods of the year. The Illinois Station investigating the prices on the Chicago market for the ten-year period of 1904-1913, give the average price for the three grains, corn, wheat and oats as follows:

Wheat, January, \$1.001; February, \$1.009; March, \$1.007; April, \$1.015; May, \$1.063; June, \$1.034; July, 95.2c; August, 92.3c; September, 95.6c; October, 98.4c; November, 97.4c; December 98.8c.

Lowest Prices at Time of Harvesting.

It is noticeable in this tabulation that the time of greatest depression in the wheat market during the year occurs in the months of July and August, the time when the crop is harvested. It should be borne in mind that the crop is newest at this time and while the price is comparatively low, it may be assumed that the shrinkage is also very great at this time. For instance, if a farmer had 100 bushels of wheat by weight in August, at the average price of 92.3 cents per bushel, he would receive for this crop \$92.30. If he would hold this crop until the following January, instead of having 100 bushels at that time it would be safe to assume that he would then have for sale more probably about 92 bushels of wheat. In other words, there would be a shrinkage probably in the neighborhood of five to eight per cent, and while he would get a higher price, in fact, about eight cents a bushel more in January than he would receive in July or August, his total receipts for the wheat would in all probability not be much more than \$92. We think there would be no doubt, generally, about his receiving as high or higher a price in January as in July or August but except some very unusual conditions arose he would scarcely expect to receive more or appreciably more than would be made up for by the shrinkage of the grain.

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2. **Patented Automatic Stop, Uniform Clean-Out Push-Board** worth \$10 on any spreader. Costs nothing extra on the Galloway.
3. **New Steel Everlasting Beater with V-Rake** which gives wide spreading and tears the manure into shreds for uniform available plant-food. This exclusive feature alone worth \$15. Costs nothing extra on the Galloway.

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In the case of corn the average price was as follows: January, 52 cents; February 52.5 cents; March 54.4 cents; April, 57.2 cents; May, 60.3 cents; June, 60.3 cents; July, 62.1 cents; August 64.2 cents; September, 63.6 cents; October, 60.5 cents; November, 58.3 cents; December, 55.7 cents.

Here we find regarding corn the same conditions prevailing. Corn matures later than wheat and consequently we find the lowest price occurring about the time of the year when corn is being stored and shortly after the period of harvesting.

With oats we find the figures to be as follows: January, 39.5 cents; February, 40.9 cents; March, 40.9 cents; April, 41.7 cents; May, 43.4 cents; June, 43.4 cents; July, 42.8; August, 37.8 cents; September, 38.6 cents; October, 38.0 cents; November, 37.6 cents; December 38.6 cents.

In that ten-year period the price of oats on the average was less during the month of August, as will be seen, at the period in which the product is harvested.

#### Wheat and Oats go to Market More Promptly.

There is a much greater tendency to market wheat and oats promptly than there is corn, consequently we find the market responding to the influx of wheat and oats after marketing much more quickly than it does to corn. The great influx of corn shortly after the period of marketing, or during certain specified seasons of the year has its effect in disturbing the averages of prices obtained so that it is difficult to show the effect of shrinkage along which is the purpose of this paper.

The Illinois Station found that wheat and oats were of sufficient stability that there was no great advantage either in the holding for higher prices or to mitigate against holding for higher prices. The farmer is pretty certain to secure as favorable a price in mid-winter and from then on as he is at the time of harvesting his crop of wheat and oats, taking into consideration also the question of shrinkage. With this, of course, he will give consideration to his facilities for marketing. Ordinarily we would expect it would be much easier for the farmer to market during the winter than during the period of year when he is so busy with his other farm work, and if he has satisfactory storage facilities he probably will not lose on the average in holding his wheat and oats for a more convenient marketing period for himself. This involves, of course, the providing of satisfactory storage facilities on the farm to protect the grain from the weather, climatic conditions and from the ravages of mice, rats, etc.

#### Shrinkage of Corn.

Corn seems to be in an entirely different class. Shrinkage is very high in corn and one must be prepared to offset shrinkage by a substantial increase at certain periods of the year in the price of corn if he is to make anything by holding it. The Illinois Station has given a tabulation showing what prices the farmer should expect for his corn to compensate for shrinkage alone. We will select from this table at intervals of five, based on the November price of from 40 to 80 cents per bushel.

Assuming the November price for corn to be 40 cents per bushel, to compensate for shrinkage the farmer should get in December, 40.5 cents; in January, 41.3 cents; February, 41.7 cents; March, 42.3 cents; April, 43.0 cents; May, 44 cents; June, 46.0 cents; July, 47.2 cents; August, 47.7 cents; September, 48.0 cents; October, 47.8 cents.

#### Is the Gain in Price Real or Fanciful?

It will be seen therefore that if one has the option of selling his corn in November at 40 cents per bushel, or in September the following year at 48 cents per bushel, he would be gaining absolutely nothing. The shrinkage alone would offset the gain in price. If the November price were 45.0 cents,

the December price should be 45.6 cents; the January price, 46.5 cents; February, 47.0 cents; March, 47.6 cents; April, 48.4 cents; May, 50.0 cents; June, 51.8 cents; July, 53.1 cents; August, 53.7 cents; September, 54.0 cents; October, 53.8 cents.

#### Comparative Prices for Different Months.

So that if one had the option of selling corn at 45 cents in November and holding it until the following September and were offered 55 cents per bushel then, he would get no more money for the transaction than if he had sold it in November at 45 cents. With the November price of 50 cents one would need to get 60 cents per bushel for that same corn in the following September to allow for the shrinkage; if he received 55 cents in November it would be necessary to receive 66 cents per bushel the following September; to allow for shrinkage; if he received 60 cents in November it would be necessary to receive 67.2 cents the following September; if he received 65 cents in November, it would be necessary to receive 77.9 cents per bushel the following September; if he received 70 cents in November, it would be necessary to receive 83.9 cents per bushel the following September; if he received 75 cents in November, it would be necessary to receive 89.5 cents the following September; if he received 80 cents in November, it would be necessary for him to receive 89.5 cents the following September to offset the shrinkage alone. In other words, if he had 100 bushels of corn in November for which he would receive \$40, or 40 cents per bushel, the following September he would have only 33.3 bushels of corn to sell. In other words, the shrinkage would amount to 16.7 per cent on corn held from November to the following September.

The Illinois Station concludes as follows:

"Considering the ten-year period it would seem to be profitable as far as the shrinkage alone is concerned, to hold small grain, that is, wheat and oats, until the time of highest prices, but there are other factors such as convenience in marketing, delivery, condition of roads, cost of labor and storage, losses by rats and mice and by insects, so local in character that only the individual farmer can give them proper consideration."

The question of corn, however, is a different consideration. It is doubtful on the average, if the price of corn some months after storage is sufficiently high to compensate entirely for the loss of shrinkage.

#### Crop and Market Notes.

##### Michigan.

Saginaw Co., Feb. 21.—There is some snow on the ground but grain has had little protection this winter. There will be enough feed for stock on hand. Corn apparently has much less feeding value than in other years. Beans \$3.40; wheat \$1.21; corn 64c; oats 46c; hay, \$12@14; milk \$1.65; butter 35c; eggs 30c; chickens 14c; potatoes \$1@1.10.

Gratiot Co., Feb. 29.—We have been enjoying mild spring-like weather for several days. Snow lays in patches on the fields, the roads are bare and wheeling is good. Practically every farmer here is feeding as conservatively as possible to eke out the scant supply. Only a few head of steers are feeding in this locality. No one has tapped sugar bushes yet. Hens have loosened up a little, but egg production is still small. Eggs 18c; butter 18@20c; beans \$3.30; oats 43c; hogs \$6.50@7.75; milk \$1.65; cream 28c.

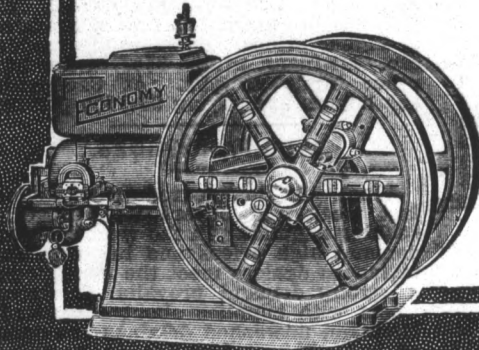
Monroe Co., Feb. 26.—The changeable weather of the last 30 days with scarcely any snow all winter is putting wheat and rye in bad shape. Roughage lasting well but will be all fed by spring. Some farmers now buying corn. Not many beef cattle being fed. A few bunches of hogs for spring market. Hens not laying well with price of eggs down to 20c; cream 35c; milk \$1.60@1.80; beans \$4 per bushel; potatoes \$1.25; wheat \$1.18; oats 42c; corn 80@90c per cwt; hay \$12@15; beef cattle \$4@7; hogs \$6.50@8. A large number of public sales being held with stock and feed bringing good prices.

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## Sears, Roebuck and Co., Chicago

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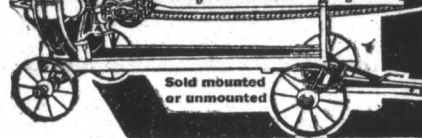
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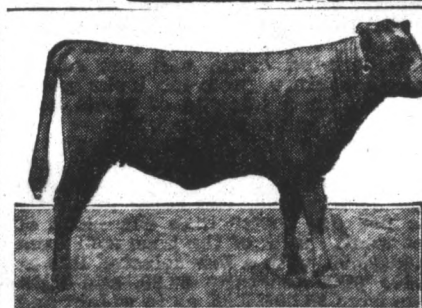
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A useful preventive of scouring. Calves raised "The Blatchford's Way" are heavier, bigger-boned and healthier. Known as the complete milk substitute since the year 1875. Sold by your dealer or direct from the manufacturer.

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

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

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With rig or auto to call on regular trade with the big Shores Line of Family Medicines. Spices, Extracts, Toilet Articles, Veterinary Remedies, Oils, Etc. Our new, successful plan for increasing business assures you of over \$150.00 per month profits. Ask about it. No experience necessary. Don't worry about capital, but write quick.

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**10 days' trial. Money-back guarantee.**

Cuts ditch to 4 ft. Grades roads. All Steel—Practical—Adjustable—Reversible. Cleans ditches, cuts and works out dirt at same time. Does work of big machines. Soon pays for itself. Write for free booklet and introductory proposition.

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and accomplish more work in removing stumps, rocks, also planting trees, digging ditches, etc., than twenty men. It's effective, safe and easily used; guaranteed Standard Brand; shipped DIRECT from Mill in this state at lowest prices. No salesmen. Established over 20 years. Write for full particulars.

BRUNS POWDER CO. TERRE HAUTE, INDIANA.



# Markets.

## GRAINS AND SEEDS.

March 7, 1916.

**Wheat.**—This grain recovered some of the recent loss in prices. Primary receipts have been heavy, especially in the southwest, and the visible supply is about 15,000,000 bushels greater than it was a year ago. Both England and continental Europe are in need of liberal quantities of the grain, and with greater freedom in shipping, our surplus could be readily and rapidly absorbed. Reports on the growing plants point to a much impaired crop, which with limited acreage offers support to market through summer. One year ago No. 2 red wheat was quoted at \$1.49½ per bushel. Last week's local quotations were:

|           | No. 2 | No. 1 | May   |
|-----------|-------|-------|-------|
| Wednesday | 1.13  | 1.08  | 1.15  |
| Thursday  | 1.12½ | 1.07½ | 1.14½ |
| Friday    | 1.14½ | 1.09½ | 1.16½ |
| Saturday  | 1.14½ | 1.09½ | 1.16½ |
| Monday    | 1.16  | 1.11  | 1.18½ |
| Tuesday   | 1.14½ | 1.09½ | 1.17  |

Chicago.—May wheat \$1.13½; July \$1.10½.

**Corn.**—Values for corn are about steady with a week ago. Weather conditions hampered the bears at the opening this week. The visible supply shows an increase of 2,670,000 bushels. One year ago No. 3 corn was quoted at 73 cents per bushel. Detroit's quotations for last week were:

|           | No. 3 | No. 3  |
|-----------|-------|--------|
|           | Mixed | Yellow |
| Wednesday | 70    | 72     |
| Thursday  | 70    | 72     |
| Friday    | 70    | 72     |
| Saturday  | 70    | 72     |
| Monday    | 70    | 72     |
| Tuesday   | 71    | 73     |

Chicago.—May corn 75½c; July 75½c.

**Oats.**—Prices have advanced over the low figures of last week. All offerings were absorbed Monday at fractionally higher quotations. The domestic consumption is liberal. The visible supply shows a slight increase. Standard oats a year ago were quoted at 58c per bushel. Last week's local quotations were:

|           | Standard | No. 3 |
|-----------|----------|-------|
|           |          | White |
| Wednesday | 44½      | 43½   |
| Thursday  | 44½      | 43½   |
| Friday    | 44½      | 43½   |
| Saturday  | 44½      | 43½   |
| Monday    | 45       | 44    |
| Tuesday   | 45       | 44    |

Chicago.—May oats 43½c per bu; July 41½c.

