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Barley Diseases in Michigan

THE spring of 1918 saw acres of wheat in Michigan in poor condition following a hard winter. Many farmers plowed and replanted with spring wheat, but the banner crop for sowing in these refitted fields was barley.

Up to 1918, Michigan could hardly be said to have an interest in barley. Wisconsin and Minnesota had the acreage and Michigan, aside from an occasional five acres or so on the occasional farm was content with her other crops. Then the impending fate of the brewery was in the air and no one wished to predict to what point the demand for barley would fall; but the war seems to have changed everything. Farmers who had not grown barley since they had toiled on their father's place put in a crop and became interested in what is surely a banner forage and feed crop.

The first thing that confronted farmers and county agents in 1918 was the seed. Michigan had never developed an extensive business in pedigreed barley comparable to what had been done with wheat, rye or oats. There were Michigan selections, but for the most part these were limited in extent. Wisconsin, on the other hand, had specialized in barley selections and seed of the famous Wisconsin strains was available in carload lots. To these sources the Michigan seedsmen and county agents turned. This history plays an important part in the barley disease story.

Barley is a crop which has its own smut diseases—both a covered and a loose smut, such as wheat has. The life histories of these smuts is comparable to that of wheat diseases in that the covered barley smut is brought about by seed-borne infection which therefore is controlled by seed treatment, while the loose smut of barley, like that of wheat, is caused by blossom infection and hence is not controlled by ordinary formaldehyde handling.

Of the two barley smuts, the covered smut is the most serious menace to the growing crop. The federal survey of grain fields made last year showed that the average barley field had three per cent of covered smut, while fields of five to ten per cent were not uncommon.

Item one, therefore, of barley growing is to prevent the covered smut by appropriate treatment.

In Wisconsin, for some years, another disease has been rife which has caused the gravest concern to all engaged in handling the crop. This disease is barley stripe and it is well described by its name. Affected plants are stunted and bear leaves streaked with pale stripes running the long way of the blade. A badly affected plant looks like the ribbon grass that used to be grown in the gardens. A plant with the stripe disease produces only a

By Prof. G. H. Coons of the M. A. C.

blasted head, but as one farmer said, "not a blasted kernel!"

This disease is what is known as a systematic disease. In other words, it behaves like the smut disease behaves, starting with the seedling and breaking out in its successive attacks on one part after another of the growing plant.

The cause of this disease is a fungus which fruits abundantly on the diseased parts. The fruiting bodies of the

fungus, called spores, are blown by the wind and carried to sound grain that is developing. The fine, dust-like spores are caught in the hulls and perhaps some spores actually sprout and enter the kernels. These spores insure the fungus being carried over winter with the seed.

When seed thus contaminated is planted, the fungus parasitizes the young seedling and becomes evident with the first leaves put out by the

plant. These are streaked and yellowed and soon die. Leaf after leaf succumbs as the parasite grows through the plant. This story is repeated throughout the summer wherever the fungus gets to a susceptible part of a barley plant.

Each dead leaf becomes the source of thousands of spores—the shredded, dried-up parts becoming practically gray with the fungus growths. Thus the fungus insures its propagation.

This life history has its meaning to the farmer. It means that the disease which is present in one or two per cent quantities one year will be present in five or six per cent quantities next year, while on the second succeeding year the disease may take one-quarter or more of the second crop.

Of course, the amount of infection is dependent on conditions at time of spore spread, and it must not be overlooked that weather conditions determine whether spores from the first few plants which sow the disease in the field will attack the healthy barley plants and inaugurate the disease in them or not. Wet seasons have their influence on this crop as on others, but this parasite is so pernicious that even in seasons of comparative drought it may cause high damage.

On old barley stubble, the fungus produces its winter form and this stage too, can play its role in producing disease. But with intelligent rotation systems, the seed-borne infection is the serious phase. The barley stripe is restricted in its attack to the barley.

It was stated that the Wisconsin barley importations affected the Michigan barley situation in 1918. This came about from the fact that both smut and stripe were rife in Wisconsin barley fields, such as furnished seed for Michigan plantings.

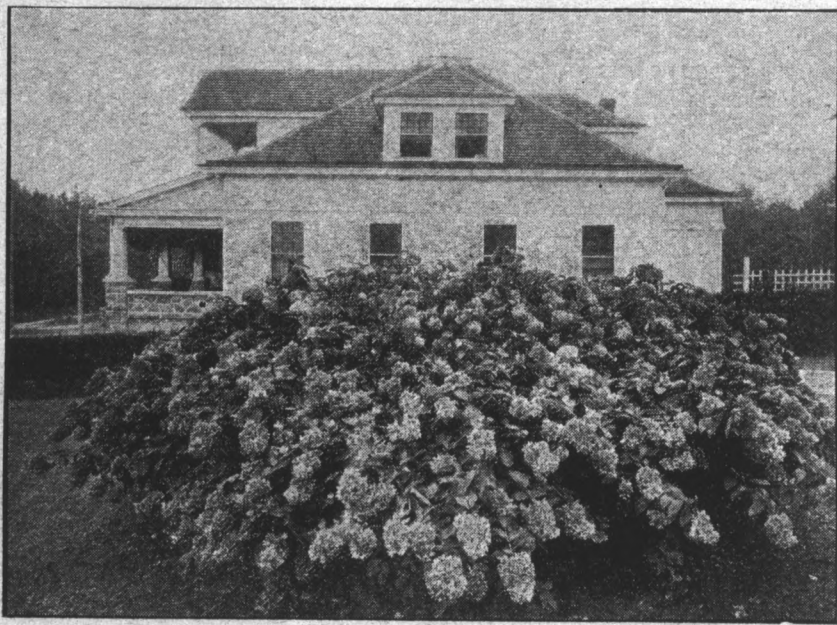
The stripe disease seems to have increased under the intensive conditions of barley growing in that state. Michigan seed lots grown here for so long that facts as to origin were lost, seemed free from the disease, whereas barley originating from the Wisconsin strains brought in within recent years were almost uniformly found slightly diseased.

This does not mean that we should have discriminated against Wisconsin barley at the time of emergency. It rather is a warning of what is ahead of growers of the state as they continue this crop. It is also a warning that special steps for control are necessary.

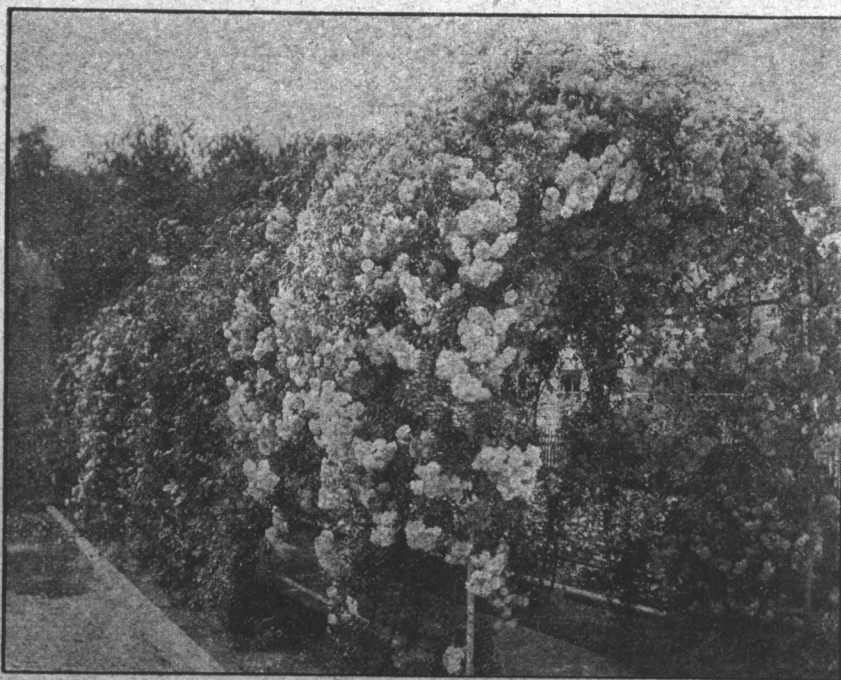
It is first of all necessary that farmers recognize this disease. County agents have been informed about it for two or three years now, and have interested all farmers with whom they have inspected barley fields. The county agent is the local plant doctor who is called to the farmer's place to diagnose and prescribe for his sick plants.

Furthermore, in every county the county men have used—along with others—(Continued on page 668).

The Real Cost Was Small



But This Caused Passers-by to Stop



And We Enjoyed the Rose Arbor Immensely

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DETROIT, APRIL 26, 1919



CURRENT COMMENT

The Original Package Idea

AS a people we have adopted the original package idea. Most of us, whether we live in the crowded city or on the most remote new farm, consume considerable quantities of goods purchased in original packages, put up, as the case may be, by the grower or the manufacturer of the food stuffs. The fixing of this habit with the American public is doubtless due to a number of causes, not the least of which is the advertising value of the original package. In most cases the original sealed package has come to have a distinct meaning so far as the quality of the goods contained is concerned. The packers of goods of all kinds appreciate this advertising value and take every precaution to insure that the contents of every package will be of uniform high quality.

While this habit is perhaps an expensive one for the American public, yet it is one which is firmly fixed and which is capable of still further extension; in fact, the idea is constantly being extended to more and more food products. At a recent meeting of bean growers and dealers, the possibility of utilizing the original package as a means of promoting a wider distribution of Michigan beans of high quality was discussed. We believe that the idea will bear further discussion by bean growers and bean handlers. Michigan has a just and enviable reputation for the production of high quality beans, and the packing of the Michigan product used for domestic distribution in small packages, of say ten and twenty pounds, would insure that the beans would in the majority of cases, reach the consumer in the original package. The average housewife would buy a ten-pound sack of beans rather than a pound or two at a time if they could be secured in the original package, and the cost of distribution on a ten-pound sack would be little, if any, greater than the cost of distribution on a quart where sold in bulk by measure. A standard Michigan trade-marked package of this kind would aid

materially in building up a demand for Michigan beans for domestic consumption throughout the country. It would have an advertising value which is well worthy of the careful consideration of both growers and dealers. Certainly this idea is one which is well worthy of further thought and discussion.

The 1919 Bean Acreage

THE bean crop of 1919 is now in the making so far as the acreage to be planted is concerned. The farmers of Michigan are determining this question individually, notwithstanding the fact that they have been advised by a publication which has assumed to do their thinking for them on this point to reduce their acreage one-fifth, to plant eight acres where they planted ten last year, apparently without regard to other considerations.

Unquestionably the weather during the next few weeks will be a large factor in determining the acreage which will be planted to beans in Michigan this year. In case the heavy rains of the past weeks should be followed by similar weather in May, many farmers will find themselves belated in the planting of corn, and will be obliged to substitute some other crop, in which case beans may serve an excellent purpose as a catch crop. Likewise, clover fields which had been intended for hay may not develop sufficiently well to warrant leaving them for this purpose, and conditions may favor their use for the bean crop at the last moment.

At any rate, a horizontal reduction in acreage will not appeal to the bean growers of the state as practical. The man who has a ten-acre field for beans does not care to divide the field and devote a small portion of it to any other crop. This would not be profitable, nor is it necessary or logical. Bean growing, like other departments of farming, has come to be a recognized specialty in localities where it is most successful and remunerative. During the past generation there has been a marked change in the distribution of the bean crop in the older agricultural sections. Formerly the bulk of the beans were grown on the sandy and gravelly soils, while the heavier lands of the state were more generally devoted to wheat and grain farming. Any land that was not entirely run out was supposed to be capable of producing "white beans." But time demon-

strated that these soils did not produce profitable crops of beans, while the better wheat soils of the state were found to give much better average yields. As a result bean growing has become a specialty in these localities and waned in popularity on the more open soils.

With beans, as with every other cash crop grown on Michigan farms, the patriotic urge for food production has changed the general practice to a very marked degree. Farmers planted beans during the past two years who had not previously grown beans to any extent for years, partly as a patriotic duty from their point of view. As a result much land was planted to beans which was not well adapted to nor in proper condition for the bean crop, and beans were planted upon many farms where the crop did not well fit into the general plan of farming, all of which contributed to some extent to low average yields and consequent poor financial returns.

The determination of the acreage to be planted to beans on any farm should not be based upon the acreage planted last year, but rather upon the financial returns from last year's crop and from previous crops. On soils where beans give good yields, and on farms where the bean crop finds a satisfactory place in the general scheme of production, where the equipment has been provided for handling the crop economically, and where the grower has acquired skill in its production, there the full normal acreage of beans should be grown this year and every other year. But on the farms where the crop gives doubtful or negative results, and where some other product offers promise of a better return or better fits into the general scheme of farming followed, the bean crop may properly be abandoned.