**Rye.**—Trade is dull and weak at a decline of 2c. Cash No. 2 is quoted at 92c per bushel.

**Barley.**—Higher with malting grades at Milwaukee quoted at 67¢/73c; at Chicago 60¢/71c.

**Peas.**—Chicago market is steady at \$2.40@2.50 per bu., sacks included.

**Beans.**—Trade inactive with quotations lower. Immediate and prompt shipment \$3.55; March \$3.57; April \$3.60. Chicago prices are steady, pea beans hand-picked quoted at \$3.70@3.80; do. common to good \$3.55@3.70; red kidneys \$5@5.30. At Greenville farmers are offered \$3.20.

**Clover Seed.**—Prime spot \$12.65; prime alsike \$9.75. At Toledo prime cash \$12.70; prime alsike \$9.70.

**Timothy Seed.**—Prime timothy low at \$3.50 per bushel.

## FLOUR AND FEEDS.

**Flour.**—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$6.30; seconds \$6; straight \$5.70; spring patent \$6.70; rye flour \$6.

**Feed.**—In 100-lb. sacks, jobbing lots are: Bran \$24; standard middlings \$25; fine middlings \$30; cracked corn \$31.50; corn and oat chop \$28 per ton.

**Hay.**—No. 1 timothy, \$18.50@19; standard timothy \$17.50@18; light mixed \$17.50@18; No. 2 timothy \$15@16; No. 1 mixed \$14@15; No. 1 clover \$10@13.

Chicago.—Choice timothy \$18@18.50; No. 1 do \$15@16; No. 2 \$13@14.

**Straw.**—Wheat and oat straw \$6.50@7; rye \$7.50@8 per ton.

## DAIRY AND POULTRY PRODUCTS.

**Butter.**—Market is firm in all grades and prices are 1c higher. Extra creamery 35c; firsts 34c; dairy 21c; packing stock 18c.

**Eggs.**—There is a lack of fancy fresh goods and they are held firm at higher prices, 35c being a fair basis for the market.

Chicago.—The light receipts of fresh stock are readily disposed of and mar-

ket remains firm at advanced prices. Storage stock is being resorted to to supply deficiency. Extra creamery 35c; extra firsts 33½@34c; firsts 29@33c; extra dairies 33c; packing stock 20@20½c.

**Eggs.**—Receipts of eggs increased but were taken care of by a good demand at prices 1½c lower than last week. Current receipts are quoted at 20c; candled firsts 20½c.

Chicago.—The trade is active and takes care of the liberal receipts at prices about 2c lower than last week. Firsts, 18½c; ordinary firsts 17½c; miscellaneous lots, cases included 18@18½c.

**Poultry.**—The market remains firm at last week's prices. Turkeys 16@17c per pound; spring turkeys, 21@22c; fowls 14@18c, according to quality; spring chickens 16½@18c; ducks 18@19c; geese 17@18c per pound.

Chicago.—The trade is good; prices are higher for all kinds except geese. Light receipts are the cause of firmness. Turkeys, young and old 12@20c; fowls 17c; springs 15@18c; ducks 17@18c; geese 10@14c.

## FRUITS AND VEGETABLES.

**Apples.**—Apples are moving freely and offerings are ample. Greenings \$2.50@3.50; Spys \$3.50@4; Baldwins \$3@3.50; Steel Red \$4@4.50. At Chicago, trade is fairly active and steady. Fancy stock brings premium prices. No. 1 Greenings are quoted at \$2.75@3 per bu; Jonathans, No. 1, \$3.50@4; Baldwins \$3@3.25; Spys \$3@3.75.

**Potatoes.**—Market steady at slightly lower prices. Carlots on track, white 95c@1; red 90@95c per bushel. At Chicago the market is firm and active at higher prices. Receipts are moderate. Michigan whites 95c@1 per bu; other kinds 92c@1. At Greenville the buyers are paying 85@90c per bu.

## WOOL AND HIDES.

**Wool.**—At Boston trade ruled active last week and buyers were eagerly seeking supplies. In the west growers demand high prices and in numerous instances dealers meet the quotations. A strong demand prevails for fleece wools with supplies about exhausted. Michigan unwashed delaines are quoted in Boston at 31¢/32c; do. combing 32¢/37c; do. clothing 26¢/31c.

**Hides.**—No. 1 cured 16½c; do. green 14c; No. 1 cured bulls 13c; do. green 10c; No. 1 cured calf 21c; do. green 20c; No. 1 horsehides \$4.50; No. 2 \$3.50; No. 2 hides 1c lower than the above; sheepskins, as to amount of wool, 50c@52.

## DETROIT EASTERN MARKET.

Tuesday morning's market was small. Most farmers have cleaned up their products for the year. Apples 80c@1.25; potatoes 70c@1; carrots \$1; parsnips \$1; cabbage 75c; radishes 30c per dozen; eggs 35c per dozen; loose hay \$18@22 per ton.

## LIVE STOCK MARKETS.

### Buffalo.

March 6, 1916.

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

Receipts of stock here today: Cattle 128 cars; hogs 100 d. d.; sheep and lambs 60 d. d.; calves 1200 head.

With 128 cars of cattle today, including 18 to 20 cars of shipping cattle, the demand was very strong, and in fact we could have sold more cattle. Bulk of the shipping cattle sold 10@25c higher, and with a strong local demand here the butcher cattle and female stuff sold 15@25c higher. There were very few bulls here today, demand strong and bulk sold 10@25c higher. There was a light run of cattle in Chicago today and it looks as if it has come to a time now when these good corn-fed cattle will get scarce and the future prospect looks good. We look for a fair run of cattle here next week and a good market.

We had a fairly liberal supply of hogs here today, quality very poor, choice grades selling 5@10c lower, and pigs demoralized, the sales generally 50c per cwt lower than the close of last week. Bulk of the hogs sold from \$9.40@9.50, with a few selected lots at \$9.60; pigs generally \$8.25, and light hogs from \$8.50@9.25, as to weight and quality, and sales on this kind very uneven. Bulk of the roughs landed at \$8.50; stags \$6@7. All good grades of hogs closed strong, but lights and underweight stuff were very dull and some going over unsold.

Market was active on choice sheep and lambs but slow on medium and coarse, with prices 25c lower than the close of last week. About six loads unsold and we look for about steady prices balance of the week.

We quote: Lambs \$11.40@11.50; cull to fair \$8@11.25; yearlings \$8.50

@10; bucks \$4.50@7; handy ewes \$8.25@8.50; heavy do \$8@8.25; wethers \$8.75@9.25; cull sheep \$4.50@7; veals, good to choice \$11.75@12; common to fair \$8@11.50; heavy \$6@9.

### Chicago.

March 6, 1916.

Cattle. Hogs. Sheep.  
Receipts today..16,500 50,000 17,000  
Same day 1915..16,780 27,913 18,361  
Last week.....44,559 181,191 65,748  
Same wk 1915..39,464 165,101 58,812

Shipments from here last week were as follows: Cattle 10,817; hogs 45,135; sheep 15,320, comparing with 8,657 cattle, 32,018 hogs, and 7,172 sheep for the same week last year. Hogs received averaged 209 lbs.

This week opens with a small run of cattle and a good demand at advances of 10@15c; butcher stuff showing especial strength. Hogs are firmer, with a late advance to \$9.25 for the best. Sheep and lambs are largely 15c lower, tops being \$11.25 for lambs and \$8.35 for ewes.

Cattle were in animated general demand last week, and prices underwent further advances, amounting to 25c or more, the receipts being comparatively moderate from day to day. Pretty much everything in the cattle line moved upward. Beef steers sold largely at \$7.60@9, with the better class bringing \$9@9.90, and among the noteworthy high sales were those of 30 Kansas 1710-lb. steers at \$9.50, 16 Iowa fed steers, 1672 lb. steers at \$9.70 and 34 Kansas steers that averaged 1767 lbs. at \$9.90. Steers that classed as "good" brought \$8.50 and over, and sales were made all the way down to \$6.50@7.50 for ordinary offerings of light weight, with medium grade going at \$8@8.45. A sale took place of 24 Angus yearling steers averaging 1149 lbs. at \$9.65. Butchering cattle were in active demand, cows selling at \$5@7.50 and heifers at \$5@8.50, while cutters sold at \$4.30@5 and canners at \$3.50@4.25. Calves were good sellers, prices ruling at \$4.75@11.25 for coarse heavy to prime light vealers. There was quite an animated traffic in stockers and feeders, with the former going at \$6@7.85 and the latter at \$6.25@7.75, quality being a much more important factor in making prices than mere weight. Country buyers prefer good to choice stock cattle, and local killers purchased quite a number of stock steers at \$6.50@7.25.

Hogs continued to advance, with a good local and eastern shipping demand, and the \$9.20 top was the highest price recorded since last September. The general opinion is that the largest receipts of the year have been reached, and decreasing supplies and high prices are generally looked for. Recent receipts of swine here have averaged 208 lbs., comparing with 190 lbs. at the beginning of the year, 221 lbs. a year ago and 226 lbs. two years ago. Saturday's close was the highest yet seen, hogs selling at \$8.75@9.20 for common to light bacon to prime heavy shipping hogs, and the best light singeing hogs sold at the top, too. Pigs brought \$6.75@8.50.

Lambs, yearlings, wethers and ewes have continued to sell much higher for a week than in former years at corresponding dates, although prices have ruled lower than a short time ago. There was a strong demand for shearing and feeding lambs, and their comparative scarcity caused them to sell extremely high. As everybody knows, there is a great scarcity of lambs and sheep in feeding districts, and Colorado sheepmen have the whole thing practically in their own hands, so if they market too many at one time, it will be their own fault. Closing Saturday prices were: Lambs \$8@11.50; feeding lambs \$9.75@10.90; yearlings \$8.75@10.25; wethers \$7.50@8.70; ewes \$5@8.50; bucks \$6.25@7.25.

Horses were in moderate supply and in strong local and shipping demand last week at firm prices, with the commoner to fair class of light weight horses in demand for southern shipment at \$50@100, while drivers were quoted at \$100@200 and wagoners at \$165@200. Commercial chunks sold at \$165@220 and better and heavier animals at 225@260 and occasionally at a higher figure. Much the largest demand centered in horses for the French army.

## LIVE STOCK NEWS.

Because of the small supplies of lambs, yearlings, wethers and ewes in most feeding districts of the United States, the Chicago market continues to receive meager offerings, with Colorado and western lambs comprising the bulk of the dairy arrivals. As killers have made serious objections to paying the recent high prices, sharp breaks in values have taken place at different times, but even then the prices paid were far higher than in former years at corresponding dates. Of late the opening of the feeder outlet has

afforded an opportunity for buyers to purchase some feeding lambs, but their scarcity has made phenomenally high prices, with the better class selling at \$10.75@10.90 per 100 lbs. Many of the northern lambs coming on the market are too heavy to suit most killers, and flocks averaging 90 lbs. and upward have to be sold at a considerable discount, as the popular demand is for lambs that are good and fat and weigh around 75 to 80 lbs. With wool commanding unusually high prices, this is an important factor in causing a demand for unfinished lambs to ship to farms for shearing and finishing.

Cattle prices are ruling much higher than in most former years, 1915 included, and it is evident that so far as the choicer lots of heavy and handy weights and fat little yearling steers and heifers are concerned, high prices have come to stay until stockmen have time to produce a new crop of calves. Prime yearlings are rarely seen these days, and whenever a carload does show up, it is quick to find an eager buyer at outside prices. Soft corn has caused stock feeders to hurry most of their holdings put in last autumn to market prematurely, most of them coming only short-fed or merely warmed-up, and the result is that feeding districts are carrying so few feeders that owners are doubly anxious to stock up once more. The re-opening of the feeder outlet at the Chicago stock yards has been heartily welcomed by stockmen in the wide territory tributary to that market and a steady demand for such cattle has started up, with several states at last admitting such stock within their borders, but the high prices asked for the better class of these cattle act as a check on their sale to a considerable extent. Sales have been made quite recently of stockers and feeders at a range of from \$6@7.85 per 100 lbs., depending on their average weight and quality, but quality is the important thing far more than weight, and prime light stock steers have sold as high as the best heavy steers in numerous instances.

## Hill's Evergreens Grow

Best for windbreaks and hedges. Protect crops and stock. Keep house and barn warmer—save fuel—save feed. Hill's evergreens are hardy, nursery-grown. Get Hill's free illustrated evergreen book and list of 50 Great Bargain Offers—from \$4.50 up per Thousand. 56 years' experience. World's largest growers. Write to HILL NURSERY CO., Evergreen Box 2302 Dundee, Ill. Specialists.

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PLANTS, VINES, ROSES, ETC.

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Wouldn't you be more than satisfied if you or any one of your men could milk from 15 to 25 cows an hour—and do the work thoroughly and without getting tired? Other dairymen with herds similar to the size of yours are doing the milking in from one-half to one-third of the time and expense with the

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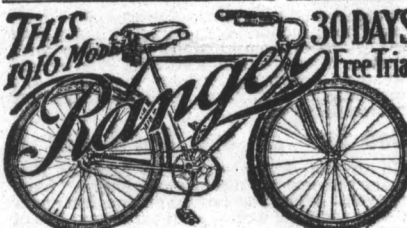
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Here are a few questions to ask yourself: "If over 6000 dairymen can make more money with the Hinman—why can't I?" "Couldn't I milk more cows if I had a Hinman?" "Would I have to keep a hired man the year around if it were not for getting the cows milked?" "Couldn't I do more work on the farm if the boy could do the milking?" Hinman Milkers are so simple that anyone who can milk cows by hand can operate them successfully, even a young boy or a woman, if necessary.

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Five minutes time will tell you whether your soil needs lime. We furnish materials free for making test.



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Makes sour soil sweet again and increases yield of alfalfa, clover, corn, wheat and many other crops. We make ground lump lime, hydrated lime or ground limestone (absolutely dry).

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**ASK**

our sales office nearest you for prices and terms on fertilizers adapted to your soil and crops.

Send for Booklet - Free

**The American Agricultural Chemical Co.** New York, Baltimore, Philadelphia, Buffalo, Cincinnati, Cleveland, Detroit, etc.

**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 MARKET.**

**Thursday's Market.**

March 2, 1916.

**Cattle.**

Receipts 2336. The market opened at the local stock yards Wednesday with a good fair supply of cattle and hogs on sale, and fairly good service was handed out by all roads but the Pere Marquette, who were away behind, both on Wednesday and Thursday. Shippers off this road claim their stock is held too long after arriving at Delray before being sent to the yards, and if this is true it should be remedied.

In the cattle division the trade was the most active seen here in some time, and on everything but canners and bulls the trade was 15¢ to 20¢ higher than last week. Bulls and canners were strong. Buyers were here from Chicago, Boston and Baltimore and a large number were bought for shipment; the local beef trade is not very brisk and Detroit dealers were none too anxious to meet the advance. Common milch cows are not wanted and were very hard to dispose of; good grades dull. The close was steady at the advance as follows: Best heavy steers \$7.75@8; best handy weight butcher steers \$7@7.50; mixed steers and heifers \$6.50@7; handy light butchers \$6.25@6.50; light butchers \$6@6.25; best cows \$6@6.25; butcher cows \$5.25@5.75; common cows \$4.50@5; bulls \$6@6.25; bologna bulls \$5.50@5.75; stock bulls \$5@5.25; feeders \$6.50@7; stockers \$5.50@6; milkers and springers \$30@70.

Haley & M. sold Newton B. Co. 7 butchers av \$24 at \$6.35, 5 do av 620 at \$6, 9 do av 900 at \$7, 1 cow wgh 780 at \$3, 2 do av 1165 at \$6, 2 do av 1020 at \$5.10; to Nagle P. Co. 5 steers av 794 at \$6.90, 5 do av 880 at \$6.75, 2 do av 675 at \$6, 2 bulls av 1700 at \$5.40, 4 cows av 922 at \$4.40, 2 do av 1200 at \$5, 4 steers av 1030 at \$6.50; to Mich. B. Co. 8 do av 1045 at \$7; to Newton B. Co. 22 do av 880 at \$6.70, 2 cows av 1070 at \$5.50, 6 do av 1055 at \$5, 20 do av 1167 at \$7.45, 12 do av 1111 at \$7.45.

Reason & S. sold Thompson Bros. 1 bull wgh 1750 at \$6, 1 do wgh 1260 at \$5.75, 1 do wgh 900 at \$5.50, 2 cows av 900 at \$5.50, 1 do wgh 1370 at \$5.75, 1 bull wgh 1690 at \$6.50, 1 do wgh 1260 at \$5.50, 2 do av 1215 at \$6; to Newton B. Co. 16 butchers av 982 at \$5.50; to Sullivan P. Co. 17 do av 990 at \$6.50, 4 cows av 1005 at \$4.50.

Roe Com. Co. sold Newton B. Co. 2 steers av 1050 at \$7, 2 cows av 790 at \$5, 7 steers av 716 at \$6, 1 cow wgh 1450 at \$6.25, 2 do av 1045 at \$5, 2 do av 950 at \$4, 1 do wgh 990 at \$4.25, 1 do wgh 1090 at \$5.25, 1 steer wgh 1220 at \$7.40, 5 cows av 844 at \$4.15; to Bray 11 cows av 1187 at \$5.25; to Newton B. Co. 4 do av 1075 at \$5.60, 1 do wgh 930 at \$4; to Breitenbeck 2 do av 930 at \$5.

**Veal Calves.**

Receipts 968. The veal calf trade was about steady with last week on good grades, a few choice bringing \$12 but the bulk of sales for good was at \$11@11.50. Common and heavy grades were dull and 25¢ lower, selling at from \$7@10.

Sandel, S. B. & G. sold Thompson Bros. 8 av 125 at \$10.25, 8 av 145 at \$10.25, 1 wgh 160 at \$11.50; to Sullivan P. Co. 7 av 150 at \$11.50, 2 av 140 at \$11.50, 7 av 125 at \$10.50, 3 av 120 at \$8.50, 8 av 150 at \$11.50, 5 av 130 at \$9.50; to Burnstine 4 av 145 at \$11.50; to Mich. B. Co. 14 av 150 at \$11.50.

**Sheep and Lambs.**

Receipts 2458. The sheep and lamb trade for choice lambs was about steady but common grades were dull and a trifle lower than last week; on Wednesday two bunches brought \$11.10 but they were extra fancy. The bulk of the sales were as follows: Best lambs \$11; fair lambs \$10@10.75; light to common lambs \$8.75@9.50; yearlings \$9.50@10; fair to good sheep \$6@7.25; culls and common \$5@5.50.

Bishop, B. & H. sold Swift & Co. 228 lambs av 78 at \$11, 203 do av 79 at \$11, 22 do av 103 at \$10.50; to Nagle P. Co. 16 do av 65 at \$10.60, 22 do av 70 at \$10.60, 4 sheep av 120 at \$6; to Sullivan P. Co. 10 lambs av 95 at \$10.60, 110 do av 65 at \$10; to Nagle P. Co. 82 do av 75 at \$10.60, 105 do av 80 at \$10.75, 105 do av 85 at \$11.10; to Mich. B. Co. 104 do av 85 at \$11.10, 110 do av 75 at \$10.75.

**Hogs.**

Receipts 10,238. The hog trade was active and 35¢ to 50¢ higher than it was a week ago and on Thursday was five cents higher than on Wednesday; the prospects look good for higher prices. Heavy grades \$8.95; yorkers and mixed \$8.75@8.90; pigs \$8.25@8.50.

**Sturges Milk Cans**

**Accurate in Capacity**

Each Sturges Milk Can is made to hold just so much and no more. Always agrees with the city sealer's measure.

Only highest grade steel plate is used in Sturges Milk Cans. That's why they last longer than usually expected. Carefully tinned, seams soldered smooth as a china bowl—easy to keep clean. Write for Catalog No. 46.

**Sturges & Burr Mfg. Co.**  
508 So. Green St. Chicago, Ill.  
Established 1865

**The Lankford HUMANE HORSE COLLAR**

Don't work your horse with sore shoulders or galls when you can cure him by just using the Lankford Collar. It is made of best white oil duck, trimmed in extra heavy leather, and filled with clean, downy, curled, medicated cotton, which will not pack or harden.

**CURES Sore Shoulders and galls**

When properly fitted, we guarantee that the Lankford Collar will positively cure galls and sore shoulders. You need not lay up the horse. The Lankford fits any shaped neck; it is easily put on or removed—is always soft and pliable—will not sweat. Hums straps attached.

**Over 12,000,000 sold**

The Lankford Collar is widely known and popular. Sold by most dealers. Write us a postal and receive full information and name of nearest dealer. Be sure to look for the trademark shown below. Refuse substitutes, which are usually dangerous to the horse.

**POWERS MFG. COMPANY**  
Dept. 27 Waterloo, Ia.

**HORSES**

**PIONEER 22925**

**60 HEAD OF STALLIONS FOR SALE**

PERCHERONS, CLYDESDALES and HACKNEYS

Also 20 head of Choice Hackney mares with foal.

Gentlemen I got on my selling clothes.

Write for prices.

**JOHN CRAWFORD**  
Colby Ranch, Stanton, Mich.

**20 Head of Percheron 20**

**Stallions and Mares**

of high quality. Royally bred, some of them by the Great \$40,000 Champion Carnot (66,666). All recorded in P. S. A. Studbook. If you are in need of a good Stallion or mare, come and see us. We can suit you in both quality and price.

**H. A. ROHRS & SONS, R. D. No. 4, Napoleon, Ohio.**

**DUNHAMS Percherons**

**For Fifty Years The Best**

Send for fine Photographic Catalogue.

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**Percheron Stallions**

**Sixteen Head For Sale**

No salesman need apply we deal direct and give terms to responsible parties.

**A. A. Palmer, Estate, (R.R.) Orleans, (P.O.) Belding, Mich.**

**Registered Percherons**

2 rising two year old Percheron Stallions weight 1550 and 1600 lbs. Priced to sell. Inspection invited.

**L. G. HUNT, Eaton Rapids, Michigan.**

**Percherons, Holsteins, Angus, Shropshires, Durocs**

**DORR D. BUELL, Elmira, Michigan.**

**For Sale:** Two Registered Percheron Stallions coming three and six, black and grey. Will sell for \$ their value if sold soon. T.H. Love, R. 3, Howell, Mich.

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

**FOR SALE:** Three Registered Percheron Stallions. One coming 2 yrs., one coming 4 yrs., one coming 6 yrs. this one imported. Farney Giesken, St. Louis, Mich.

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**LOESER BROS.**

We have 100 head of Belgian and Percheron Stallions and mares. Imported and home bred. We have sold pure bred horses in Michigan for the last 25 years, and have the right kind, and at the right price. We can supply any number of work horses, both geldings and mares. Get in touch with us.

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**JACKS AND MULES**

Raise mules and get rich. 200 head fine large jacks, jennys and mules, 14 to 17 hands high. Large registered jacks and draft stallions cheap now. Will trade for sheep, cattle or horses. Write for prices today. Stock guaranteed. Address **KREKLER'S JACK FARM** West Elkton, Ohio

**OVER STOCKED, MUST SELL.**

**FOR SALE:** Six colts coming three year old, four colts coming two year old, and three yearlings, six Jersey cows; three heifers; registered; four heifers, three two year old, one yearling registered bull; one extra nice pair of bay colts. This stock may be seen at the Fernes Farm, Chase Road, one mile north of Michigan Avenue, A. P. TEKNES FARM, 1730 Michigan Avenue, Detroit, Michigan, Walnut 2691.

**SHEEP.**

**Kope Kon Farms**

**SHROPSHIRE and DUROCS. KINDERHOOK, MICH.**

**Oxford Down Sheep.** no stock for sale at present.

**M. F. GANSSLEY, Lennon, Michigan.**

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

**RUFUS B. HOLMES CO.**

High and Riopelle Sts. Detroit, Mich.

**Commission Merchants**

Poultry, Live or Dressed, Dressed Hogs, Calves, Sheep and Eggs. Reference, Peninsular Savings Bank, Sullivan Packing Co. Shipments Solicited. Satisfaction Guaranteed.

**HAY** Ship your good quality to us. Highest Market Prices. **E. L. Richmond Co., Detroit.**

**HAY OUR NEW LOCATION—** 623-625 Wabash Bldg., Pittsburgh, Pa. **Daniel McCaffrey's Sons Co.**

**THE HARPSTER COMMISSION CO., Union Stock Yards, Toledo, O.** Sell live stock on commission, get highest prices and best fills. Try them. Daily market, force of six looks after your interest. Financially backed by over \$1,000,000.

**FARMERS—** We will pay premiums whenever possible above the highest official Detroit Market quotation for your eggs shipped direct to us by express. Write us for information. It will pay you **American Butter & Cheese Co., Detroit, Mich.**

**Sale or Exchange—Hardware** stock good location in Eagle village. Address Box 206, Eagle, Mich.





## Cushman Binder Engines

### For All Farm Work

This is the one successful binder engine. Thousands are in use every harvest. Fits any binder. Engine drives sickle and all machinery. Since horses have only to pull machine, two horses will easily handle 8-ft. binder in heavy grain. In a wet harvest Cushman Engine saves the crop, as it keeps sickle going when bull wheel slips—it never clogs. After harvest Cushman engine does all other work. Very light weight and easy to move around, yet runs more steadily than most heavy engines, because of Throttle Governor and perfect balance. 4 H. P. weighs only 190 lbs.; when stripped for binder only 167 lbs. 8 H. P. only 320 lbs. Forced water cooling system prevents overheating. Equipped with Friction Clutch Pulley.