Approached from the standpoint of supply and demand, it is indeed an amazing assumption of wisdom for any man to undertake to determine what conditions may be next year, either in the matter of supply or demand. One thing we do know, however, that Michigan has a just and enviable reputation for the quality of its beans. Many Michigan farmers are peculiarly equipped to produce the crop, and so long as its production affords a reasonable prospect of profit, Michigan farmers will and should continue to grow beans and in this connection every farmer is the best judge in his own case as to whether he should produce beans, and if so how large an acreage. This point

may more properly be determined by the careful balancing of economic conditions than by the guess of any ambitious prophet of future conditions.

Over the Top

IN previous Liberty Loan drives Michigan communities and Michigan as a whole have made an enviable record in quickly subscribing their allotted quota to the popular loan. In many cases rural communities have completed their quota much more quickly than have the larger cities. In the present drive the State's Metropolis secured an over-subscription on the first day of the drive, an eight-hour campaign resulting in the total subscription of \$63,159,000 or nearly eight million dollars more than the city's quota. The bulk of this large amount was taken by the banks and prominent industrial firms. The balance of the campaign will be devoted to a wider distribution of the loan in which every person desiring a share in the investment may be given an opportunity to subscribe.

This record shows a commendable spirit among business men which should inspire the public at large to back up the loan and complete the subscription quickly. Our wealth was pledged to the successful consummation of the war, and that pledge can only be discharged by the purchase of the bonds now being offered by the government to complete payment of the necessary costs. The above record for the financial center in the state shows that financiers and business men look upon the present offering of short-term four and three-quarters per cent bonds as an excellent investment. They will prove the same to country people who have available funds for investment.

Symptoms of Latent Bolshevism

THERE occurred in Detroit last Sunday a demonstration which is worthy of more than passing note. The occasion was an announced address by an industrial expert on anti-Bolshevism. The meeting was attended by some four thousand persons, seventy-five per cent of whom were said to have been made up of the radical element, who proceeded to hiss the speaker from the beginning and finally broke up the meeting by this disorderly conduct, which made it impossible for the speaker to deliver his address.

This demonstration illustrates the fact that there is an undesirable degree of latent bolshevism in our own midst, as the general strike and attempted revolution in Seattle some weeks ago illustrated that active Bolshevik propaganda is being conducted in democratic America. Our people are wont to be good natured and pass by, with only incidental comment, an exhibition of this kind so long as it stops short of actual riot or serious interference with industrial activity, but the Seattle incident, in which the strong arm of city officials, backed by government troops, interfered after the wheels of industry had been stopped for five days, fully illustrated that when grave emergency arises the American public is equal to the job. It is however, a serious disappointment to learn that thousands of people in our midst are so lax in an appreciation of the fundamental principles of democracy as to engage in a disorderly demonstration of this kind. In a country where universal suffrage gives the majority absolute rule through the ballot, there is no occasion for anarchistic demonstrations or methods. The mere fact that these are occasionally in evidence, is the greater reason why the farmers of the country, who have been the mainstay of the nation in every crisis, should maintain a clear and broad vision during the trying reconstruction period through which we are passing.

Arbor Day Proclamation

THE observance of Arbor Day dates back more than half a century, and from the beginning it has had a civic motive and a patriotic association. This year, more than ever before, we have reason to give the day a patriotic setting. The great world war is over. Our soldiers and sailors and marines most nobly bore their part in the struggle. Many of them made the supreme sacrifice. Costly monuments will arise to commemorate their deeds, but meanwhile we can perpetuate their memories in familiar places. It has been happily suggested that we should adorn our yards, our waysides and our parks with young trees, each named for some one of Michigan's fallen sons.

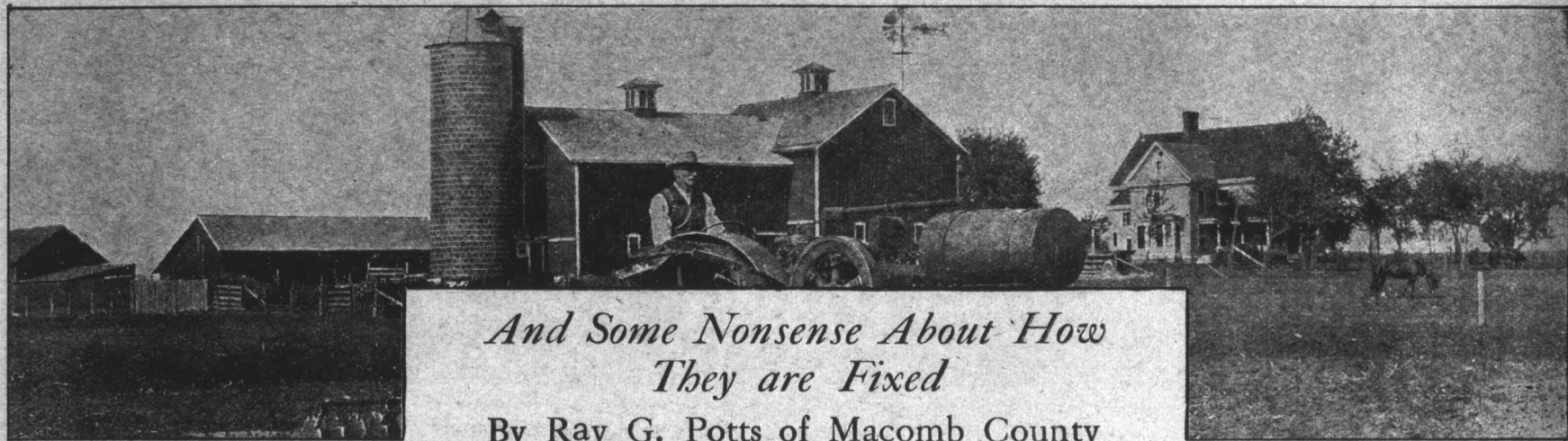
It has been further suggested that in every city and village and township a Victory Elm should be planted to commemorate the great triumph of Freedom and Democracy.

It is fitting, too, that I should at this time call attention to the fact that Act number Fifty-nine of the Public Acts of 1919 makes it unlawful for anyone to keep upon his premises mahonia bushes, or any other variety of barberry bush which harbors and spreads the black rust of wheat and other grains. I, therefore, recommend that these noxious shrubs be dug up and destroyed and their places given to harmless ornamental shrubs.

Therefore, I, Albert E. Sleeper, Governor of the State of Michigan, do hereby designate and set aside Friday, May second, 1919, as Arbor Day, and I request that trees be planted, as indicated above, in memory of our heroic dead.

I particularly request, too, that in all Michigan schools appropriate Arbor Day exercises be held, following, so far as may be practicable, the community program outlined by Mrs. Dora H. Stockman in Moderator-Topics of April 10, 1919.

Common Sense About Milk Prices



And Some Nonsense About How They are Fixed

By Ray G. Potts of Macomb County

I MAKE these claims for the dairy farmers of the country: That they are not getting a square deal in the matter of fixing the price of milk in the cities; that they have never had a square deal; that the deal they are getting is unbusiness-like.

It is time the people of the country, both milk producers and milk consumers, had the truth about the business; for truth is the breath of life to democratic government. Such vital problems as the proper growth and health of children, complications with union labor, the prosperity of agriculture and the stabilizing of the one great branch of farming that is calculated to maintain permanent production of food crops are too serious problems to be juggled by price-fixing bodies whose function has been to fix an arbitrary price, usually based upon what the trade would stand and not upon the cost of production, and tell the farmers to go home and milk the cows.

How Prices Are Fixed.

Milk prices have invariably been fixed under the pretense of giving succor to suffering humanity, but nevertheless allowing sufficient spread to permit grasping corporations to meet maturing obligations and pay good dividends on the most inefficiently managed business in America today—the handling and distributing of milk.

The farmer who would tie his cows in fence corners and to trees about his pastures and fields, set his milk can in the center of his one hundred and fifty-acre farm, do his milking in a quart cup, walking to and from the can to empty the cup every time it was full of milk, would promptly be branded as a dangerous lunatic, placed in a padded cell and kept under double guard. Yet the farmer and the consumer are called upon to support a multitude of high-class lunatics who are applying these identical principles to their end of the milk business.

What I am trying to make clear is the fact that such misinformed and misled, though well-meaning, price-fixing bodies are starving city babies and driving milk producers out of a legitimate business, or toward a union with power not only greater than any socialistic organization ever had but more so because it will control the great necessity of life. And there are a few well-posted, sane and sane agricultural leaders who have gone so far as to say that the farmer is being coerced into a mood so dangerous as to menace our future food supply. That is a condition we must avoid.

The One-Sided Argument.

The innate selfishness of human nature was never more clearly typified than in the present effort to fix milk prices, simply because the farmers are asking a living price. Here you have it. A spread of from seven to eight cents per quart for the city distributors and a demand to the farmer to go home and milk the cows. It is a mar-

velous spectacle to the producer. Marvelous, that any price-fixing body should grant that a corporation is entitled to its big salaries, to interest on its investment, and even on good-will and water, but should yell "profiteer and baby-killer" the minute the producer tries to pay himself a salary of \$50 a month and three per cent interest on his investment, and his wife the sole assistant occupying all the swivel chair; no salary positions of mother, of family, nurse foreman, cook foreman, seamstress foreman, and general superintendent and manager of domestic economy, all of which must necessarily go with the milk-producing business.

Some Classic Examples.

One of the classic examples of economic waste and inefficiency is the one brought out by an investigation in an eastern city. The system in use there is the system still in use in most cities. There has been several consolidations of companies and routes, but the example is typical. During the investigation comparisons were made to show what might be accomplished under a system of delivery that would cut out duplications. It was found that ninety men could do the work that was being done by three hundred. It was further found that fifty horses and twenty-five wagons could replace 380 horses and 305 wagons. The most striking saving suggested was in the number of miles traveled to deliver the milk. The actual mileage traveled by wagons was 2,509; the new system cut it to 300 miles and reduced the daily cost of delivery from \$2,000 to \$600. Such a saving in horses and wagons means a big reduction in investment. If these wastes were cut out better milk could be supplied to the consumers at two cents less a quart.

In Washington, D. C., there are 510 miles of streets. The Dairy Division of the United States Department of Agriculture found that 250 milk wagons traveled 4,775 miles to deliver the

city's milk supply. Some wagons cover thirty miles and some only ten. Considering the miles traveled those 250 wagons might have supplied several cities the size of Washington. It looks as if the problem would finally be solved without the government, city or other kind, interfering; but it's a slow process, this killing off of the inefficient dealers. The consumers are getting peevish about a new price for milk every time the moon changes, and something must be done to stabilize the consumption and cool the consumer's feverish brow.

The progressive city distributor is thoroughly convinced of the need of improvement in his system of delivery. But when such a thing as a new system that would enable one delivery company to handle all of the milk is suggested he rears up and shouts that this is a free country, where every son of democracy should have opportunity to go into the business that he likes best and conduct it as he sees fit. He says that it is not a free country that gives business to one concern and takes it away from several and lets the city do it.

Sauce for the Goose is Sauce for the Gander.

That is just the point that I want to bring out, for what is democracy for the distributor is democracy for the producer. If the prices of milk are fixed for the producer, on a basis of cost of production figures furnished by the best-posted dairy experts in the country, why, then, in the name of Justice, should not cost distribution figures be furnished by equally well-posted experts; instead of accepting the reports of expert accountants, who have no knowledge, whatever, of the milk distributing business?

There is no use in patting ourselves on the back and boasting about what our parlor conservatism and diplomacy has accomplished in stabilizing milk prices in Michigan, for we have merely

blown the froth off the surface of the great tidal wave that is coming. The monthly compromises in prices may mean much or little, depending upon the manner in which the adjustments are made in the immediate future. In the meantime the farmers are becoming dissatisfied with the uncertainties connected with the dairy business.

I mention these things merely to show the real attitude of the farmer in the matter. The injustice of fixing the prices of his milk at a figure that will support such inefficiencies in the city distribution is readily apparent. It is merely a question of how long the milk producers propose to submit to such practices and produce.

The Boomerang of High Prices.

Merely increasing the price of milk to the consumer has resulted in holding prices to a fair level, compared with the prices in some of the other large cities, but high prices to city consumers merely result in a big surplus; and this means a loss in two ways, i. e., an accumulation of milk to be disposed of at a discount, and a decreased demand for milk from consumers.

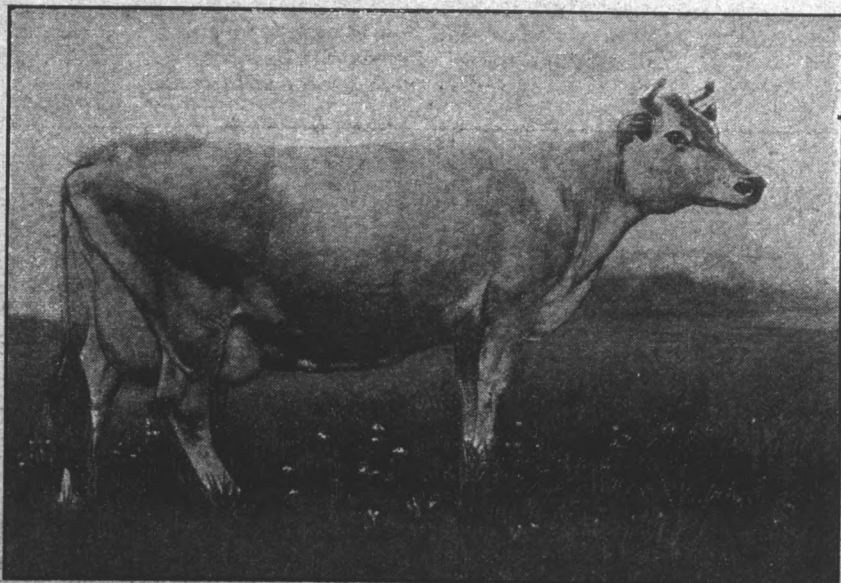
The fundamental problem confronting the milk-producing industry today is that of breaking down the wall of capitalistic greed, inefficiencies in distribution and political dealings standing between the man who milks the cows and the consumer who needs his products.