Iver A. Madson, Wheatland, N. D., writes: "I have six engines and the Cushman is the best. It does not jump like a heavy engine. On the binder it is a great saver of horse flesh. It will do all you claim and more too."

4 H. P. Truck—Easy to Move Around. Same Engine Used on Binder.

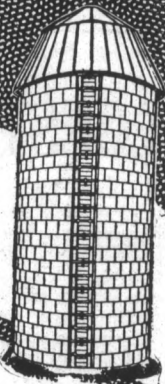


E. W. Gasser, Sidney, Ill., says: "With a Cushman I cut 10 acres more a day with less horses. A binder will last 3 or 4 years longer with this engine." Ask for free Engine Book.

Cushman Motor Works  
826 North 21st Street  
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## Lap-Joint Blocks

make stronger, more durable walls—your brace tile against tile—the silo material that lasts for generations. Write us—learn more about this construction in the



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### First Cost the Only Cost

Reinforced throughout with twisted steel—10% stronger than steel not twisted. Thin mortar line exposed between blocks—fluted end keeps mortar from slipping—gets solid grip. Write for low price offer and catalog.

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Get our offer on Climax Silage Cutters and Bidwell Thrashers

## GUARANTEED SILOS

TILE OR STAVE

Glazed tile or four kinds wood stave. Haul and easily erect Kalamazoo Silos when farm labor is most plentiful and cheap. Freight paid to your home town. Red wood doors, continuous opening door frame. Tile silos anchored by weight. Fire and frost proof. Superior to cement. Save money, too, by early-in-year shipments direct from nearest kiln, on factory to farm co-operation sales plan. Ask for booklet and details. Silo users make best local agents. Write today—Dept. 621.

KALAMAZOO TANK & SILO CO.  
KALAMAZOO, MICH.

## THE HOOSIER SILO EXTENSION-ROOF

Make your silo 100% efficient. A full silo after silage is settled. Let us show you how to

### Turn Waste Space Into Dollars

How to get more money out of your silo. Customers say "Hoosier Roof ought to be on every Silo." Write nearest office today for full particulars.

Sheet Metal Specialty Co.  
808 N.Y. St., Goshen, Ind.  
308 Savings Bank Bldg., Ann Arbor, Mich.



Wanted—A good sober Dairy Man with two good boys able to milk. By the Year.  
B. C. Banfield, Owendale, Michigan

## Marketing Association Succeeds

CO-OPERATION is on the boom. Co-operative associations are being formed everywhere and in most all cases are making a go of it. This is entirely different from the situation a few years ago when most every attempt at co-operative buying and selling failed. We are now getting the results of twenty or more years of oratory on co-operation. The thoughts given out in speech have crystalized into action.

Around South Haven, where there is a very successful association, most every shipping point has an organization of its own. An organization formed last summer which will undoubtedly rival the South Haven Association is the Fruit Growers' Exchange at Bangor, which community is famous for its productive orchards of high quality fruit.

The Exchange was organized in August with a capitalization of \$2,000 and with shares at \$100 each. Only one share is allowed each member and it entitles him to one vote. One-fourth of the capital was paid in. This is a rather small amount for starting a co-operative organization but in this case it was enough because the members loaned to the association the equipment, such as graders, etc.

The fruit is handled by the central packing house method, the charge for peaches being six cents per bushel. This includes taking off the wagon, grading, packing and selling. On apples the growers are charged 25 cents per barrel for firsts and seconds. In addition to this a selling charge of five per cent is deducted. This year, however, all of the costs of running the association was paid out of the bushel and barrel charge and therefore five per cent was returned to the growers. It appears therefore that

this arrangement will prove adequate. The amount of business done last year aggregated \$20,000. This is not as much as it would have been as several of the growers had sold their fruit before the time of organization in August, and therefore did not put their fruit through the exchange.

The output of the association in winter apples, including all varieties from Greenings on, was sold at \$3.15 for firsts and \$2.25 for seconds, to a Chicago firm which took the entire crop. This firm was highly pleased with the fruit and has reported that the apples have kept in storage much better than most of the storage stock.

The officers of the association are: F. J. Overton, president; W. Hamilton, vice-president; H. A. Keister, treasurer; George Low, secretary. Besides the officers there is a board of five directors which meets frequently to discuss the affairs of the association. A manager is hired during the season, and is under the supervision of the board of directors. During the past year his duties consisted only in supervising the work at the packing house. A committee of three members had charge of the sale of the fruit.

It is not compulsory for a member to sell his fruit through the association until he signs the yearly contract to do so. If he sells outside after that he is charged five per cent of his sales for doing so.

The co-operative buying side of the business will be developed as quickly as conditions warrant. This spring the lime-sulphur has been contracted for at a price which will mean a saving to the members of about \$200.

A warehouse has been rented by the year and will be used throughout the year for the various co-operative lines of work.

## How a Community Sells Vegetables

TOTALING more than \$100,000 of sales, shipping some 800 carloads of vegetables with two competitors in the community, yet holding more than 60 per cent of the farmer's business, and operating without capital stock and no buildings, is giving you in a nut-shell the achievements of the Marietta Truck Growers' Association.

This Ohio organization boasts of some 150 members, embracing more than 50 per cent of the truck growers of the lower Muskingum valley, noted as a fertile region for garden crops. The principal crops marketed include cabbage, tomatoes, cucumbers, corn, and other important garden crops. The bulk of the crop is sold at Pittsburgh, which is nearby, the city buyers sending inspectors at their own expense to examine all goods shipped.

The shipping is done in pools, gener-

ally comprising carlots. This is the unit of business management. All products of the same pool receive the same quotation, whether the individual lots brought equal returns or not. Contracts are entered into with the buyers and individual growers without the intermediation of the organization. As a result of this plan, which is novel, prices have been raised materially, market demands are more uniform, land values are increased. Better car service is maintained, as the railroads pay attention to the demands of 150 vegetable growers who are organized, where they did not heed 300 independent ones. The whole Marietta community is taking on a prosperous atmosphere, and these Ohio growers have pointed the way to prosperity which the farmers of any given community may well follow.

New York.

EARL W. GAGE.

## WILL INVESTIGATE MILK TRANSPORTATION.

A most striking example of the growing need of community, state, and even national co-operation in matters which formerly were thought to be extremely individual, is afforded by the prospect of a federal investigation, through the Inter-state Commerce Commission, of the milk transportation problem in New England.

Difficulties of transportation, poor quality, and an insufficient quantity, are three factors that have raised milk to the dignity of a political issue in New England, especially in the crowded industrial state of Massachusetts. A condition now has come about where it does not pay to ship milk of good quality and the farmer and the dairyman who do so are penalized.

To offset this condition the suggestion of grading milk, through bacteriological tests, is under consideration. The plan is to classify the milk in

three grades, which may be charged for accordingly. Then the farmer who produces Grade A milk will find it worth his while to do so, and the farmer who ships Grade C milk will find himself getting less money for it. Such a grading scheme has already been worked out in New York city.

### BENEFITS ARE GENERAL.

The agricultural co-operative movement in Austria is based, on the whole, on the fundamental principles of co-operation, namely, self-help, self-government and self-sufficiency. It has made such a brilliant and wonderful improvement in the efficiency of the whole rural population that it has by this means strengthened the foundations of the state. From this point of view one can very well say of it, that the co-operative movement is genuinely co-operative, for the government aid has in turn rendered abundant aid to the government.

# THE NEW "Z"

## ENGINE 1 1/2 h.p. \$35

on skids with BUILT-IN MAGNETO

3 h.p. \$60  
6 h.p. \$110  
All F. O. B. Factory

Fairbanks-Morse quality—service—dependability—at a popular price, tells the story.

### More than rated power and a wonder at the price

Simple—Light Weight—Substantial—Fool-proof construction—Gun Barrel Cylinder Bore—Leak-proof compression—Complete with Built-in Magneto. Quick starting even in cold weather. Low first cost—low fuel cost—low maintenance cost. Long, efficient, economical "power service."

### See the "Z" and You'll Buy It

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is a money maker for you. It saves the corn from the tassels to the roots. 40% of the feeding value is in the corn stalk. Save it. Get a Independent. Constructed of best fir staves. Finished workmanship. Dependable Anchoring System. Shipped on approval. Write for free catalog.

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keeps ensilage fresh and sweet. Many exclusive features.

Doors on hinges; triple bevel refrigerator type door and frame; oval door frame to fit the exact circumference of silo; extra heavy hoops and lugs bent to fit silo; continuous door frame.

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## A RAINY DAY

need not be dull. Cheer up!—Get to work in a

## TOWER'S FISH BRAND REFLEX SLICKER \$3.

A. J. Tower Co.  
Boston





## Grange.

### THE HESPERIAN MEETING.

The big meeting known as "The Hesperia Movement," has come and gone, leaving memories of faces and echoes of voices, the like of which we never saw or heard before. The meeting began with a lecture Thursday evening, February 17, and ended with a grand concert Saturday evening, February 19, three nights and two days of literary feasting such as no town of its size, and twelve miles from a railroad, could put up. The crowd every day and evening taxed the capacity of the Columbian Hall and Saturday afternoon the crowd was so great that the building was packed clear to the street.

This great annual community gathering has made it possible for Hesperia with less than 700 inhabitants, to pay \$150 for one speaker, not speaking of all the splendid array of talent in the day time and the other evenings. Meetings of its kind have sprung up in every part of this broad land and we keep getting letters from leading people in far away places asking advice on starting similar movements.

This year we had for the first evening a lecture, "The New Age Coming," by Rev. A. W. Wishart, of Grand Rapids, who said the new age would be a practical and democratic one. It will be an age of reform in which public health will be given attention. The government spends more for controlling diseases in cattle and hogs than in human beings. Health is a community problem. He also told of Germany and her system in doing things and pointed out the way she built roads. One of the characteristics of the new age is to be human. Humanity will be emphasized against nationality. The spirit of avarice manifested by Americans in the present war is going to hurt us with the other nations of the world.

Friday morning the girls of Hesperia high school presented a Spanish drill which was beautifully executed.

Mrs. M. B. Ferry, curator of Michigan Historical and Pioneer Society, was very interesting with her Michigan pictures of long ago, and gave an exhibition with several girls, explaining the costumes of the Indian girl, the Pioneer, the First Educator, and the Lady of 1876.

Hon. James N. McBride, Director of Markets, M. A. C., gave an interesting address on "Marketing the Crops," bringing out some fine thoughts and citing other countries, and finally summing the whole thing down to co-operation.

"Planting the Highway" was the theme of Hon. Frank F. Rogers, State Highway Commissioner, who said a tree that takes a lifetime to grow should not be destroyed lightly, and told how three nurseries in Massachusetts were propagating trees to plant on the highways.

E. C. Linderman, of M. A. C., gave an address on the value of "Junior Agricultural Clubs." He told of how the talent to do things was brought out and encouraged by these clubs.

Prof. C. W. Downe, of U. of M., spoke on "Why the Consumer's Dollar is Shrinking," and told of the depression from 1873 to 1876 and how Mr. Bryan got his support in 1896 from a discouraged people. One reason for the dollar shrinking was the high cost of living. One of the causes of the increase of the cost of living is the amount of money the government is expending in preparedness. We would have more if we could wipe war off the face of the earth. We pay for fumigating and perfuming the pure food we put up in packages and one-half billion dollars a year for advertising.

The remedy was larger and better farming conditions, more scientific management of our public affairs, and the abolishment of some of our great vices.

Friday evening the people listened to the star attraction of the course, James A. Burns, President of Oneida College, Kentucky, and they did not go away disappointed. His theme was "Conservation of Life in the Cumberlandlands." He told of the isolation and retrogression of the people, their present condition, their illiteracy and poverty, and his share in the redemption of his people. He spoke of the vision he saw, the giving up of the life work he had planned for himself and of the going back into the mountain fastnesses to stop the feuds and educate the people to a higher standard of life, the school he built, and the ceremony of laying the corner stone. Alone on the mountain side with a crude tool in his hand, fashioned from an old crowbar, with the crags and peaks of the Cum-

## Farmers' Clubs

### Associational Motto:

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

### PREPARING FOR NEXT YEAR'S MEETING.

Already the executive committee of the State Association of Farmers' Clubs is preparing for the next annual meeting of the organization to be held as usual at Lansing in December. Plans had been under consideration looking toward the holding of a three-day meeting—one day's sessions to be held at the College—but upon mature deliberation the members of the executive committee decided at a recent meeting to adhere to the plan of a two-day meeting for 1916.

President Robb would be glad to receive from the officers of each local Club using a printed yearly program a copy of same by way of suggesting desirable topics to be discussed at the next annual meeting. Often a local Club will manifest an interest in some question which would be a matter of profitable deliberation for the State Association, and by mailing Associational President Robb a copy of their printed annual programs, the local Clubs having such programs will aid materially in this matter of suggestions which will aid in making the next annual meeting even more profitable than those which have gone before it.

### CLUB DISCUSSIONS.

Honor Washington.—The Hickory Farmers' Club met with Mr. and Mrs. J. W. Arnold for their February meeting with a large attendance. The rooms were tastefully decorated with flags and other Washington decorations. After a fine dinner the meeting was called to order by President J. W. Arnold. R. P. Reavey having been appointed at a previous meeting to meet with a committee of other Clubs in regard to the Union meeting, gave a favorable report. Wm. Mudge, of Caro, gave a fine talk on dairying, giving several suggestions regarding the feeding and care of cows to obtain best profits, and also answered numerous questions asked by interested farmers. A fine paper on "Registered Stock" was read by B. B. Reavey. The Male Quartet sang, completing an excellent program, after which the Club adjourned to meet March 23, with Mr. and Mrs. Robert Reavey, at Caro.

berlands and his Creator as silent watchers, he laid the corner stone and dedicated it to the cause of the Cumberlandland people.

On Friday morning the second primary gave a George Washington drill, which was very fine, and Prof. W. D. Henderson, of U. of M., in his breezy manner gave a short address, and then came the business meeting and election of officers. E. T. Carbine has been president for twelve years and he was re-elected. Miss Isabelle M. Becker has been secretary and general manager for twelve years and she was re-elected, and Archie McCallum was elected treasurer.

Prof. Henderson gave a splendid address on Saturday afternoon to an audience that stood away out into the street, so dense was the crowd. "Dollars and Sense" was the topic. Mr. Henderson said the weakest thing in our government was unscientific management. We must bring from the college not only science but we must be permeated with the rendering of service. In order to have a great school system in America we must have better superintendents. We are not yet ready in America to give a man's job and a man's chance in the school business.

The Crispin Concert Company gave a grand concert Saturday evening, and the lady reader was delightfully funny. This evening's entertainment was the dessert after a meal of solid and serious thought. The big meeting, the twenty-fourth, and by no means the least, ended in one great big laugh.

The mission of the Hesperian movement is to bring the people together in one great clash of ideas and if they just carry a small portion home with them and put it into practice, the mission will have been benefited.

# Add 15 Years to Your Life in California

Rather strong statement? Well, here's why we make it: California is a land of out-door life. The mild climate, the tonic mountain air, sea breezes and sunshine have brought thousands of the leisure class to California for the sake of health.

Isn't it even more evident that an active business life will be prolonged by such surroundings?

### You Can Farm Twelve Months in the Year in California

You need not spend a large share of your earnings to carry your family and your farm animals through the winter's cold. Think what it means to be able to plow during January—to only need a light fire in the house mornings and evenings to take the chill off—and to let your live stock graze green fields all winter!

So it all amounts to this: A chance not only to prolong your business life, but to live it under the most favorable conditions as to health, money-making and money-saving. This conviction took firm hold of two trainloads of Eastern farmers that I personally escorted to California last fall. They saw the land, talked with the people, and experienced California for themselves.

It was not a land selling trip—it was solely for investigation. They were guests of the local communities, who provided autos and guides for demonstrating the agricultural activities of each neighborhood visited.

### A Book of Pictures

taken on this trip is now ready for distribution. Let me send you a copy. It includes many views of just what you have wanted to see, also many interesting letters.

Write me soon. Let me help you plan your 1916 trip. Reduced excursion fares the coming spring and summer will give you a chance to see the San Diego Exposition and agricultural sections of California at small cost. All-the-year-round tourist fares also are available. Ask all the questions you want, and say: "Send Farmers' Special Book."

C. L. Seagraves, General Colonization Agent, Atchison, Topeka & Santa Fe Railway  
2204 Railway Exchange, Chicago, Ill.

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Upward  
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Thousands in Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only \$15.95. Skims one quart of milk a minute. Different from picture, which illustrates our low priced large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements.

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SEND FOR IT NOW AND STUDY THE SUPERIORITY OF PROPERLY STAINED SHINGLES  
GET BETTER ARCHITECTURAL EFFECTS AND SAVE REPAINTING AND REPAIR BILLS

**"CREO-DIPT" Stained Shingles**

17 Grades 16, 18, 24-inch 30 Different Colors

We select best cedar shingles cut from live timber—no stumpage—no wedge shapes—and preserve them in creosote and stain them any color desired; best earth pigments and pure linseed oil—no aniline dyes or kerosene. They save all must, waste and bother of staining on the job. They last twice as long as natural wood. Good lumber dealers carry popular colors in stock for reshipping and general work. Send for your book of "Creo-Dipt" Stained Shingled Homes today, sample of colors on wood and full particulars.

STANDARD STAINED SHINGLE CO., 1066 Oliver St., N. Tonawanda, N. Y.  
(Factory in Chicago for Western Trade)

**They Come Stained Ready-to-lay Without waste.**

**Light Running Silberzahn LOW DOWN STEEL FRAME Silo Filler**

THE LIGHT RUNNING SILBERZAHN—for thirty years the King of Ensilage Cutters—has many improvements for 1916. Low down frame makes feeding easy. All steel triple frame heavily braced. Safety device makes accidents impossible. Malleable knife heads. Automatic force feed saves one man's time. Low speed six-arm blower. Independent control of blower and cutter head speed. Reversible feed rollers.

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154 South Water Street WEST BEND, WIS.  
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Are dependable seeds. For over 60 years they have stood high in favor of careful planters. Please write for our Money-Saving Catalog FREE

Check-full of saving offers in High-Yielding Strains of all important farm and garden seeds. A helpful illustrated Guide to seed-buying and planting. Write to-day, a postcard will do.

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**CLOVER SEED**

AT WHOLESALE—BUY NOW  
Our price very low. High-Quality. Get new 116-page catalog. All kinds of farm seeds—Alfalfa, Seed Corn, Vetch, etc. Also Tested Alfalfa, Grass Seed, Sweet Clover, Alsike, etc., at lowest prices. Full information and prices in big 4-color book—a postal gets it. Free samples.

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**STRAWBERRY PLANTS**

\$1.65 per 1,000. June and Fall varieties. Each tree and other plants at low prices. Truthful, illustrated book tell all. It's free.

**MAYER'S PLANT NURSERY, Merrill, Michigan**  
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**PURE FIELD SEED**

Clover, Timothy, Alsike, Alfalfa and all kinds of PURE FIELD SEEDS direct from producer to consumer; free from all noxious weeds. Ask for samples.

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**SWEET CLOVER SEED.** White and large biennial yellow.

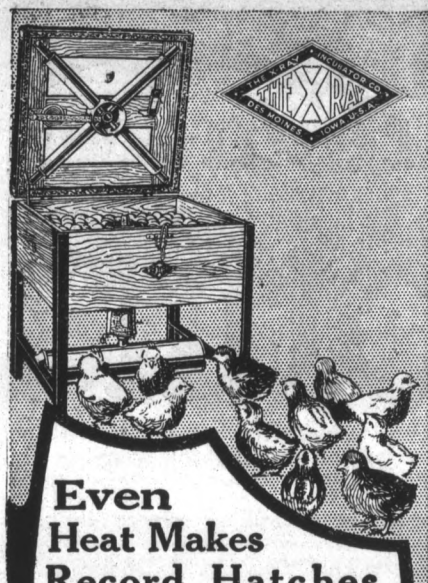
\$3.00 bu. of 60 lb. **B. E. PURDY, Falmouth, Ky.**

**SCOTT'S RED CLOVER**

Look out for Buckhorn and other weeds in clover this year. Very little pure seed to be had. Ours is practically free from weed seeds and waste. Much the cheapest to sow. All other varieties of field seeds. Samples and instructions "How to Grow Good Seed" Free.

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MILD, moist, even heat sent to every corner of the hatching chamber by the X-Ray Duplex Central Heating Plant heats every egg exactly the same. Never too much heat, never too little—X-Ray Automatic Trip attends to that.

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Fill the big tank just once—that's enough for the entire hatch. No fussing to fill a tank every day. No danger of hatch becoming chilled.

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**X-Ray Brooders** Built on same scientific lamp-in-center plan. Sanitary, rat proof, evenly heated. Give chicks the best start—raise largest percentage.



**\$390.00 In One Season**  
—chicken money with

### Old Trusty

for Mrs. Maud Rice, Oklahoma City, Okla. Many more making big incomes. Read about them in our Poultry "Know-How" BOOK FREE

136 pages. Write today. Get express or freight prepaid price on Old Trusty. Shipped quick from factory at Clay Center or warehouses at St. Joseph, Mo., or Seattle, Wash.

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**STILL LESS THAN \$10** Freight Paid East of the Rockies—a Trifle More Farther West

### WRITE Your Name on a Postal

and get our 1916 Incubator Book FREE and postpaid. Shows why **Prairie State Incubators** "hatch most chicks that live." Contains chapter on Poultry Diseases, also one on hatching and rearing.

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This 135-Egg Incubator and Brooder shipped anywhere on 30 days' trial. No money down—no deposit.

**\$9.95 Pays for BOTH if Satisfactory When Tested**

No other such open liberal offer exists. Because no other outfit equals the UNITED Incubator hot water, Brooder hot air. Both guaranteed. Satisfaction guaranteed. We take all the risk. Cash price both only \$9.45.

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### GEM The High Percent Hatcher

Buy the Gem and be sure. 25 years highest success. Capacity 50 to 270 eggs. Gem chicks always lively and thrive because our unique system of ventilation conserves natural egg moisture. Walls six-ply (4 layers of insulation). Built of Cypress, the "wood-eter-nal." Gem hot-water heating system of cold-rolled copper distributes and equalizes warmth. Best double-wafer regulator. Removable chick trays. Many more features in big, free catalog. Get our special offer, also "How to Buy an Incubator," and save money. Write today.

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### 'First Aid to Poultry Keepers'

Written by man who has devoted his life to poultry—book teems with pointers and real secrets on how to raise more and better chicks, get 100% hatches, produce prize winners. Tells how to save money on incubators and brooders—illustrates many with very latest improvements. Needed by beginners, farmers and others. Write today—edition limited. Model Incubator Co., 15 Henry St., Buffalo, N. Y. Also 39 Barclay Street, N. Y. C.

**Free Book Just Out** **Going Fast—Write Today**

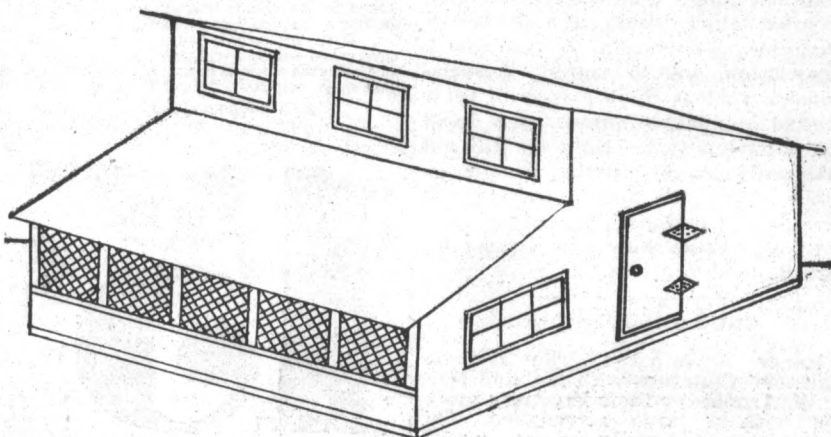
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## Fresh Air Poultry Houses

THE desire for a common-sense poultry house at a moderate price has resulted in the development of the open-front poultry house. The hen is warm blooded and covered with a coat of feathers which efficiently keep out the cold. For that reason she can endure clear cold weather. If the feathers become damp or the cold wind blows them away from her body she loses nature's protection and suffers. Therefore the hen cannot stand exposure to draughts and storms. The hen needs plenty of oxygen and sunshine and these two necessities were not supplied by the old style poultry house which excluded practically all fresh air and reduced the sunshine admitted to a minimum. The air in the open-front house is dry and clean, there are no problems of ventilation to worry about and they are free from the frost and dampness which makes the closed poultry house so chilly and unhealthy.

### A Popular Type of House.

A type of the open-front house which has become very popular is known as the Wood's house, named after the breeder who first advocated their use.



A Poultry House which will Provide Ventilation and Protection.

No curtains are used, the house being deep enough to prevent the cold outside draughts from striking the roosting place even during the most severe of storms. A popular size for this house has been twenty feet deep and twenty feet wide and such a house will easily accommodate from 100 to 150 layers, depending on the breed. The perfectly square house is economical to build and gives the maximum of floor space for the investment in material. Types of the Wood's house can be constructed in almost any size and they can be used for colony houses, laying houses or for any general use on the poultry farm. However, the depth of the house should not be less than twelve feet to protect the roosts from draughts. A square house of the Wood's type seems to me about the ideal method of housing for the farm flock. The windows just under the roof and the large window in the side furnish an abundance of light and the open-front covered with strong wire makes a fine system of ventilation. In the summer the windows may all be opened and the birds will receive as much fresh air as if they roosted in the open and yet they are protected from the wind and storms.