I am not very keen on high-finance figures and long rignaroles used by expert accountants in getting at basic figures; but I do know that in some cities milk producers have been the victims of unjust price-fixing that has played into the pockets of retail dealers' trusts, milk dealers' pools and grafting boards' of health to such an extent that profits have been knocked into a cocked hat and improvements ceased until sanitation is impossible. The absurd waste of endless deliveries and favoritism of certain companies shown by boards' of health has long been a matter of comment.

Go Back of the Books.

It is not in the least surprising that the books of the big delivery companies should show that it costs so much to get the milk to the homes of consumers. In the final analysis what do these figures amount to? Any fair-minded person realizes the folly of expending money to hire experts to audit the books of these concerns unless the work can be conducted with a thoroughness.

To get at the real truth of the matter we must go back of the books of the distributors. This much must be done to make the figures reliable as to what might have been done under proper management and avoiding any duplication of routes. The farmer's cost of production figures are given critical examination and he is given the third degree when he undertakes to explain



Sophie 19th, of Hood Farm; 5,787 Pounds of Butter-fat in Eight Years.

them to the court. But the city distributor is encouraged to conduct his business loosely by being paid a premium on his inefficiency. Anything he can do to add to the cost of distribution is promptly allowed him by the price-fixing body. Why make sheep of the distributors and goats of the producers?

The Professor Sees Things.

Another matter upon which the farmers are getting touchy is that of having certain, well-meaning doctors of agriculture rave and preach about their prosperity. While writing this, a letter from a farmer in Monroe county, who is milking thirty-four cows, is left at my home. Among some of the real pleasant things he has to say are: "I am getting pretty sick of losing money in the milk business and having our professors of economics rub it into us by telling the world how prosperous and happy we are. Does the good professor realize that he is living in a big, live world, where things are moving rapidly; and that prices in other states for milk have advanced as much as in Michigan. Why all of his eloquence about our great milk monopoly? If some of these harbingers of prosperity, preachers of eumoiety and professors of economy would settle down to facts and work out some constructive plan that would take care of the milk surplus, at about the time of the moon the milk commission sits to fix prices for the next month, rather than sit straddle the fence and chirp about our prosperous condition and kid us about our happiness they would command a lot more respect among the farmers. We, undoubtedly, need more professors of economics in the milk business; we never were strong on economics."

Both milk producers and milk consumers owe a debt of gratitude to the members of the milk commission for the able manner in which they handled a perplexing problem during a critical time. But the producers believe that now, the war is over, an effort should be made to go back of the accounts now in the hands of the commission and determine how much distribution of milk should cost under efficient management. Without such figures to use in presenting their case to the distributors the commission is helpless to help the producers.

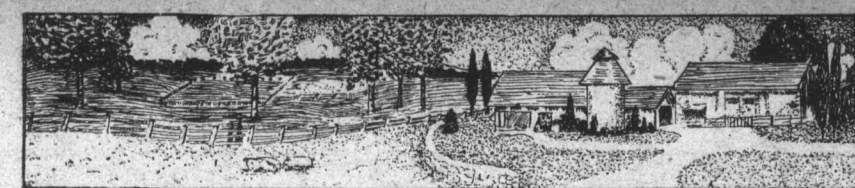
The Philadelphia Figures Good.

Probably, the most reliable figures available today that could easily be applied to Detroit are those worked out by producers and distributors in the Philadelphia region. Here the people are getting milk at lower prices and with less friction than in any large city in America, and the producers are sharing in the prosperity; being paid 9.5 cents a quart, said to be the highest price paid to producers for milk in any large city.

How have such results been accomplished? Simply by attacking the problem from the right angle and putting the delivery business on a more efficient basis. The milk dealers in Philadelphia get a spread of 4.5 cents per quart, said to be the lowest of any large city in America. And what is more, they are making money on that margin. The consumer pays only thirteen and fourteen cents a quart and uses a lot of milk per capita because it is cheap and because he is insured of its quality. What an example for some of our other cities to pattern after.

Drivers Get Good Wages, Too.

Some of our Detroit distributors will explain that Philadelphia milk dealers do not pay their drivers good wages and that labor costs more here than in the east. Well, the records show that the Philadelphia drivers get



from \$30 to \$90 per week. So you see this argument does not hold good.

One of the first problems worked out in Philadelphia was that of getting at delivery costs. The books of the distributors were audited and they were required to file monthly reports. If one of the distributors costs raised

trate how the milk routes of the distributors overlapped, and a demand was made for consolidation of routes in order to develop greater efficiency. One hundred per cent efficiency means one wagon to start out with four hundred quarts of milk and one wagon to the street. Delivery companies and

Cost Figures Again

SECRETARY BINGHAM, of the Michigan Farm Bureau, insists that our farmers ought to have at least a satisfactory explanation of why the figures on the cost of production as gathered by Mr. Spillman, of the Department of Agriculture, are withheld from publication. The following reply to his second letter is more encouraging than the evasive answer to his first demand and suggests that officials at Washington are careful to give heed to the requests of the tillers of the soil when these farmers speak through a representative organization.

Washington, April 14, 1919.
MR. C. A. BINGHAM,
Sec'y Michigan Farm Bureau,
Birmingham, Mich.
DEAR SIR:

Your correspondence with Secretary of Agriculture Houston relating to the question of cost production has been turned over to me for consideration. I have been in charge of this office less than two weeks and have been trying to take inventory of the materials on hand. There has been a very considerable amount of work relating to cost of production done in this office and in cooperation with the states of New York, Wisconsin and Minnesota. I am sending you a list of the bulletins which will show you the results of some of the work which has been done. There is some more material in the office which has not been published, but it is not in complete form for publication. Mr. Peck, of the University of Minnesota, who has specialized in cost or production studies for many years has been employed by the Department of Agriculture to give special attention to this subject. He has arrived and is now going over the material. All of the material which is on hand will be examined carefully with a view to making every use possible of it. In the meantime I

shall ask you to make such use as you can of the materials I am sending you.

I am glad to know of your interest in this subject. The securing of cost data requires the cooperation of farmers who are willing to keep records and turn over their cost figures to our investigators. Men in your position can do a very great deal to interest the farmers in this cooperative undertaking. I hope it will be possible to carry on some investigations in your state in cooperation with your experiment station. In making this possible you can be exceedingly helpful. The amount of cost of production work which can be carried on depends upon the amount of funds we have available. The securing of the facts requires not only the cooperation of the farmer, but a very considerable amount of time of expert accountants.

I am sure that you will be able to cooperate with us in preparing the way for the prosecution of this work, and I assure you that as rapidly as we have material which is of use to the farmer, that material will be put into their hands. Very truly yours,

H. C. TAYLOR,

Chief of Farm Management Department.

ness on a basis of economy, the same as the farmers are expected to do, it is safe to say that from one and one-half to two cents a quart could be saved on the retail price of milk, and the consumption per capita very materially increased.

It Would Take Some Time to Do It.

In justice to the milk dealers it would only be fair that they should be given sufficient time to map out the city, readjust their business and perfect the new system. Some well-meaning experts will claim that certain companies or individuals furnish better milk than others. This is not so. In a city where proper attention is given to the milk supply by the board of health there should be little difference in the quality of any general market milk that is fit for human consumption. Pasteurization, clarification and cooling have practically standardized the milk supply of every large American city.

What Farmers Should Do.

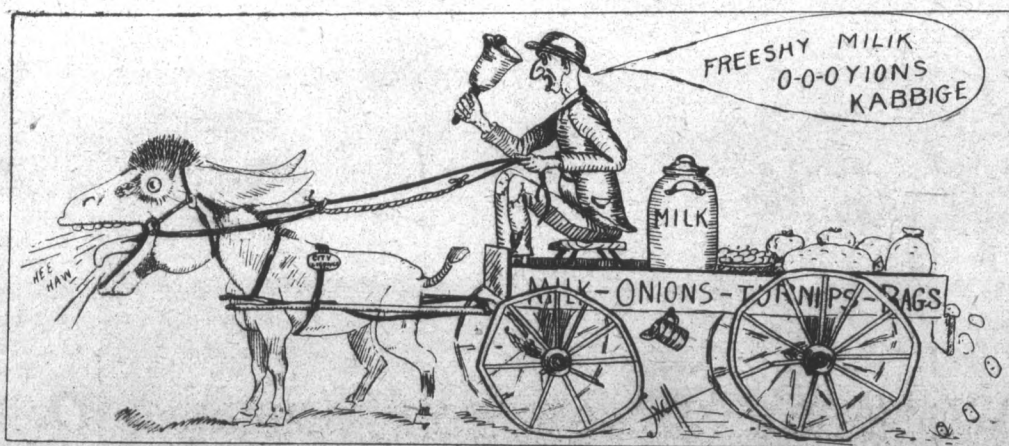
In an interview with an official of one of the Detroit distributors the writer ventured to mention the fact that some of the most extensive milk producers in proximity to the city were going out of the business or gradually cutting down their production. In reply the official said: "It is a good thing for the business, for we cannot afford to pay for milk produced on farms where it is the main product, and where all the feed for the cows is charged up against it. Let these farmers grow other crops to help pay for their feed. We can go out into the state and buy cheaper milk as fast as production falls off in our present territory."

What Distributors Might Do.

"Very well," I replied, "now we are getting down to brass tacks. Suppose we apply the same line of reasoning to your end of the business, junk all of your fine wagons and property and knock the profits out of your business by removing the board of health requirements and putting in a supply of milk at all the little grocery stores. You surely couldn't object to a few doses of your own remedy. If you buy inferior milk made on farms where a high degree of sanitation is impossible, you surely are jeopardizing the quality of the supply delivered to your trade. Of course, the various processes of manipulation you employ may succeed in getting it by the health officials, but you know you would not be furnishing pure and uncontaminated milk to your customers. If we are going to demand proper sanitation at only one end of the business, why not demand it at the end nearest to the cow."

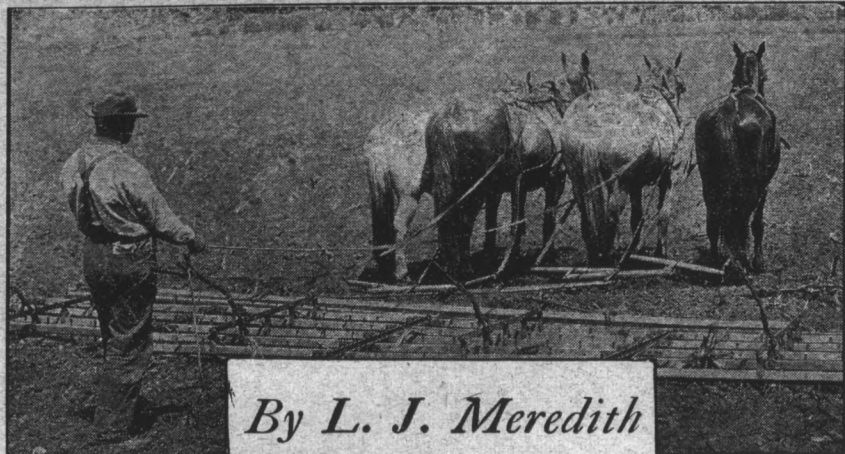
"On the other hand, if your profits are too small, on account of an expensive delivery system, you might put on a load of produce, onions and garlic and the like, and peddle it along with your milk. That would be a good thing for the business, for the farmers and consumers cannot afford to pay for milk delivered in such an expensive way, where the milk is all you haul and the cost of delivery is charged up to them. What you milk dealers want to do is to extend your milk routes and do a general trucking business and develop new side lines that will pay your expenses. Your customers, as soon as your supply gets so rotten they can't stand it any longer, can go into the milk producing business as some Detroit distributors have done, where their cannibal cows produce almost five and one-half quarts per head daily at a cost of six dollars plus per cwt."

"Holy cats," replied friend milk dealer, "onions and milk don't mix."