### Using Windows and Canvas.

Another type of the open-front house which is in general use consists in using both windows and canvas in the front of the house and this is especially desirable in small colony houses and in all houses less than twelve feet in depth. At present I am using a house of the open-front type with canvas curtains to close in time of stormy weather. There are no windows in the front of the house and on stormy days if the curtains must be closed the birds do not receive enough light. If the curtains are left up in severe storms the birds are not sufficiently protected. If the front consisted of one-half windows and one-half canvas curtains, the curtains could be closed and still allow the birds plenty of fresh air and freedom from draughts and

the glass windows would let in plenty of light. This emphasizes a point in favor of the Wood's open front house which is deep enough to prevent any draughts striking the birds, and sufficiently light at all times. At the same time this kind of house does not require curtains nor many windows, and it is the type of house I shall build exclusively in the future.

Ingham Co.

R. G. KIRBY.

### EGG-LAYING COMPETITIONS NECESSARY.

What the cow-testing associations are accomplishing for the dairy industry, the public egg-laying competitions are doing for the poultry industry. The first American laying competition started in November 1911, and took place on the grounds of the Connecticut Agricultural College. Shortly after the first North American competition a similar contest was organized in Missouri, and has been conducted since that time at Mountain Grove, Mo.

When the first American egg-laying competition was being organized the men who planned the contest realized

that the majority of poultrymen were securing too few eggs, and believed that the situation could be improved by creating a spirit of rivalry among the breeders of laying fowls. They saw an advantage in giving the breeder of utility stock a chance for public competition, which previously had been possible for the breeder of show stock only, and would give the buying public an opportunity to secure the blood of the most productive lines. A great many poultrymen, however, and the poultry and agricultural press were either openly hostile to it or non-supportive. At the present time, many of those who were at first most skeptical are the warmest supporters of the plan. The popular idea of it was that it was designed merely to show that certain breeds of fowls would lay better than others.

The following figures are very suggestive of the possibilities in poultry improvement. There are approximately three hundred million laying hens in the United States and these average about 70 eggs each per year. Increase this number to 80 eggs, and the additional output, at 25 cents per dozen, would be valued at \$62,500,000. Double the average yield, making each hen lay 140 eggs, and the increase in national wealth would amount to the sum of \$437,500,000. No advocate of the laying competition would be rash enough to predict that they will ever be responsible for the doubling of the average egg yield of all American hens but they are exerting a powerful influence toward accomplishing it. And yet, in Denmark the cow-testing association plan has resulted in an increase in the production of butter-fat from an average of 112 pounds to 235 pounds.

In all egg-laying competitions the trap nest plays an important part—in fact, the farmer who wants to find out which of his hens are boarders only and are not paying for their food, cannot afford to be without one. Trap nests are of value in weeding out the

## Chicks Grow Fast

Lost Only 5 Out of 314

"Our Candee Colony Brooder is working great. At present we have 314 baby chicks with it and they are doing fine. Have lost but 5 and 2 of these were cripples that I killed. I never saw a nicer bunch of chicks. They certainly do grow fast. We had an 80 per cent hatch of the fertile eggs in our Candee incubator."

Pettit Bros., Wilson, N. Y., Nov. 24, 1914

### Several Distinctive Candee Features

Broods up to 500 chicks in one flock. Burns coal—economical; automatic heat regulation. Larger 12-inch grate; safe, sealed base; long wool curtain stops drafts. High, roomy hover—healthier chicks. Candee curtain prevents overheating of room which makes the chicks hardy and vigorous.

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## Ironclad WINS

In 2 Biggest HATCHING CONTESTS Ever Held

**140 Egg Incubator } BOTH \$10**  
**Chick Brooder }**

If ordered together. 30 days trial, 10-year Guarantee. Freight paid direct from this advertisement—money back if not satisfied. East of factory. Incubator is covered with galvanized iron, triple walls, Rockies copper tank, nursery egg test-er. Set up ready to run. The Brooder is roomy and well made. Send for free catalogue.

**Ironclad Incubator Co., Box 117, Racine, Wis. (3)**

## WANTED—Honest, Energetic Men

In every county to sell our big line of goods direct to farmers. EXPERIENCE NOT NECESSARY. We fully instruct you. Farmers, laborers, mechanics, or any men willing to work can make

**\$1000 to \$3000 a Year**

handling our big sellers. Exclusive territory given. We furnish you the capital. You furnish the team to carry the goods. Be your own boss in a pleasant, permanent and profitable business. Write at once for full particulars, giving age and occupation.

### THE DUOFORM COMPANY,



## Tells why chicks die

E. J. Reefer, the poultry expert, 4383 Reefer Bldg. Kansas City, Mo., is giving away free a valuable book entitled, "White Diarrhoea and How to Cure it." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

## SHOEMAKER'S BOOK ON POULTRY

and Almanac for 1916 has 200 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, laying prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. C. C. SHOEMAKER, Box 911 Freeport, Ill.

## BEES PAY BIG PROFITS

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Get our samples and decide for yourself, if ours is not the best you have seen. We also offer exceptional values in **ALSIKE** and **TIMOTHY MIXTURES**, the best hay and pasture combination grown. Our **Free Catalog** describes these and hundreds of other Good Seeds.

**THE C. E. DUPUY COMPANY**  
PONTIAC MICHIGAN

## CLOVER AT WHOLESALE

prices. We save you money. Buy now before advance. Crop very short. Buy before advance and save money. Get our special low prices and free samples of our pure, Iowa Grown, New Crop Re-cleaned **Timothy** and **Timothy Seed**, Also **Alfalfa**, **Alsike**, **Sweet Clover**. All kinds grass seed. 100-page catalog free, quoting all field seeds. Save money by writing at once.

**A. A. BERRY SEED CO., Box 121, CLARINDA, IOWA.**

## CLOVER CHEAP

Now is the Time to Buy. Crop very short. Buy before advance and save money. Get our special low prices and free samples of our pure, Iowa Grown, New Crop Re-cleaned **Timothy** and **Timothy Seed**, Also **Alfalfa**, **Alsike**, **Sweet Clover**. All kinds grass seed. 100-page catalog free, quoting all field seeds. Save money by writing at once.



# Big Cash Profits

Every Week on Chicks. Write me for details showing how beginners with Belle City outfits make \$10 to \$25 a week on day-old chicks. Get the facts! Any man, woman, boy or girl can do it by following my plan and using my



## Incubators and Brooders

"In 25 World's Greatest Matches Belle City Won With Perfect Hatches" 402,000 in use. Get the whole wonderful story told by the championship winners themselves in my big Free Book, "Hatching Facts"

On Practical Chicken Raising With book comes full description and illustration of my incubator and brooder in actual colors—the kind used by U. S. Government and leading Agricultural Colleges—that won the "Tycos" Cup—that will win big success and cash profits for you—

### My 10-Year Money-Back

Guaranty—My Low Prices—same as last year. Freight prepaid. My 1-2-3 months' Home Test—all facts, proofs, particulars—100 photographs of prize winning hatches—also my \$1300 Gold Offers

Conditions so easy anyone may receive biggest pay. Biggest chance anyone ever had to make extra money with a hatching outfit. Learn how I paid one Belle City user \$156.25, another \$50, many from \$45 down. Everything comes with free book. Write me today. Jim Rohan, Pres. Belle City Incubator Co., Box 14, Racine, Wis.

## No More White Diarrhoea

The experiences given in the following letters should be conclusive evidence that White Diarrhoea can be prevented:

"Have been raising poultry for five years and every year have lost a great many of my incubator chicks with White Diarrhoea, but since using Chictone have not lost any. Last year I raised 500 healthy chicks." Mrs. K. L. White, Oswego, Ill.

"Two years ago I had 150 early April chicks and lost all but 20 from White Diarrhoea. Would go and carry away as high as 16 to 17 a day dead. Then I learned of Chictone and after using it last summer I only lost about half a dozen out of 250 with bowel trouble." Mrs. Sam Dotson, Dickens, Iowa.

"I have not lost a single chick of White Diarrhoea or any of the common ailments of chicks since I have used Chictone. It keeps them in good health and helps them to grow." Eleanor F. Illian, Adell, Wis.

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Bigger—Stronger—Healthier Chicks for YOU, Mr. Poultryman.

**NUTRO CHICK MASH**

15 grain and meat meals and a portion of Nutro Salts blended into a perfect chick mash.

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cracked grain and seeds make this a sweet and wholesome grain ration.

Growing Chick Food—feed after chicks are 4 weeks old—perfect developer.

Remember Our Guarantee and reduce your chick mortality to a cypher. That's what the largest poultry farm in Central Penna. did last season. Send today for price list and information. ALLEN MILLING CO., Dept. 6, Niagara Falls, N. Y.

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Reliable Northern Grown Plants, Ornamental Shrubs and Gladioli. We grow, sell direct, guarantee to please. Write for free illustrated Plant Book. Address: R. J. Stahelin, the St. Joseph Nursery, Box 461, St. Joseph, Michigan

poor layers and increasing the average egg yield of a flock by selecting and breeding, but are not extensively used on account of the large amount of labor required to operate them. A trap nest is a laying nest so arranged that after a hen enters it she is confined until released by the attendant. A trap nest used with good results on the government poultry farm and quite similar to that used at the Connecticut State Experiment Station is quite simple and may be built at a small cost. A three-compartment nest, sufficient for 15 hens may be built as follows:

Cut four 7/8-inch boards for ends and partitions, 12 inches wide by 19 inches long, enough half-inch boards 39 1/2 inches long, laid lengthwise, to cover the top, back and bottom, and one strip 39 1/2 inches long and one and a half inches wide for the front of the nests. Cut three pieces of half-inch boards 12 inches long and three inches high to insert in the nest to hold the nesting material away from the door. Nail the top, back and bottom to the ends and partitions, insert the three-inch strips in the nests, and make a guard for the trigger, nailing it to the left side of the nest. Bore a hole in the catch large enough so that the catch will move freely when screwed into position on the side. Place a washer on the screw between the catch and the side of the nest. Place a screw at the lower edge of the catch to stop it when set, so that the catch will just hold the door. Make the doors of 1/2-inch material, 12 inches by six inches, and cut a triangular notch in the center four inches wide. Put two screw eyes in the top of the doors and bore holes in the front of the nests two inches below the top through which a 5-16-inch wire is run to support the doors. Attach a narrow strip to the front of the nests for the hens to jump upon when entering the nests. Place a button or block of wood on the front of each partition to hold the door when the nest is closed.

### THE LAYING HEN.

While the trap nest is the most dependable method by which to select birds of high egg production, the additional labor and expense involved prohibits its use under most farm conditions. Without the trap-nest, one must resort to external indications.

When selecting pullets, choose only those from early hatches with strong constitutional development, early producing pullets, heavy eaters, early risers, later retirers and active. Hens of highest egg production have a feminine appearance, fine head, alert eyes, comb, face and wattles fine of texture and medium in size. They should stand square on their feet, legs wide apart, with the front end of the body slightly higher than the posterior end, long back and tail carried rather high. The body should present a wedge-shaped appearance, yielding ample room for the reproductive and digestive organs. Late molters make heavier winter egg producers. C. S. ANDERSON.

Effect of placing eggs in different positions in incubators was recently tested. No serious disadvantage resulted from standing the eggs on end for three days, but eggs laid flat and turned twice daily gave better results than those kept in any other position. There was a distinct disadvantage in leaving eggs flat without turning. Eggs which had been held at different periods from 10 to 30 days were incubated, and the results indicated that there was little loss in the hatchability of eggs kept for from 16 to 18 days before setting.

### CATALOG NOTICES.

The famous Old Trusty incubator book and annual catalog of the M. M. Johnson Co., Clay Center, Neb., will be sent upon request by the manufacturers of the Old Trusty line. It is a profusely illustrated book of 136 pages containing much valuable information to poultry raisers.

## Wisconsin Wins In Big Hatching Contests Every Year

### Why Pay More

For only \$10 you can get these two prize winning machines, delivered, freight paid east of the Rockies. You take no risk—money back if not satisfied. You can order direct from this ad. Ask the publisher about us.

### Both \$10 Machines

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We also furnish 180 Egg Incubator \$12 and 180 Chick Brooder both for only \$12

Wisconsins have hot water heat, double walls, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Made of finest, select, clear CALIFORNIA REDWOOD, not pine, paper or other flimsy material. Incubator finished in natural color—not painted to cover up cheap, shoddy material. Incubator and Brooder shipped complete with thermometers, egg tester, lamps, everything but the oil. This is the best outfit you can buy. If you don't find it satisfactory after 30 days' trial, send it back. Don't wait until you get our new 1916 catalog, fully describing this prize winning outfit. WRITE FOR IT TODAY. You can't make a mistake in buying a Wisconsin. On the market 15 years.

WISCONSIN INCUBATOR COMPANY, Box 106 Racine, Wis.

To introduce our goods we will send these three little labor-saving sanitary "Star" pens to any address in the United States for 25c, postpaid. They are made of heavy, rust-proof material and will fit any Mason Jar. **SIMPLEX SUPPLY HOUSE, 22 Pontiac Bldg., Chicago, Ill.** Send for catalogue describing our Feather Brooders, Automatic Feeders and other poultry appliances.

**ALL 3 FOR 25c**

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for farmers, with Automatic Soil Testing Machine. Experience unnecessary. Particulars free. Standard Soil Tester Co., Milwaukee, Wis.

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## Single Comb White Leghorns

Day-old Chicks and Eggs for Hatching.

Our breeding pens headed by males from family of trap-nested hens with records of 200 eggs or better. We select, mate and breed our stock for vigor and egg-production. Chicks \$15.00 per 100, Eggs \$8.00 per 100. Satisfaction guaranteed.

Krentel Bros. Box 624, East Lansing, Mich.

### YOU ARE LOOKING FOR BABY CHICKS.

We give you good quality for your money in both chicks and hatching eggs from a standard-bred strain of winter-layers. Winners at Kalamazoo, Battle Creek and Jackson. S. C. R. I. Reds—Bred for business and for beauty. (Send for price list.) Babcock & Son, R. No. 5, Box 180, Battle Creek, Michigan.

**Baby Chicks** from our own Bred-to-Lay Ringlet Barred Rocks \$10 per 100 S. C. White Leghorns \$10 per 100 and S. C. Buff Orpingtons \$12 per 100. Hatching Eggs carefully packed \$4 per 100. For further information write for our Chick Folder. **RUSSELL POULTRY RANCH, PETERSBURG, MICH.**

**BABY CHICKS FROM STANDARD BRED S. C. White and Brown Leghorns**, bred to lay large white eggs. \$9.00 per 100; \$85.00 per 1000. Safe arrival guaranteed. Catalog free. Wolverine Hatchery, Box 2221, Zeeland, Mich.

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**Barred Plymouth Rocks.** Have some splendid obtainable not quite matured. Would cost \$5.00 otherwise. **RIVERVIEW FARM, R. 2, Vassar, Mich.**

**BARRED Rocks Parks 200 Egg Strain** with records to 250 eggs a year—\$1.50 per 15 Delivered. By Parcel post. **Fred Astling, Constantine, Mich.**

**BARRED ROCK EGGS** and Baby Chicks from sturdy vigorous stock. **W. C. Coffman, R. 3, Benton Harbor, Mich.**

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**Eggs for hatching**—From pure bred White Plymouth Rocks, Pekin and White runner ducks. White African guineas. **H. V. Hostetler, R. 1, St. Johns, Mich.**

**EGGS.** S. C. W. Leghorn, good as offered, 15 eggs \$1.00, 30 eggs \$1.75. Catalog free. **M. MAYER, Jr., Merrill, Mich.**

**EGGS for Hatching.** Park's 200-egg strain barred E. Plymouth Rocks. 15-\$1.50; 25-\$2.50; 30-\$3.00; 50-\$4.50. **J. E. Grimm, Conklin, Mich.**

**EGGS for hatching** from pure bred White Plymouth Rocks and S. C. Buff Leghorns on free range. **Kletzen & Webster, Bath, Mich.**

**Eggs from pure bred S. C. W. Leghorns 5c each** **J. Melvin Reid, Glenwood Farm, Warren, Mich.**

**Ferris Leghorns**—200 Egg Strain. One customer's flock averaged 102 eggs in six water mos., another 181 eggs in 10 mos., another 199 eggs in 12 mos. You can do as well. Eggs, chicks, breeding stock from hens with records up to 264 eggs. Prize winners at largest shows. Prompt shipment, prices low, quality guaranteed. White Leghorns are best for eggs. We raise thousands. Free catalog and price list gives particulars. Write for it now. 16 years square dealing—thousands of pleased customers. **FERRIS LEGHORN FARM, 934 Union, GRAND RAPIDS, MICH.**

**Fowler's Buff Rocks** a few choice Cockerels from prize winning stock, 7 to 9 lbs. according to age \$2 to \$3. Eggs \$1.50 for 15. **R. B. FOWLER, Hartford, Michigan.**

**IMPROVE your poultry.** My Young's strain S. C. White Leghorns great money makers. Strong, vigorous, free-range stock. Baby chicks \$8 per 100 and up. Satisfaction guaranteed. Free catalogue. **W. Van Appleboro, Holland, Mich.**

**LEGHORNS**—White, Brown, Buff, Black. Also Rocks, Reds, Anconas, Pekin Ducks, eggs, baby chicks. Prices reasonable. Circular free. **Sunnybrook Poultry Farms, Hillsdale, Mich. Chas. G. Burroughs, Mgr. Formerly Foreman University of Wis., Poultry Dept.**

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**Pine Crest White Orpingtons** Strong, vigorous birds best of egg strain, eggs after Feb. 1st, baby chicks later. **MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Michigan.**

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**Rock Cockerels:** Buff, Barred, Columbian, Partridge and Silver Pencilled. \$2.00 each. **Sheridan Poultry Yards, Sheridan, Michigan.**

## Shorewood Rhode Island Whites

Leading business-bred strain of America's "Best Yet" breed. Trap-nested, pedigreed layers with records as high as 261, 248, etc. Ask for your copy of our pamphlet with prices on Baby Chix, Eggs, and Stock. **Shorewood Farms Co, Box 63, Saugatuck, Mich.**

**Silver Golden** and White Wyandottes. First prize winners at Ionia. Choice cockerels reasonable. Send for circular. **C. W. Browning, R. 2, Portland, Mich.**

**S. C. B. Minorcas** Cockerels and Pullets. Eggs, Pope S. strain. P. C. Bred Sows and fall pigs. Big type with quality. **R. W. Mills, Saline, Mich.**

**S. C. White Leghorns,** vigorous bred to lay stock. Eggs, \$5.00 hundred—75c for 13, a few day old chicks, safe delivery a n d fertility guaranteed. **M. MALONEY, R. No. 1, Kalamazoo, Michigan.**

**Winter Layers** Single C. B. Orpingtons. Seven year development by blending three popular strains, the Owens, Cooks & Mentz's fashion plate. A few choice pullets \$2 each. Eggs per setting of 15, \$2.50. **J. R. Fuller, Prop., Triangle Poultry Farm, Niles, Mich.**

**White Wyandotte Cockerels** From Bred-to-day stock. \$2.50, \$3.00 and \$3.50. **EGGADAY POULTRY RANCH, Marshall, Mich.**

**WHITE** Wyandotte Cockerels, \$2.50, \$3.50 and \$5 each. From High Bred stock and heavy layers. **A. FRANKLIN SMITH, Ann Arbor, Michigan.**

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

### Absolute Dispersal Sale of 35 Head of Registered Holstein Cattle

Having rented my farm I have decided to quit the dairy business. Will sell my entire herd of Holstein cattle, also Horses and Farm Tools at

**AUCTION SALE**

at 10 o'clock, March 21st. I have been a liberal buyer of the best breeders in the state for the last three years and it is with regret that I am compelled to dispose of this grand herd of cattle. A number of the cattle in this sale are sired by the leading herd bulls of this state. Be on hand as the cattle will be sold to the highest bidder positively rain or shine. Write for catalog for extended pedigree of cattle and further information. Farm is 1 1/2 miles east of Northville, 28 miles from Detroit on Northwestern Electric line, car every hour. Geo. Rattenbury, Northville, Mich., Wayne County.

### Dispersion Sale

Registered Holstein Cattle  
Wednesday, March 22, 1916.

Thirty head of choice cattle with the best of A. R. O. backing. Among them a splendid lot of bull calves from tested dams. A great opportunity for the man who will want a bull for next fall service. There are twenty females with records from 15.6 lbs. butter, 7 days as jr. two yr. old to 24.52 lbs. as mature cow. One year's time on approved notes at 6% interest. Sale held at farm 1 1/2 miles East of Haslett which is 8 miles North-east of Lansing on M. U. T. Write for catalog to

Barber & Jenkins,

HASLETT, - - MICHIGAN.

**CATTLE.****ABERDEEN-ANGUS**

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

**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** Four young bulls also young cows and heifers. Extra good. Priced reasonable. Inquire F. J. Wilber, Clio, Mich.

**FOR SALE**—14 Angus bulls 9 months and older, including our herd bull. Also a few cows and heifers. Geo. Hathaway & Son, Ovid, 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.

### BEACH FARM GUERNSEYS

No Tuberculosis Or Abortion

We are offering a number of fine Registered cows for sale. Some of these cows have finished their A. R. test and others soon will with records from 400 to 620 lbs. of fat in one year. We also have Reg. Bull calves from A. R. cows for sale, also one Bull old enough for service whose Dam's record is over 620 lbs. of fat as a 4 1/2 year old.

CAMPBELL & ANGEVINE  
Coldwater, Michigan.

### For Sale at Farmers Prices:

Choice Guernsey Bull calves sired by "Langwater Witcher" he by (Langwater Advocate & Langwater Daisy) and from excellent Dams, having A. R. records of 422 & 412 lbs. of B. F. as heifers. Write or call at "Sweet Orchard Farms" Birmingham, Mich.

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

**Guernseys** reg. for sale, Watervliet, Mich. May Rose Seven A. R. cows in herd  
Address J. K. Blatchford, Auditorium Tower, Chicago, Ill.

**AVONDALE** Guernsey bulls all sold. Sorry to disappoint those wishing our stock. Only registered bull calves left. Avondale Stock Farm, Wayne, Mich.

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

**Guernsey Bull Calf** Six months old A. R. breeding. Also a good Collie dog.  
G. A. WIGENT, Watervliet, Mich.

**Guernseys** for sale from A. R. dams. 1 2-yr-old bull and 3 bull calves. Geo. N. Crawford, Holton, Mich.

**For Sale:** Registered yearling Guernsey Bull also Bull Calves. Write JOHN EBELS, HOLLAND, MICH. R. No. 10.

**AT Farmers' Prices** Registered Guernsey Bull calves from A. R. dams and dams being tested. If interested write for photo, breeding and price. Byers & Parnes, Coldwater, Mich.

**GUERNSEY** Bull old enough for light service, a few good bull calves—all out of a Sod Pauline Spottwood—A. R. O. 746 lbs. fat—prices reasonable. J. M. Williams, North Adams, Mich.

## AUCTION SALE

### Rohlf's Bros. 3rd Annual Holstein Sale

We the undersigned on **March the 15th** will sell at public auction twenty head of choice Holstein cows and heifers, some are registered, others are pure-bred but not registered. These cows are fit to go into any man's dairy. Also five registered bulls ranging in age from six months to two years old. All choice animals. Every animal in this sale will be strictly guaranteed as represented. Shortage of pasture is cause for selling. Sale starts at 10 A. M. on premises of H. S. Rohlf's, one mile east and 1 1/2 mile south of Akron Village. Four trains into Akron at 9 o'clock A. M. One each way. Don P. M., one each way on D. B. C. & W. Those from a distance will be cared for at station. Free lunch at noon.

**ROHLF'S BROS.**

March 15th

TUSCOLA CO.

AKRON, MICHIGAN

March 15th

### DISPERSION SALE OF Registered Holsteins.

My lease on one of the McPherson Farm Co.'s, farms having expired and having decided to quit farming, I will offer at public sale on the farm 2 1/2 miles south and one mile west of Howell, Michigan, on **Wednesday, March 15th, at 1 o'clock P. M.** my entire herd of Registered Holsteins, consisting of:  
2 daughters from a 21 lb. 3 year old who has a 29 lb. dam; 1 daughter from a 19 lb. 2 year old who has a 22 lb. dam; 1 daughter from a 22 lb. cow; All bred to freshen next fall. 1 heifer calf from a 13 lb. 2 year old with an 18 lb. dam at 14 years old; 1 heifer calf from a 20 lb. 4 year old; 1 heifer calf from a 22 1/2 lb. 10 year old cow; 1 heifer calf from a 25 lb. cow; 1 bull calf from a 19 lb. 2 year old and several bulls old enough for service, all from A. R. O. dams. Sale of horses, tools, etc., at 10 o'clock A. M. (No catalogues.)

**Harmon Beaty, Howell, Mich.**

### Duroc Jersey Boars and Sows

**BROOKWATERS' WINNING COMBINATION**

**Best Blood Lines. Individual Merit. Prices that will make you money.**

This is our record, one which we shall maintain. Choice fall and spring pigs and mature stock. Send for our new circular and state your wants. Write or better come. If you wish one of the best young Jersey bulls in Michigan we have him for sale.

**Brookwater Farm, Swine Dept., Ann Arbor, Mich.**

**Herefords—3 Bull Calves**  
ALLEN BROS. PAW PAW, MICH.

### 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 1/4 % 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.

### 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.

### 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 4.38. Sires in first three generations already have over 600 A. R. O. daughters. A few females bred to "King". Prices reasonable.