The Sympathetic Might Think that Dealers May be Forced to Add Side Lines

Fitting Crops to Farms



By L. J. Meredith

THE effect of climate on the corn crop is readily understood when one studies the results reported by different stations in planting seed from different localities. In nearly every station experiment the highest yields were obtained from seed grown in the same latitude as that in which the experiment was conducted. This indicates that moving corn north and south, or even east and west, has a marked influence on the yield. The lesson from this is that seed should be home-grown, and grown not only in the same state, but in the same district. Results of variety tests indicate that the yield and type of corn are more affected by climatic conditions than other grain crops. The failure of the 1917 corn crop to mature sufficiently to insure enough good seed for planting last year's crop and the planting of southern seed, should prompt Michigan farmers to get in touch with the Agricultural College at East Lansing, or with their county agents, to devise means of obtaining enough good seed corn from early maturing varieties for this spring's planting. There is sure to be a shortage of good seed corn from early maturing varieties, so that those who delay buying are only borrowing trouble and disappointment in the 1919 yield of sound corn.

In some instances where dairy farmers prefer a large yield of silage and are not particular that it contains very much grain, an enormous crop may be secured from Eureka and Cuban Giant or some other large-growing variety. These large-growing varieties are much more adaptable to low, rich soils that are capable of producing an immense growth of forage during a short growing season. As a general rule, however, it pays the dairy farmer to choose a variety of corn for silage that will produce a maximum quantity of mature ears and forage before frost comes. Many good dairy farmers save vast sums of money by growing better silage corn in place of buying expensive grain feeds to balance up poor roughage rations.

One of the reasons why so many farmers fail to secure good stands of red clover is that we have no special varieties suited to local conditions of soil and climate. It seems strange that so many of the experiment stations have neglected to develop new and improved varieties of red clover. Red clover is naturally adapted to loamy and gravelly soils, and alsike clover to heavy and wet clay soils. On fields containing different soil types it is preferable to sow a certain amount of both, bearing in mind that one quart of alsike contains as many seeds as three quarts of red clover, so that in sowing six quarts of red clover and two quarts of alsike we will be distributing about the same number of seeds of each variety to the acre.

Probably the reason why many farmers have had disappointing experiences in growing alfalfa is because they have neglected to purchase varieties of seed adapted to soil and climatic conditions.

Recent experiments seem to indicate that varieties that have a large percentage of branched-rooted plants with large, decidedly low-set crowns, widely branched and spreading, are more resistant to the effects of freezing and thawing weather. These varieties begin to prepare themselves for the cold weather by making very slow growth late in the fall. By beginning to turn brown and making only slow growth such plants are in a sort of dormant protective condition which makes it possible for them to stand freezing without being frozen to death; besides branched-rooted plants are more resistant to the heaving effect of freezing and thawing weather. In our efforts to grow alfalfa in Michigan it is important that we devote more attention to selecting seed of such varieties that are capable of going through periods of cold weather without injury.

In developing improved varieties of timothy at the Cornell station it was discovered that the seed of some plants will produce plants, some of which will live two years, some three, some four and some ten years—and a few will live just one year. Some of them will produce plants which will give one pound of hay if given opportunity; others will not produce a one hundredth of one pound. Why do farmers sow such mixtures? Simply because they are paying very little attention to seed selection.

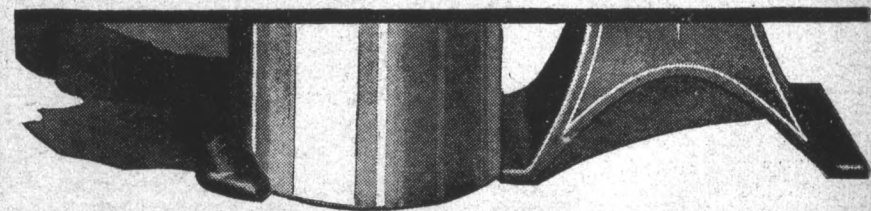
As a result of these twelve years of experimenting with the timothy crop at Cornell they have perfected several varieties of unusual merit. Now the question comes up. How will these high-yielding varieties perform when changed to other districts? Some of the varieties of timothy selected in other states failed to show any particular merit in New York state; they failed to give as large yields as many selections made from fence-rows there. This indicates that in increasing the yield of timothy the crop plants that do the best are those adapted to local conditions of environment.

In selecting suitable varieties of small grains and getting them adapted to local environment it is possible to develop new strains of value and improve the adaptability of the seed crop plants. There are three simple methods of breeding which are practical for farmers in general to undertake. One of these is the selection of the best variations and the propagation from them of improved strains. Second, is the selection of the best yielding plants from a well-known variety to secure a more highly productive strain. Third, selecting large heads for seed.

Secondary problems to which growers should give more study and attention are season of maturity; that of producing early or late varieties, and, in a few instances quality of product. In oats a large, plump seed is important, as otherwise the product will be too light. Again, a white oat always sells better than a dark or mixed oat. While the color of an oat in no way



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MOST any kind of cream separator will do fairly good work the first few months, when it is new.

But if it is a cheaply made or inferior machine, after the first few months your trouble will begin.

And the worst of your experience with such a machine will not be the fact that it wears out quickly or that it runs hard, or that you are piling up repair expense, but that you are losing a lot of butter-fat that is worth 50 to 60 cents a pound.

And that is what you really buy a separator for—to save this valuable butter-fat.

Any time you buy a cream separator—no matter who makes it or what claims are made for it—that has not behind it a long record of satisfactory service, a record known to all, a record that is in itself a guarantee of satisfactory service, you are taking a gamble with all the odds against you.

Why take chances at all when you come to select a machine that may mean so much in increasing the profit from your cows?

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*It is the best cream separator
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Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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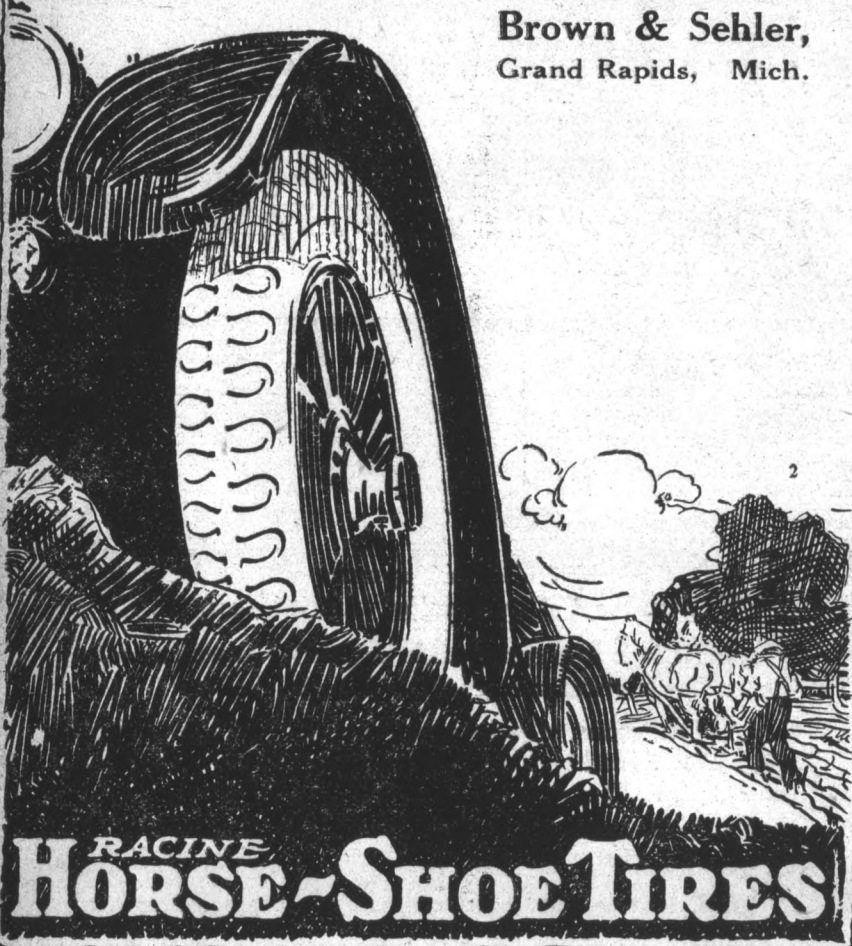
Both of these possibilities have been realized in **HORSE-SHOE TIRES**. They seldom blister.

Those who know tires will see in this feature another reason why it pays to

"Remember the Horse-Shoe Tread"

Guaranteed for 5,000 miles but gives more. See your local dealer or write to

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NORTHERN GROWN SEED CORN

Reid's Yellow Dent; Leaming; Pride of the North; White Cap Yellow Dent and Early Butler. Write for Price List.

THE PAGE-PHILIPPS SEED CO.
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Seed Corn carefully selected; very early white dent also yellow dent; germination over 97%. **CHAS. SCHNEIRLA, B.2, Clinton, Mich.**

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F-R-E-E

map, price and typewritten description of exceptionally well located tracts of clover land in Marinette County. In writing be sure to state what acreage you might want and whether you have any property that would have to be sold before you could purchase land. These special bargain tracts are going fast. Write today. **SKIDMORE LAND CO., 381 Marinette, Wisconsin.**

FOR SALE Farms and grazing land in Oscoda County, Mich. 640 acres, well fenced and watered grazing land, \$7000; 2500 acres unimproved grazing land, \$10 an acre; 80 acre farm, good land, large orchard, small, modern house, fair barn, \$3000. Can be bought in one tract or divided. Also 120 acre farm, partially cleared, log buildings, \$1400. **Box 5426, Michigan Farmer.**

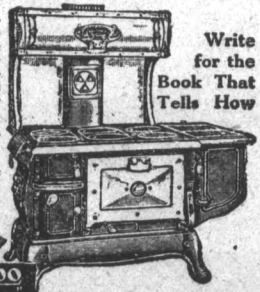
122 acres in Genesee County, Mich. All under cultivation except 10 acres of wood land. No better producing land in state. Just off Dixie highway short distance from Flint. Well drained and fenced. Good house, farm buildings and silo. \$150 per acre, half cash, balance on easy terms. Address **Box E. 426, care of Michigan Farmer, Detroit, Mich.**



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A Kalamazoo Direct to You

I Sell Farms Where biggest crops grow: fruit, grain, alfalfa, dairying. For list write **J. D. S. HANSON, Hart, Mich.**

Rich Michigan Farms. Low prices. Easy terms. **STAFFELD BROTHERS, 15 Merrill Building, Saginaw, Michigan**

WANTED to hear from owner of good farm for sale. State cash price, full particulars. **D. F. Bush, Minneapolis, Minn.**

affects its feeding value so far as we know, nevertheless the market prefers a white oat, and if we get the same yield in a white oat, it is preferable that we use white seed. Another factor is that of determining which varieties are most susceptible to diseases, such as rust and smut. The tendency to ripen early should also receive attention for a variety may shatter so badly as to cause considerable loss.

The work of the field crop experts at the Michigan College of Agriculture in improving the yield and quality of the small grain crops shows what may be accomplished by planting seed adapted to Michigan soil and climatic conditions. Every Michigan farmer who is interested in growing more and better small grain to the acre should make a careful study of the magnificent work these men are doing in breeding and perfecting disease resistant small grain varieties.

In beans there is a well defined adaption of varieties to soil and climatic conditions. On light, sandy or gravelly soils which are underlaid with limestone, the small, white Boston pea bean gives the best results. On rich clay loam, the marrow, either white or red, and the red kidney yield better than the small, white pea bean. On land that is heavy and rather low, either red marrows or red kidneys, are preferable because they are not so apt to be spotted if the weather is catchy and the beans lie out two or three weeks. Most commercial growers plan to change seed often. They seem to think that it does not pay to plant

their own seed. While this is directly opposite to the theory advanced in support of many other farm crops, it is true among bean growers in New York and Michigan who prefer to go to some other districts for their seed.

The adaptability of potato varieties to soil and climate is best explained by studying the conditions in localities where they are grown. In the deep, rich, sandy loam of New Jersey the Giant, a flatfish, round, good-sized potato, with shallow eyes and of fairly good quality, is the favorite among growers. Long Island is famous for its Irish Cobblers. In Michigan, and many other potato-growing districts, Sir Walter Raleigh and several of the Rural types and similar varieties seem better adapted to soil and climate conditions. All of the round varieties are general market favorites and adapted to a wide range of soil and climate conditions. For the early crop the Early Ohio, Early Harvest, Bovee and Early Michigan, all of which thrive best on a rich, loamy soil, are perhaps better adapted to general soil and climatic conditions than some of the more delicate varieties. No list of early potatoes is complete without mentioning the Early Rose. This old standard variety is adapted to a wider range of conditions than any of the modern varieties and from it a number of the popular sub-varieties have been developed. Round potatoes always command the best prices. Red potatoes, excepting some of the early varieties, always sell at a disadvantage in the large city markets.

Of Agricultural Interest

ANTRIM COUNTY SUPERVISORS ARE BOOSTERS.

THE supervisors of Antrim county will send exhibits to all state fairs in the fall of 1919. At their April session the supervisors voted to have their County Agricultural Agent, W. C. Cribbs, select a large exhibit of all farm products of Antrim county and take them to the State Fair at Detroit and the Western Michigan Fair at Grand Rapids. The supervisors believe that Antrim county has the natural soil and climate to be in the front rank as a seed and root crop county as well as fruit and live stock.

They also instructed their county agent to purchase a large camera with one of the best outfits for taking views of every kind of crops and all things of interest about the county for these exhibits.

They will have these views put into pamphlet form with maps of the county for distributing as well as having larger views on display.

The board also voted in favor of putting registered Holsteins on the county farm to build up the live stock of their farm as an example for the farmers of the county. This is one step in the pure-bred live stock campaign which is on in the county.

There never is a dissenting vote on a question of this kind on this board of supervisors. They believe in this method of advertising their county and show real cooperative spirit.

think nothing can prevent a successful national organization of farmers."

"Our Indiana Bureau, organized recently, is much like those in the other states," Mr. Brown said, "except that our county agents, while they can cooperate, cannot help us organize, due to the fact that they are paid from state funds, and are not, as in the other states, employed largely by the farm bureaus. But the farmers have got together, and we now have a membership of about 25,000, with over 50,000 expected by next fall."

"The township is the unit in the Indiana organization. Next above them are the ten districts into which the state has been divided, each of which elects a head, who also acts as a director of the state organization. The state body is governed by the board, consisting of the president, the first and second vice presidents, and these ten directors. Annual dues in the state federation are a dollar, with each township adding as much else as it needs for its own support. A vigorous membership campaign is now in progress."

"In all the country I have traveled over recently, through the corn belt, condition of farm crops has been fine," said Mr. Brown. "In some places wheat is so rank already that they are having to pasture it heavily."

B. C. KEITH, WHO UNCOVERED OLEO FRAUD, QUILTS U. S. BUREAU.

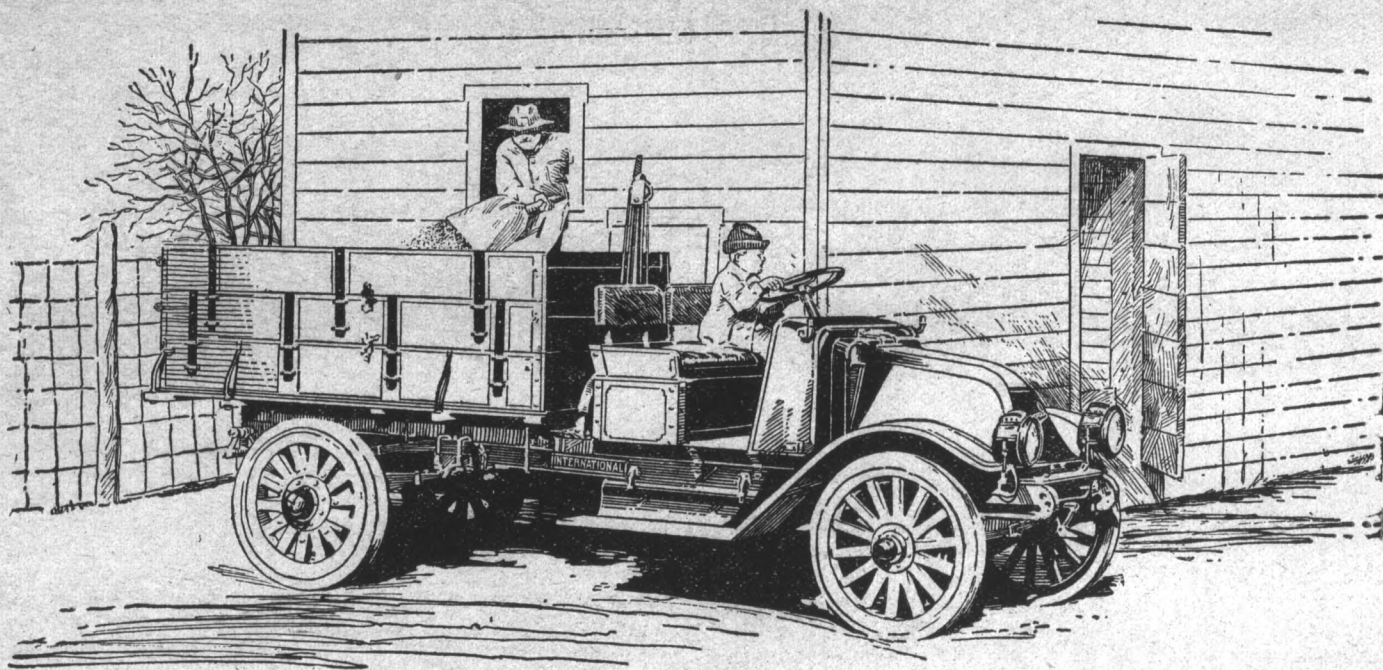
B. C. KEITH has resigned as deputy commissioner of internal revenue to enter private tax advisory business. He is widely known as the official responsible for uncovering oleomargarine, liquor and other revenue frauds in nineteen years of service of the bureau.

While serving as a clerk in the revenue bureau some years ago Mr. Keith discovered evidence of what later developed into a nation-wide conspiracy to defraud the government of between \$20,000,000 and \$30,000,000 in taxes by selling colored oleomargarine as the uncolored product. Revenue agents found evidence leading to prosecutions in New York, Troy, and other cities.

FARM BUREAU GROWING.

I LOOK for a national farmers' organization to be formed next fall, one of the functions of which will be an equalization of production, so far as that is possible, to forestall these alternate periods of bumper crops with bottom prices and short crops with sky-high prices," said J. G. Brown, president of the new Indiana Federation of Farm Bureaus, recently.

"Farmers are interested in organizing now," he went on, "and they see the need of it and the benefits that come from it. The movement has such a start and momentum now that I



15c or 33c—Which?

HAULING a ton of farm products is costing you either 15c or 33c for every mile, depending on whether you use motor trucks or horses.

The U. S. Department of Agriculture says that it costs 15c per ton mile to haul corn and wheat to market with motor trucks and that it costs 33c to haul corn and 30c to haul wheat with horses. This is the average for the country. In some sections, it costs 49c to haul corn and 42c to haul wheat with horses.

There is One Best Way

to haul farm products by motor truck and that is to use the dependable International Motor Truck with service and quality built into it to the last part. Our many years of experience in developing and selling power equipment for farm use—engines, tractors, and all kinds of farm machines—and all the knowledge of farm conditions that experience has given us, are built into the International Motor Truck. It will prove as useful, as convenient and as profitable as your engine, tractor or automobile—perhaps more so.—Every part—engine,

transmission, internal gear drive rear axle—is made to work efficiently with every other part under country road and load conditions. It is a truck you can afford to buy and afford to use. There is a style of body and size of truck to meet practically every hauling requirement.

Give us your annual tonnage to and from town, and we will tell you whether or not an International will prove a profitable investment. Write now so you will have complete information to use when you need it.

Motor Truck Sales Department

International Harvester Company of America
(INCORPORATED)

Chicago

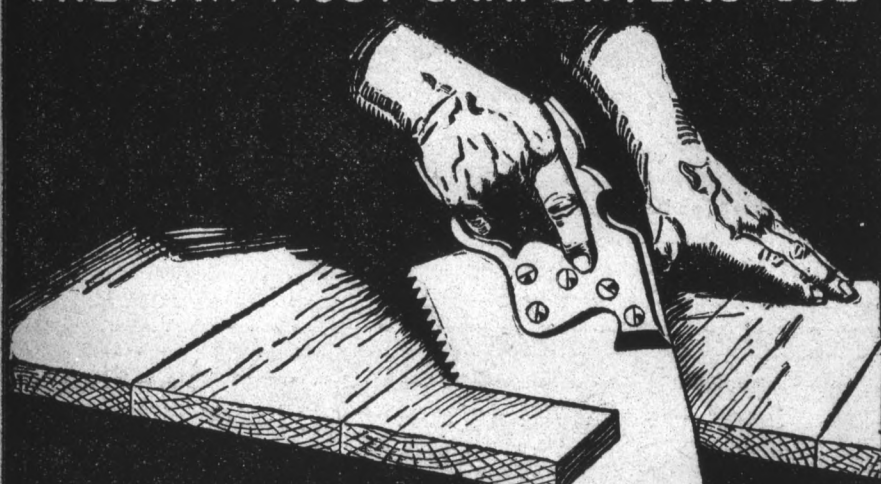


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DISSTON SAWS AND TOOLS Standard for Nearly Eighty Years—and Growing Faster Every Year

Our Service Department

GUARANTEED PRICE APPLIES TO SPRING WHEAT.

Would you kindly advise me regarding the position of the farmers in relation to the government and to this year's spring wheat crop? If a farmer puts in spring wheat this year and did not raise spring wheat last year, will he receive the government fixed minimum price?

Tuscola Co.

G. A. S.

Our information is that the government guarantees the minimum price for all spring wheat grown in the United States in 1919. The method of marketing the crop has not been worked out, but plans are now being developed and as soon as they are completed, the provisions will be published in these columns.—W.

REFILLING SILO.

Is it good policy, or even practicable, to put new ensilage on top of old? My silo is about one-third full and I would like your opinion as to the best way to handle it as I do not need it for feed this spring.

Wexford Co.

J. E. S.

You will be perfectly safe in putting new silage on top of the old, provided the decayed surface of the old silage is removed just before filling the silo. Silage will keep two or three years if kept well covered.

FARMERS' NATIONAL ASSOCIATION.

Please advise me about the new Farmers' National Association. I saw one of their men and he told me what they were going to do for the farmers. Tell me if you think it is a good thing for farmers and if they can raise prices of our crops. Who are the officers of the association?

Saginaw Co.

R. G. E.

About all we can find about the Farmers' National Association is that it is being promoted by two former corporation promoters and one lawyer who have incorporated an organization under the above name to sell membership to farmers. The organization committee is made up of three lawyers. From surface indications the promoters of this movement are interested in collecting membership fees.

Our advice would be for you to join your county farm bureau and forget all about these new-fangled organizations. We are willing to lend our aid to any organization calculated to benefit agriculture, and which is promoted by real farmers, and which has their interests at heart, but we do not have any faith in an organization which seeks to secure a working fund of \$12,500,000 on the strength of promises to bring about a marvelous momentum in agriculture. The starting of such organizations at this time is sure to weaken the influence of our county, state and national farm bureaus and prevent the farmers from getting together in a more practical way. We look upon this movement as a deliberate plan to delay the work of organizing an efficient farmers' organization to work out cost of production problems, and give our agriculture a more dignified position among the other great industries of the country.

W. M. K.

SALTING RABBIT HIDES.

I would like a little information in reference to salting the rabbit hides. Do you have to put hides in salt brine or cover with salt, and how long must they be left in salt before drying to tan? How long can you keep a hide before tanning, as I would like to tan a few for my own use?

Genesee Co.

H. B.

Fresh skins should be salted for a day or two before fleshing, as then the salt will have hardened the tissues so

the knife will take hold of them better. The salt is put on dry and rubbed in well. A skin that is salted in this way may be left several weeks before tanning and no harm will result.

On the inside of a dried skin will be found a tough, glazed surface which must be cut and scraped away after a little soaking so that the tanning liquid may thoroughly relax the skins.

As good a plan as any is to put a number of skins to soak and take them out and partially flesh them one after the other, replacing in the soak until entirely softened.

Thorough relaxation and fleshing is essential to good dressing, as it opens the pores and makes them accessible to the solution used.

Skins which have just been taken off need no soaking, as the object of soaking is to soften and relax them so they may be flattened for fleshing, or the removal of the inner muscular coat.

When desired, skins may be softened, and in fact, completely dressed without wetting the fur, though this is hardly practical with work of any great amount and I think most skins are benefited by the thorough cleansing they get in the various wet solutions. To soak or relax a flat or open skin without wetting the fur, brush the flesh side all over with the tanning solution or saturate a quantity of sawdust with the soak and lay cased skins on a bench or floor and cover completely with the sawdust.

The sawdust must contain enough moisture so that a few drops may be squeezed from a handful.

G. A. BALDEN.

BUCKWHEAT VS. BARLEY.

What is the comparative value of buckwheat as to barley for feeding purposes? We have a number of hundred bushels of buckwheat and as there is no market for it, have been sending it out to the farm to feed, ground. Cows like it and I told the man to try it on the hogs but we don't know just where we are at and want more light.

Hillsdale Co.

H. B.

Buckwheat contains 10.8 per cent of protein and 2.5 per cent fat; barley contains 11.5 per cent protein and 2.1 per cent fat. Therefore, pound for pound, there is little difference in feeding value. It is my judgment, however, that you would get better results to feed these two feeds ground and mixed half and half than by feeding buckwheat alone to your dairy cows, breeding hogs and growing pigs. Experienced feeders claim that buckwheat, if fed in excessive quantities, tends to produce an irritation of the skin and general unthrift. Fed along with other feeds there is no danger and you surely would not lose anything, provided barley could be purchased at about the same price per hundred pounds.

W. M. K.

MAINTAINING A LINE FENCE.