**HOLSTEIN Bull Calf:** Born Nov. 8th. A nice individual well grown, about evenly matched. His dam and Sire's dam have A. R. O. records that average Butter 7 days 24.83 lbs. Milk 563 lbs. W. B. READER, Howell, Mich.

**For Sale:** Big Holstein Bull 2 yr. old. Good breeding. Reg. bulls and heifers 10 mos. old.  
Ferd. J. Lange, Sebewaing, Mich.

**Choice Holstein Bu's.** All from A. R. O. Dams. Semi-off. old class to over 1000 lbs. in mature class. Breeding: Cross "King of the Pontiacs" and the "Demick milk". Cherry Creek Stock Farm, Hilliards, Mich. M. E. Parnelle, Proprietor.

**ALFALFADALE** HERD of Holsteins. Contains aged cows producing 32.94 lbs. of butter in 7 days; 4 yr. olds producing 31.76; 3 yr. olds producing 26.37 and 2 yr. olds 25.69 all officially tested. Sons and brothers of these high testing cows for sale. Geo. H. Gillespie & Son, Mason, Mich.

**\$75** gets 2 mo. old Hazel-Let grandson of Maplecrest De Kol Parthena and Pontiac milk 30.2 lb. Dam's 5 nearest dams ave. 507.5 lb. milk 7 days. By a son of De Kol 2nd Butter Boy 3rd. Her dam 18.96 lb. 2 yr. M. L. McLaughlin, Bedford, Mich.

### Holstein Bulls Ready For Service.

Grandsons of Friend Hengerveld De Kol Butter Boy and Pontiac Aggie Korndyke. From high record A. R. O. dams at farmers' prices.

**LONG BEACH FARM,**  
Augusta, Michigan. (Kalamazoo Co.)

**I Have Holstein Bulls,** Bull Calves and Cows that I offer for sale. I can show breeding, records, individuality and attractive prices. L. E. CONNELL, Fayette, Ohio.

### Choice Holstein Bull Calves

Ready for service, **World's Champion Parentage**  
**HILLCREST FARM - Kalamazoo, Mich.**

### SPECIAL

A rare chance to buy a registered Holstein bull calf at a very low price.

**2 Born in Nov. 1915 at \$35 each**  
**2 Born in Feb. 1916 at \$50 each**

Excellent breeding. The last two being sired by the great bull "Pledge Spofford Calamity Paul." You will have to act quick to get in on this sale.

**Espanore Farm, Lansing, Mich.**

### "TOPNOTCH" Holsteins

By careful retention, for many years, of largest producing females, and use of superior sires, a breeding herd of wonderful quality has been established. We are selling young bulls of this "TOP NOTCH" quality of serviceable age, at moderate prices. Information, pedigrees, etc., on application. McPHERSON FARMS CO., Howell, Michigan.

### Special Notice

**Registered Holsteins For Sale**

Have rented my farm. I offer for sale 10 registered cows age 2 years to full age. Price \$150 to \$225. 20 head to select from. A chance to get some choice cows at a very low price. Must be sold by April 1st. M. E. Williams, Elsie, Mich.

### FOR SALE Registered Holstein Bulls

ready for service, and bull calves, also females. **FREEMAN J. FISHBECK, Howell, Michigan.**

**Registered** Holstein heifer, 2 mos. old, mostly white, very nice individuality and breeding. \$100 delivered, safe arrival guaranteed. Write for pedigree. **HOBERT W. FAY, MASON, MICH.**

**REG. Holstein Bull 5 mo. old.** Dam 23.73 Butter dam of R. Flint Butter Pauline 3.96 milk, 28.51 Butter in 7 days at 2 years. Priced right. John A. Rinke, Warren, Mich.

**FOR SALE**—Registered Holsteins. One heifer 10 mos. old, also 3 bulls from 2 to 7 mos. old, sired by a 30 lb. Bull. Wm. GRIFFIN, R. No. 5, Howell, Mich.

**A BARGAIN**—A beautiful pure bred four year old Holstein cow, nearly white, good size and large persistent milk, bred to freshen this fall. **GEO. D. CLARKE, VASSAR, MICH.**

**Reg. Holstein Bull,** 5 mos. old. Dam made 546 lbs. milk marked and well grown. E. R. Cornell, Howell, Mich.

**Holstein Bull** eight months old thirty five dollars. Pure bred but not official. Perfect markings. **A. R. GRAHAM, Flint, Michigan.**

**FOR SALE**—Reg. Holstein cow, four years old, due Mar. 12. One heifer, 23 months old freshened Jan. 24. One heifer calf born Jan. 24. CHAS. I. COOK, Box 48, FOWLERVILLE, MICHIGAN.

**Fifteen** Hundred dollars buys ALL our Holsteins. Korndyke strain. Seven young cows, 4 heifers. Tuberculin tested. Danish Holstein Farm, Gowen, Mich.

**Only \$25 Delivered:** Handsome Holstein bull not bred but not official. Pure bred, not registered. **Rougemont Farms, Detroit, Mich.**

**Ypsilanti Farms** Holstein-Friesian Heifers and young bulls. Choicest breeding, sensible prices. Ypsilanti, Mich.

### The All-Around Jersey

is the farmer's cow. She's his friend and pride—the beautiful, gentle, ever-paying milk machine that lifts the mortgage, builds up the fertility of the farm, and puts the whole business on a sound, paying, permanent basis. She adapts herself to all climates and all feeds and does not need fancy care. She matures early and lives long. And she's so sleek, clean cut and handsome, as to be the family pet and pride. She produces well and sells well. Learn about her in our fine, free book, "About Jersey Cattle." Write for it now. **THE AMERICAN JERSEY CATTLE CLUB**  
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**Lillie Farmstead Jersey Cattle.** Bull calves from R. of M. Cows, also heifer calves and several bred heifers for sale. Colon C. Lillie, Coopersville, Mich.

**THE WILDWOOD** Jersey Herd. Registered Jersey Cattle of Quality. Forty Ass'd. Tuberculin tested Majesty's Wonder 9677 heads the herd. His daughters are producing from 400 to 500 lbs. butter in one year as two year old heifers, and are bred to Majesty's Oxford Fox 13424 a classy Grandson of Oxford Majesty which combines type and production. Alvin Balden, Cadash, Mich.

**MAPLE** Lane R. of M. Jersey Herd. Tuberculin tested by the U. S. Government. For sale bulls, cows, bull calves and heifer calves. The lowest record of any mature cow of this strain is 553 lbs. of 8 1/2 butter. **IRVIN FOX, Allegan, Michigan.**

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

**HILLSIDE** Farm Jerseys, yearling bulls, solid color, half brothers to ex-world's-record senior 2yr old and from R. of M. dams, with records from 400 lbs. to 600 lbs. C. and O. DEAKE, Ypsilanti, Michigan.

**23 Registered Tuberculin** tested Jersey Cows for sale. Also young females **HERMAN HARMS, Reese, Michigan.**

**Hope Farm Jerseys.** FOR SALE—3 yearling bulls, 2 bull calves. **Geo. C. BORCK, Grand Haven, Mich.**

### BIDWELL SHORTHORNS

For "Beef and Milk"  
Registered bulls, Scotch-topped roans, reds and white for sale. Farm at N.Y.C. Depot; also D. T. & I. R'y.  
Address G. R. Schroeder Mgr. **BIDWELL STOCK FARM**  
Box B, Tecumseh, Mich.



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

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

**Auction** Sale Mar. 1st, 1916. 25 head shorthorns, 7 males, at "Locust" on D. U. R. between Almont & Imley City. **WARNER BROS. Almont, Mich.**

**Two Shorthorn** Bulls old enough for service. Golden Wyandotte Cockerels. Collie puppies. **S. G. BELCHER, R. No. 5, Hudson, Michigan.**

**Shorthorns** Herd bull, Bright Sultan roan 4 yrs. no fault, am retaining his heifers also one roan ready for service. W. B. McQuillan, Howell, Mich.

**FOR SALE**—18 Reg. Short Horn Bulls by Maxwalton Monarch 2nd, a son of Avondale, from 2 to 13 mos. old. John Schmidt, Reed City, R. No. 5, Michigan.

**3 Choice Shorthorn Bulls For Sale**  
H. B. PETERS, Carland, Mich.

**Shorthorns**—One yearling bull, one 6 mos. old, one heifer 7 mos. old. **Wm. D. McMullen, R. No. 1, Adrian, Mich.**

**DAIRY** Bred Shorthorns of best Bates strains. 1 Two extra fine yearling heifers for sale. Price \$200.00 each, registered. J. B. Hummel, Mason, Michigan.

**Polled** Durhams for sale, 8 young cows and heifers bred, 18 mo. to 5 years. Prices right. Write for them. **L. C. KELLY, Plymouth, Michigan**

**HOGS.**

TAKEN FROM LIFE  
**Raisee Chester White Hogs**  
Like This  
(CALLED BY SOME O. I. C. S.)  
Write for my plan  
"How to Make Money From Hogs"

I have started thousands of breeders on the road to success. I have a very large and fine herd. Every one an early developer, ready for market at six months old. I want to place one hog in each community to advertise my herd.  
**G. S. BENJAMIN R. No. 10, Portland, Michigan**

**Royalton Bred Berkshires**—Fine October pigs both sexes, sired by Royalton Emperor, registered with papers at fair prices. Write to D. F. Valentine, Supt., Temperance, Michigan.

### SWIGARTDALE FARM BREEDERS OF

**HOLSTEINS AND BERKSHIRES**  
Stock for sale at all times. Berkshires of unsurpassed quality and breeding, at reasonable prices. A choice bull calf, nicely marked, five months old, sire's dam with record of over 27 pounds. Dam of calf a grand daughter of Hengerveld De Kol. Price \$50.00.

**Swigartdale Farm, Petersburg, Mich.**

**Berkshires** of best breeding, of various ages, either sex, all registered stock, no akin, special reduced price. Write your wants quick. Mitchell's Lakeside Farms, R. 2, Bloomingdale, Mich.

**REG. Berkshire** sows due to farrow in April. Gilts \$18, Yearlings \$20. Mature sows \$30. All guaranteed. **B. B. REAVEY, Akron, Michigan.**

**Berkshires** I have one nice fall Gilt to go at once not bred, and 2 sows bred to farrow in April and May. A. A. Pattullo, Deckerville, Mich.

**Chester Whites** Bred sows and Fall pigs for sale also 9 months Holstein Bull. **F. W. Alexander, Vassar, Michigan.**

**Capitol Herd D. J. Swine.** Young sows bred, young boars, pigs both sex. Express prepaid. **J. H. BANGHART, Lansing, Mich.**

**Chester Whites:** Long type prolific kind. Orders booked for spring pigs. Write your wants. Meadow View Stock Farm, R. 5, Holland, Mich.

**Our Duroc Jerseys** comprising the greatest blood lines. The Professor, Kant Again, Ohio Chief, Good E. Nuff, Orion, Perfection, Ira D. Jack, Pilot Wonder, both sex. Prices reasonable. Send for pedigrees. **THE JENNING'S FARMS, R. 1, Bailey, Michigan.**

**DUROC JERSEY BOARS** Fall pigs, pairs and trios not akin. **W. C. TAYLOR, Milan, Michigan.**

**Duroc Jerseys**—Fall and spring pigs either sex, from choice strains. **S. C. STAHLMAN, CHERRY LAWN FARM, Shepherd, Michigan.**

**J. W. KEENEY, Erie, Mich.** Gilts for April Farrow. Breeder of Duroc Swine D. M. & T. local from Monroe or Toledo, Keeney Stop.

**DUROC JERSEY** tried sows and spring gilts bred to E. D's. Defender Col. No. 72975. Inspection invited. E. D. Heydenberg, Wayland, Mich.

**Six June Gilts Bred for June Farrow.** Price \$25.00. Weight 160 lbs. to 180 lbs. **H. G. Keester, R. No. 5, Cassopolis, Mich.**

**DUROC** Jerseys, Yearling Sows & gilts bred for Apr. farrow to a son of Orion Cherry King the greatest Boar of his breed. Also fall pigs either sex. F. J. Drott, R. 1, Monroe, Mich.

**Duroc** Jerseys for sale—a few choice fall pigs of either sex. Fancy Buff Rock cockerels. **JOHN MCNICOLL, Station A, Route 4, Bay City, Mich.**

**Duroc Jersey**—Sept. pigs either sex & Holstein bull calves & 2 Registered Holstein cows. **E. H. MORRIS, MONROE, MICH.**

**DUROC JERSEYS** Boars and sows all sold. Some good fall pigs either sex for sale. **Wm. W. Kennedy, R. 3, Grass Lake, Mich.**

**DUROC JERSEYS**—A few bred gilts for sale. **Carey U. Edmonds, Hastings, Michigan.**

**Heavy Boned Durocs**—A fine bunch of Bred sows and fall pigs for sale. **M. A. BRAY, OKEMOS, (Ingham Co.) Mich.**

**Breeders' Directory—Continued on page 375.**









# United States, Tread 'Usco' Tires

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