If I have a good stock fence is that sufficient, or do I have to fence against my neighbor's hogs?

C. R.

Until a line fence is established each neighbor must keep all his stock at home. By agreement or by calling the fence viewers, as provided by statute, the line can be divided, and after such division each must at his peril keep a legal fence on his half or suffer what loss comes to his crops from his neighbor's stock getting through that half after a legal fence has been built on the other half, and also must at his peril keep his stock from getting onto his neighbor's land through his own part of the fence. As to what is a

(Continued on page 677).

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Separators are guaranteed a life-time against defects in material and workmanship. Made also in four larger sizes all sold on **30 Days' FREE TRIAL** and on a plan whereby they earn their own cost and more by what they save. Postal brings Free Catalog Folder. Buy from manufacturer and save money.

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On Trial. Easy running, easily cleaned. Skins warm or cold milk. Whether dairy is large or small, get handsome catalogue and easy monthly payment offer. Address **AMERICAN SEPARATOR CO., Box 5061 Bainbridge, N.Y.**

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Will last forever. You will never have to rebuild it! Neither will your grandchildren. Built from the famous BRAZIL VITRIFIED FIRE CLAY. The "B-V-T" has been on the market eight years without a failure. Send for Catalog D. **Brazil Hollow Brick and Tile Company** BRAZIL, INDIANA

DICKEY GLAZED TILE SILOS
"The Fruit Jar of the Field"

SPECIAL OFFER to those who write now!

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ATTEN-SHUN FARMERS Ship your own cream and get the profit yourself. We pay top prices and mail check promptly. Write for our proposition. **FREEMAN DAIRY CO.** Butter Dept. Flint, Mich.

Binder Twine Get our low 1919 prices. Farmer agents wanted. Sample free. **THEO. BURT & SONS,** Melrose, Ohio

Quicker Better Filling with Less Power

Time counts when you fill your silo. The loss in feeding value of Silage cut immature or late will buy a Silo-filler many times over. With one on your farm you don't have to wait your turn and lose money every day of delay.

Ann Arbor DISC THROWER SILO FILLER

Is ready when you need it. Never out of order and it cuts filling costs too, over any other method. The Knife on the fly-wheel—cutter and blower on one wheel, taking power direct from the belt without extra or complicated mechanism—means big capacity of the finest cut, most succulent Silage with the least engine power. A dozen good 1919 features are innovations in Silo-Filling. Get Free book on filling. The more you know about Silo-Fillers the better you can appreciate this machine. Write to-day.

Ann Arbor Machine Co. Dept. 341 Ann Arbor, Mich.

Manufacturers of "Ann Arbor Balers" The Baler for Business



LEARN AUCTIONEERING

at World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught. Write today for free catalog. **JONES' NAT'L. SCHOOL OF AUCTIONEERING.** 23 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

Brooding the Chicks

By E. C. Foreman

REPLENISHING their flocks and maintaining a high standard of quality is probably the most vital and difficult operation the commercial poultry breeders have to contend with. Modern poultry appliances and equipment combined with a little knowledge of the requirements of young chicks will simplify matters greatly, reducing the mortality among the chicks and insure for the poultry breeder a vigorous flock of healthy pullets to replace the old hens.

If the commercial poultryman fails in numbers or quality of pullets, he must have a liberal bank account to tide himself through the trying months of October, November and December.

The old hens usually demand a three months' vacation preparatory to the winter "dress parade," and somebody must foot the bills while they are changing costumes. This is when the

ment of chicks, with delayed production and absence of broody hens when the right hatching season is at hand.

When the egg market in the fall is offering very enticing prices for fresh hen "fruit," then it is that "Biddie" is severely scored for loafing. In many cases she should be completely exonerated because, in analyzing her case various reasons present themselves why she cannot produce eggs. Unless she is hatched early enough and properly raised, she won't ripen in season when a day's work means six or seven cents. We can only expect immature, neglected pullets "to do as they are done by."

Feeding Practice.

In suggesting the feeding practice given below, it gave better results, both in growth and health, than numerous other rations commonly used—such as the "boiled egg and oatmeal



Early Hatched Pullets Are Needed to Replenish the Flock of Layers.

careful breeder endeavors to balance the laying season and prevent a financial stress, by hatching sufficiently early, that the pullets will maintain the egg yield, during the late fall when the hens are off duty. The early hatched chicks also are more vigorous and carry a greater capacity for egg production by virtue of the fact that they are the progeny of the "winter layers." The hen that produces winter eggs must be vigorous and healthy so in hatching early, the offspring naturally inherit these desirable characteristics, which accounts for the further fact that early chicks grow more rapidly, have a lower flock mortality, are better able to withstand the intense heat of summer and have a sufficient vitality to "hold their own" against mites and lice.

The late hatched chick generally develops into a liability rather than an asset because of the possibility of coming from poor parent stock. The most unprofitable hen in the flock makes an effort to reproduce herself during the late spring. The bright warm sunshine which is so welcome in early spring to develop chicks, develops an intensity which stunts the summer-reared chick. The same sun that melts wax will harden clay.

The brooding of chicks, while a real problem to the commercial poultryman does not hold the same difficult role to the farmer with a small flock of fifty hens. In the latter case, everything is regulated by the inclination among the hens to go broody, and in most instances, the broody instinct is developed early or late according to the season and rate of egg production of the hens. If winter eggs are not forthcoming, early setting hens are not available, and late hatched chicks result, so Mr. Farmer develops a cycle of late hatching which means slower develop-

mixture," the dry bread crumbs or the bread squeezed dry out of milk, mixtures and various others.

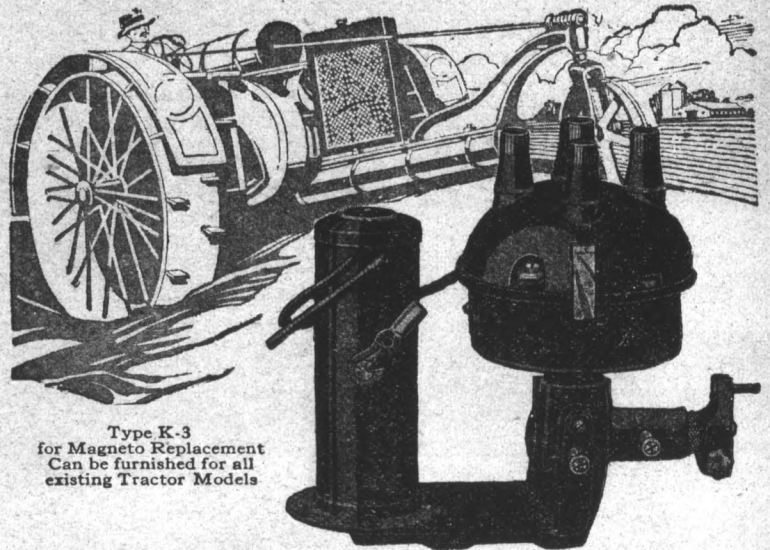
Occasionally some kindly neighbor will inform us of the chicks mother used to raise on corn meal and also how every egg would hatch if set in the light or dark of the moon, and further, that some hens laid every day. In this enlightened age, such tales and theories are not only absurd but often amusing, because the ability of the egg to hatch is an hereditary characteristic peculiar to the individual and controlled partially by environment. The eggs of some hens will hatch whether incubated during the light or dark of the moon, while from others, it is almost impossible to secure a strong, healthy chick. On the other hand, an analysis of the body of a growing chick compared with the nutrients in corn meal very clear shows that corn meal does not carry the food requirements in proper proportions for normal growth. A ration balanced for the growing chicks is as necessary as one for egg production. Since the chick's body is constituted by what it receives in the form of food, the character of the food assimilated must determine the character of the body. The food determines the kind of growth and, if deficient in any nutrient, the growth will also be deficient in that respect, thus food elements control growth.

First Day.

After completion of hatch, leave the chicks in the nursery tray of incubator for twenty-four hours. If nursery tray is not provided, clean out all the shells and unhatched eggs, leaving the door of the incubator open about one inch from the top, thus providing more fresh air for the chicks. If natural incubation has been practiced the mother hen

(Continued on page 674).

ATWATER KENT SCIENTIFIC IGNITION



Type K-3
for Magneto Replacement
Can be furnished for all
existing Tractor Models

AN Atwater Kent System will replace the magneto on your tractor with more efficient ignition.

PERFORMANCE

1. The tractor motor being of heavy duty type, using heavy fuels, requires a big, hot spark of uniform intensity.
2. An Atwater Kent System produces a big, hot spark at all motor speeds—at starting speeds of such size and intensity as to render unnecessary auxiliary apparatus.

DURABILITY

Every part of an Atwater Kent System is made of best materials, simply constructed. Nothing to get out of order.

The lightness of the system and its moving parts eliminates difficulties from vibration. Will outlast any tractor motor.

ECONOMY

An Atwater Kent System is more economical than any magneto on any basis. Its first cost is less—due to simplicity of manufacture. Its upkeep is less—because there is really nothing to wear out or get out of order. Anyone can detect and adjust any trouble that may ever occur—expert electrical knowledge is unnecessary. Its performance is unflinching.

ACCESSIBILITY

Every working part of an Atwater Kent System is easily accessible—is in plain sight when distributor cap is removed. The system fits snugly in place of your magneto—all high tension wires are firmly anchored in distributor cap nipples by an ingenious but simple device—and can never shake loose.

SIMPLICITY

Practically fool-proof in construction—all moving parts reduced to a minimum and accessible for inspection. Only one adjustment, and this is good for at least a season's use. An ordinary screwdriver is the only tool required. No complicated parts—no magnets—no sliding contacts—just a simple high-grade device that does its work faithfully, winter or summer, rain or shine, as long as your tractor holds together.

Atwater Kent Scientific Ignition is now standard equipment on ten well-known tractors, and is replacing the magneto equipment on hundreds of others.

The Atwater Kent System is practically the same type system used for fifteen years by leading manufacturers of cars, motors, trucks, etc., and due to basically inherent features is the ideal tractor ignition. See your dealer or write for literature.

Please Name Make and Model of Car or Tractor When Requesting Literature

ATWATER KENT MFG. WORKS

4927 Stenton Avenue, Philadelphia



**Thresh Your Own Grain
AND YOUR NEIGHBORS,
IF YOU WISH**

THE Huber Junior Thresher and a 12-25 tractor equip you to thresh your own grain with your own men whenever it is most convenient. Your crop is always safe from sprouting if the season is wet, or from shelling out if the season is dry. You can thresh when you *should* thresh.

THE HUBER JUNIOR THRESHER

is just as efficient as the large Huber Thresher, a machine whose many good qualities are known to experienced threshermen everywhere. It threshes cleanly and "saves the grain". It differs only in size from the best standard threshing machines.

Any 12-25 tractor runs the Huber Junior Thresher. Huber Light Four Tractors are especially adapted to running it economically and efficiently.



Write for the "Farmer's Insurance Policy" which describes the Huber Junior Thresher in detail.

The Huber Manufacturing Company
301 Center St.; MARION, OHIO
CANADIAN BRANCH: BRANDON, MAN.
Some desirable territory still open for live dealers.

Kalamazoo Durability

Kalamazoo Ensilage Cutters are of simple, rugged design and built throughout of the very best materials. They will give many years of service and make you forget there ever was such a thing as ensilage cutter troubles. The Kalamazoo is extremely simple to operate. One lever starts, stops or reverses the machine.

Note These Ten Big Special Features of

Kalamazoo Ensilage Cutters "The World's Standard"

- 1—Malleable, unbreakable knife wheel.
- 2—All working parts covered to prevent accidents.
- 3—Center-shear cut gives even flow of ensilage.
- 4—Absence of vibration lengthens life of machine.
- 5—Less power required because of center-shear and no vibration.
- 6—Triple feed rollers insure steady feeding.
- 7—Strong, sturdy, life-time frame of channel steel.
- 8—Reversible shear bar gives four cutting edges.
- 9—Hard oil cups provide ample lubrication for every part.
- 10—Guard to prevent accident in case belt slips.

The biggest of all these big Kalamazoo features is the center-shear cut. It means smoother running, less power, less vibration and longer life to the machine.



Write for Catalog Don't depend on a community cutter. Own your own machine. Send today for illustrated catalog of the Kalamazoo—"The World's Standard."

KALAMAZOO TANK & SILO CO.
DEPT. 123 KALAMAZOO, MICH.

A Reader's Viewpoint

Stanley Warner, Progressive Stock Breeder, Holds that Land Should Not Pay all Taxes.

NO heading could be more complete nor more impartial for the discussion of single tax—"Shall Land Owners Pay All Taxes?"—and yet what an eye-opener to the uninformed or to him who has been blinded by the dust of argument thrown up by the Site-Value-Tax-League. Nothing is left to do but lay the dust and catch the culprit, but this is no easy matter when it is the income tax-payer and the manufacturer who are making the get-away.

We must remember that the millionaire manufacturer's income tax would be eliminated and that the value of the lot underneath the factory would be small compared to the value of the lot and factory combined. To receive the same tax from this man the valuation of his lot would have to be raised to equal the present cash value of his business. Considering the sky-scraper of modern business and the enormous profits on some comparatively, if not absolutely useless, articles, this would stagger the average mind as a land value. The various and contradictory arguments of the single-taxer agree, however, on one point. This would be "community value" for which he should not be taxed. Let the community pay the tax but let him reap the profits from the community and pocket the "community value" when he wishes to sell out. Rest assured that this cheap manufacturer, who has been taxed on income and non-essentials in war time will not only fight an extra land value but sooner or later would fight down the "community value" now given his city lot if a "site-value" tax were in effect. What land is more used than his? What land produces a more profitable crop? He can sell his "community value" and move his business to the country railroad station, as many have done, and the only "community value" would be of his own making. Surely he would not be taxed for his "improvements" though they be bought by the "community value" which he sold. That man with purely selfish intelligence who does not believe in general welfare would escape with a nominal tax on a cut-throat business. His only contribution to society is a community real estate value which he would withhold if it were possible to take money from the public without giving it. I cannot believe that a man who is manufacturing a worth-while product and who is reaping his just reward from the public complains of a tax for governmental usage proportionate to his income. It is for his protection and the general welfare of the public on which he is wholly dependent. It affords a chunk of steak for the governmental bloodhounds and a few bones for the rest of the kennel.

For the land speculator there would be three opportunities. First, he could let his land revert to the government for taxes. This would be done in most cases as his land is usually worthless and unable to bear an added tax under present conditions if tilled.

Second, he could build a few improvements and sell to some urbanite who is blissfully ignorant of "harrowing details" and the character of the soil.

Third, he could become farmer and attempt to pay the taxes himself. If, as usual, his land be poor he would soon be ruined by the competition of the rich land. If his land happened to be rich he could prosper at the expense of the farmer who, for lack of a corresponding fertility was allowing portions of his farm to lie idle.

Failing to secure meat from their masters (by income and improvement taxes) the governmental bloodhounds

would look with greedy eyes at this addition to the list of under-dogs. The same whip which deprived them of the meat which suited them would force them to feed on the muscle and bone of the poorer diseased dogs first. But what chance have a few bloodhounds against a pack of half-starved misused collies, shepherds, airdales and terriers with a few mastiffs and bulls mixed in?

I wish to call attention to the misleading figures given by Judson Grennell in your issue of March 15. I should call them a compromise basis for single tax. The single taxer is on the last stretch of dusty road when he compromises, when he submits to a valuation of Michigan farm lands as wild, and to Detroit land as it is at present.

But in what measure do valuations enter the argument when it is contended that the idle land will pay most of the tax. At last I see the redeeming motive of this fellowman. How can a single-taxer expect idle land to pay taxes unless owned by a wealthy man with a good income? He intends to buy it himself and support the government from his factory profits, relieving the producer and consumer of their present contribution and saving for a time of need what idle acres we now find unprofitable to use.

He does not intend to tax us for what land we wish to till, because our tax money comes from our crops, which are the product of our labor, while his money is the product of selfishness, idleness and the consumer's labor. I don't blame him for wishing to give it away.

If we find a field unprofitable we can sell it to the single-taxer. He will pay the taxes on it as idle land and give it back to our children when soil fertility is much more valuable. The poor land of today will seem rich to our children if we have to continue to mine our rich soils to make a living. Single-taxer, you're the generous chap I've been looking for to come forward at this time of great need. Put 'er there! You're all right!

CONTROL ASPARAGUS BEETLE.

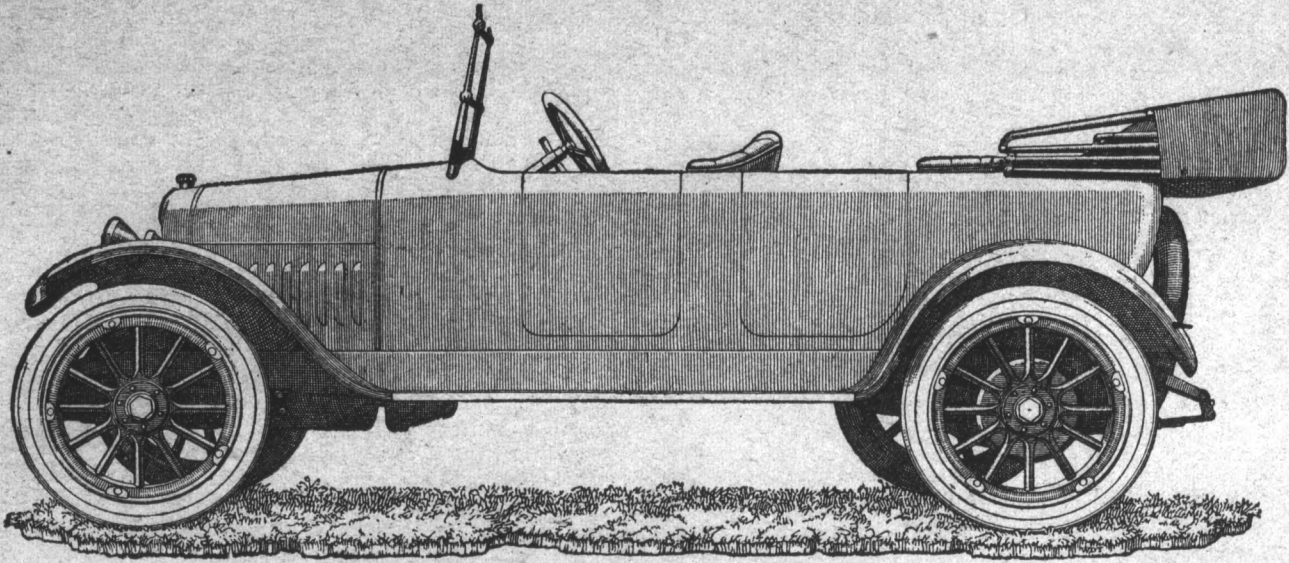
GROWERS of asparagus have come to realize that they must control the two species of asparagus beetles if they are to have a nice appearing crop for sale. Injury by these insects is due to the work of both young and adults, to the tender shoots which they render unfit for market early in the season. Later they destroy by defoliation the grown plants, particularly the seedlings, the roots of which become weakened when their tops are devoured. The larvae, or "slugs," as well as the beetles, attack the tenderer portions of the plant, but the beetles gnaw the epidermis, or outside of the stems seemingly with equal relish.

Methods of Control.

Although these insects are at times very numerous in neglected asparagus beds they can readily be controlled. Hand-picking is of some value in small beds but is not a very efficient means of control. Ducks, chickens and turkeys running in the beds will account for large numbers of these insects. One of the best remedies against the larvae is fresh, air-slaked lime, dusted on the plants in the early morning while the dew is on. It soon kills any of the "slugs" with which it comes in contact. Arsenate of lead sprayed onto the tall plants, which have been left for this purpose, will kill many and prove to be very efficient.

DON B. WHELAN.

What better monument can a man leave than a tree he has planted?



The movement to better Cars in which Maxwell shares

OBSERVATIONS recently made among farmers show a marked tendency to buy better automobiles. They want a little more luxury, and at the same time don't care to waive the consideration of economy.

For a motor car to a farmer is a piece of time-saving, comfort-giving, dollar-saving machinery.

Hence the tendency toward Maxwell has a good reason behind it.

For this car has not only a self starter, and demountable rims, but other points of luxury that make it popular on the boulevards of the big cities.

Still it is not a "boulevard" car. For it is built to stand the gaff of rough and ready use, good roads and bad, mud and concrete, a trail as well as asphalt.

It is built to be everlastingly reliable. And that is how reliability has come to be its middle name.

Five years ago a very simple chassis was designed. Simple so that it would be easy to build, easy to run, free from trouble; and simple so that it would have no "grand opera moods."

Today 300,000 Maxwells have been built on this original chassis plan. More than 1000 improvements have been made; but never one single radical change in design.

There is scarcely a greater business monument to the policy of doing one thing and doing it well than the product of the Maxwell Motor Company.

It saves you money three ways and returns you a sum of satisfaction on which you can draw interest for 100,000 miles.

\$895 f. o. b. Detroit.



*More miles per gallon
More miles on tires*

MAXWELL MOTOR COMPANY, Inc., Detroit, Mich.

Their Unfinished Work— and Ours

THE immeasurably great purpose which lay back of the war was far too vast an accomplishment for any one body of men to put through to a finish.

Our soldiers have done—are doing—their part. God knows we never wanted them to do more.

But what of us?

Winning the war was the initial step toward a world peace and prosperity of which hitherto we had never dared to dream. But it was only a step.

The work of the most glorious armies of all history placed us on the threshold of an open door. A new world of unlimited possibilities lies beyond. They could not bring it to us. They could only show it to us, and its vast worth—and give their lives to do it, if that were needed.

It is our task to finish this work.

They showed us the way and passed on—perhaps to new worlds to conquer. And whether we will or not, the solemn obligation to finish their work has fallen upon us.

"If ye break faith with us who die,
We shall not sleep—though
poppies blow
In Flanders fields."

Your patriotism and mine was not buried in those graves in Flanders fields. There is still work to do—for our country, for ourselves, for our children. Else the war will have failed in its purpose—and millions of young lives will have gone out on a vain quest.

The Victory Liberty Loan is a call to this unfinished work—Respond from your heart.

This space contributed by

American Telephone and Telegraph Company



GOVERNMENT LOAN ORGANIZATION
Second Federal Reserve District
Liberty Loan Committee, 120 Broadway, N. Y.

Agricultural News

NEW YORK MILK SITUATION.

FOLLOWING the meeting of the Dairymen's League at Utica, on March 22, attended by more than two thousand delegates, the local branches of the League are considering the new plan for state-wide control approved at this gathering. Almost universally the subordinate organizations are accepting the League plan.

Meanwhile the League has been incorporated under the laws of the state of New York, the name taken being the Dairymen's League Cooperative Association. Officers have been elected and steps are being taken to secure the following ends: To place all members on an equal basis, by pro-rating all money received for milk; to prevent so-called milk strikes and to secure long-term contracts, to care for all surplus milk, so that the dealers may not be compelled to buy more than they can handle; and finally to produce by-products from milk at the lowest possible cost, advertise them and sell them.

The League does not at present propose to take any part in the distribution of milk in New York City, but will leave that to local dealers. The price of milk is hereafter to be determined by taking the highest market quotations for butter and cheese, adding a fair price for skim-milk and whey and figure the milk price from that. The price fixed for April milk under this plan is \$2.80. The price will gradually increase as the season advances. The League milk has been sold according to this plan for at least eight months in advance. Another favorable feature of the present arrangement is that the base zone has been lengthened from one hundred and fifty to two hundred miles from New York.

E. L. V.

GOVERNMENT LOANS TO FARMERS NEARLY \$200,000,000.

THE government has loaned nearly \$200,000,000 to its farmer citizens for agricultural development, according to figures made public by the farm loan board. The loans during March aggregated \$15,946,277, which sent the total up to \$198,608,626 as the amount loaned since the creation of the system.

March loans were distributed among 4,630 persons. This represents a slight increase in the number of individual loans closed as compared with the previous month, the figures show. Since the board was organized 79,949 separate loans have been made by the twelve banks.

Omaha's loan bank leads in loans closed during March with \$4,565,850. The St. Paul bank was second with \$1,893,200. Amounts loaned by other banks follow: Houston \$1,838,717; Spokane \$1,523,850; Louisville \$1,142,700; St. Louis \$1,125,800; Columbia \$923,355; Wichita \$775,800; New Orleans \$747,775; Berkeley \$546,000; Springfield \$525,590; Baltimore \$336,500.

BUTTER ON TRIAL.

A LAWSUIT involving millions of dollars in revenue to the government and large amounts to the consumers of butter in the United States is being tried in the United States District Court in Kansas. Witnesses from all parts of the country, experts in making butter, were summoned by the government.

The suit was brought by the Belle Springs Creamery Company of Salina and Abilene to obtain a refund of \$669.40 from the internal revenue collector. A tax of \$400 and a penalty of \$200 and costs had been assessed on the ground that the company was making adulterated butter. On the face of

the suit it is a small matter of \$700 internal revenue tax.

Millions of Dollars Involved.

But the real facts of the case involved millions of dollars and every creamery in the country and make the case of interest to every butter user.

The government charged butter containing more than sixteen per cent water was adulterated and collected a tax from the creamery because some of its butter contained more than sixteen per cent and was therefore adulterated and subject to the extra tax. The company contends that the water in the butter is not adulteration.

If the government wins the suit it means a big saving to butter consumers. With butter containing sixteen per cent of water, the public is paying ten cents a pound for water. The federal tax was imposed to prevent excess water going into the butter.

More than Thirteen Per Cent Adulteration.

The government has brought witnesses here from New York, California, Minnesota, Wisconsin and other big dairy states to show that from eleven to thirteen per cent of water is necessary for the best grade of butter and really an adulteration.

FARM LABORERS RETURNING.

THE farm labor outlook has brightened considerably, according to reports received by the Agricultural Department. Men who were called to war are rapidly returning to the farms by hundreds of thousands. The reports show that on April 2 the farm labor supply was eighty-three per cent of the demand. This represents an increase over a corresponding period of 1918, when the supply was only seventy-two per cent of the demand.

Reports from the western wheat belt show that section in a fairly good condition, since its labor supply is quoted as eighty-five per cent of the demand.

The far west is reported as having a labor supply eighty-eight per cent of demand. California's farm hands number ninety-one per cent of the total number needed. Ohio reported eighty-per cent of the demand.

CIVIL WAR PRICES WERE CONTINUED THIRTEEN YEARS.

DETAIL prices of twenty-two articles of food combined increased two per cent in March over February, according to the Bureau of Labor Statistics of the Labor Department. The increase during the preceding year was fourteen per cent and in a six-year period eighty per cent.

Comparing price fluctuations of the present war prices with those of the Civil War, the division of public works and construction development of the Department of Labor finds that prices did not get back to pre-war levels until thirteen years after the Civil War.

In the present instance it is claimed prices never will get back, the recession being possible after the Civil War and business methods because of improved manufacturing.

151 SHIPS CARRYING VICTUALS TO EUROPE.

STATISTICS made public today by the United States Shipping Board show the board now has 151 steamers, representing 950,000 deadweight tonnage, engaged in carrying food to the starving nations of Europe.

Built by the Emergency Fleet corporation and originally designed as a weapon to defeat Germany's submarine campaign, says the statement, the ships now are serving a great "mercy fleet," feeding friend and foe alike.

Lasco Vitrified Tile Silo



It is now possible to secure a Lasco Tile Silo

With the Famous Ladder-Hinge Door

Door forms a perfect ladder—slope 15 inches apart. Safe, easy—any boy can operate. Door always in place—no lost doors. Lever Lock operated by one hand. Keeps snailage perfectly next to the door.

Does not sag, bind or stick. Write for Booklet. Agents Wanted. You can also secure the Ladder-Hinge Door with our stave silos. LANSING SILO COMPANY 304 E. Erie St., Lansing, Mich.

Clip Your Horses

Heavy coats of hair reek with perspiration and filth. Horses are more liable to colds and the usual spring ailments. A good horse clipping machine costs little and lasts a lifetime. The Stewart No. 1 is the ideal modern machine—only \$9.75. You can get it by sending \$2.00 and paying the balance on arrival. Or write for 1919 catalog containing complete line of machines. CHICAGO FLEXIBLE SHAFT COMPANY Dept. A127, 12th Street and Central Ave., Chicago, Ill.

Seed Corn 5,000 Extra selected, sure to grow 20 Bushels per acre

rieties. Highest yields. Best show corn. Also seed oats, barley, alfalfa, Spring wheat. 1200 acres. Sample on request. Write today for catalog. W. S. SCARFF & SONS, New Carlisle, Ohio

MICHIGAN GROWN SEEDS

for Michigan growers. Ask for catalog. Harry E. Saler, Seedsman, 115-119 E. Ottawa St., Lansing, Michigan.

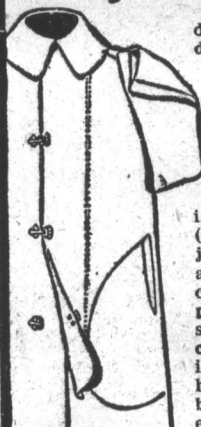
HARROWS

Flexible wood beam and Spring tooth harrows direct from factory to you at wholesale prices. Helena Woodworking Co., Helena, O.

50 Belgian Hares, all ages, good, utility stock. Some selected breeders, cheap. W. E. LOCKY, Holmesville, Ohio.

Wanted a reliable married man, to work on a farm, by the year. JNO. W. COTT, R. 3, 105, Carson City, Mich.

Army Raincoats



The official model designed for military duty; the one type of raincoat both waterproof and sanitary; every garment strictly to Government specifications. NO WET CAN GET THROUGH—hermetically cemented; interfitted fly front (triple protection); adjustable fastenings around wrists; storm collar with storm tab, pockets with interior slit to reach inside clothing without opening coat; ventilation holes in back concealed by extra yoke to afford escape for moisture from the body.

End of war permits of supplying civilians. Direct from Government contractors at far below actual value. Fill in coupon and mail with \$7.50.

TO THE PEERLESS CO. (Government Contractors)
P. O. BOX NO. 387, NEWARK, N. J.

Date.....19.. Please send.....Army Rain Coat by Insured Parcel Post Prepaid to

Name..... Address.....

Chest measurement.....inches.

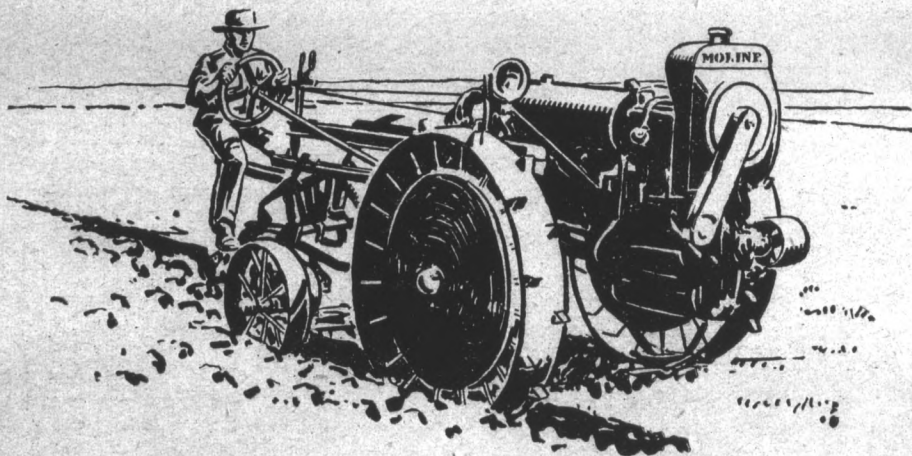
For which find \$7.50 money order enclosed. If not entirely satisfactory money is to be refunded on return of coat. Dept. 500.

Officers' Double Breasted Models with inverted pleat down back and all around belt with buckle; convertible collar; patch pockets with flaps; wrist fastenings with buckles; ivory buttons. Disposal price, \$12. State chest measurement.

\$1,000⁰⁰ REWARD



To the first farmer naming
a job of general farming
that can't be done by a
MOLINE
UNIVERSAL TRACTOR



**THE TRACTOR THAT ELIMINATES
THE HORSE**

MOLINE PLOW CO.
MOLINE, ILL.

Moline Service Satisfies



Are you "two horses" from town?

"**WHAT** do you mean by 'two horses from town'?" you ask.

We mean: Is yours a "two-horse road" like the one shown on the left—full of mud, ruts, holes and bumps?

Or have you a firm, smooth road—mudless, rutless and dustless—like the one shown on the right, that *one* horse can roll a load over with ease?

You know of course, that the one-horse road is much cheaper.

"How do you make that out?" you ask.

It isn't theory. It's a proved fact. We don't ask you to take our word for it. Read the report of an authority, Mr. C. H. Claudy, recently published in *The Countryside Magazine*.

"Statistics for a certain bad-road district showed the average cost for hauling to be 29 cents per

ton-mile. This is more than it costs to ship a ton of farm produce from New York to Liverpool under normal political conditions."

"Yes; but I use an automobile."

All the more reason for a good road. Bad roads ruin automobiles. Good roads not only save wear and tear on autos but *they move your farm half-way to town by cutting running time in two.*

"Yes; but how about the bond issue boosting my taxes?"

Mr. Claudy discusses that, too:

"The argument of the man who has to pay for the road is that he can't afford the bond issue because it increases his taxes....But figures knock an argument like this completely out of the ring. In a country where the proceeds of a \$125,000 bond issue had been expended on roads, the average cost of hauling per ton-mile was cut

exactly in half, that is, from 30 to 15 cents. The actual saving in one year was \$124,970 or within \$30 of an amount sufficient to retire the entire bond issue in one year!"

"I know; but think of the maintenance cost of macadam roads!"

You are quite right in objecting to paying for the everlasting maintenance cost of plain macadam.

That is where Tarvia comes to your rescue. The use of Tarvia re-enforces the road surface and makes it water-proof, frost proof, mudless, dustless and automobile-proof. A Tarvia Road costs very little to maintain and pays for itself over and over again.

Many townships—whole counties, in fact—have proved this so thoroughly that they now use Tarvia on *all* their main roads to save money.

In the face of these facts can you and your neighbors afford to use a "two horse road" a single season longer?

Illustrated booklet showing Tarvia roads all over the country free on request.

Tarvia

Preserves Roads-Prevents Dust

Special Service Department

In order to bring the facts before the taxpayers as well as road authorities, The Barrett Company has organized a Special Service Department which keeps up to the minute on all road problems. If you will write to the nearest office regarding road conditions or problems in your vicinity, the matter will have the prompt attention of experienced engineers. This service is free for the asking.

If you want better roads and lower taxes, this Department can greatly assist you. Booklet free on request.

THE BARRETT COMPANY, Limited:

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Cleveland
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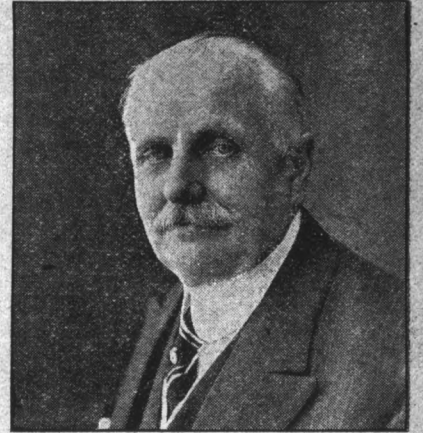
WORLD EVENTS IN PICTURES



A Woman who has Discovered Something New Under the Sun. Miss Mabel Wagnalls is a Famous Author and Pianist and has Originated the Art of Music Imagery.



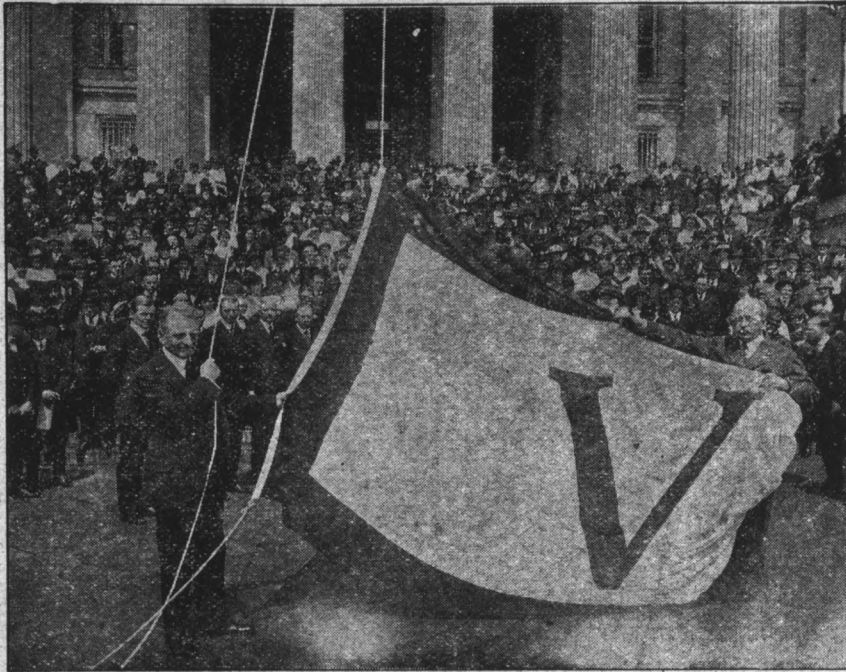
First Session of the German Cabinet Formed by Chancellor Scheidemann at the Request of President Ebert.



F. W. Woolworth, Originator of the Five and Ten Cent Store, who Died on April 8 in his Sixty-seventh Year.



Miss Jeanette Rankin, the First Woman Elected to Congress, sailed recently to attend the Woman's Permanent Peace Session, to be held in Switzerland some time in May.



Secretary Glass and J. H. Burton, (Originator of Honor Flag Campaigns), Hoisting the Victory Loan Flag Over the U. S. Treasury Department.



Vice-Admiral William Snowden Sims—Commander-in-Chief of the U. S. Naval Forces Operating in Foreign Waters, is Extended a Most Cordial Welcome Home. The Lower Picture Shows the Admiral and His Family.



Little Warren Pershing, Son of General John J. Pershing, Sailed April 7 for France, to see his "Daddy." It will be First Time Warren has seen his Father Since the General Left for France. On the Left is Secretary of War Baker, who also Sailed on the Leviathan.



The Latest Photo of President and Mrs. Wilson, taken in Paris Just Prior to his Recent Illness. The Couple are Entering the Gate of the Foreign Office at the Quai D'Cresay, Paris.



These are the First Pictures to be Received in this country of the Actual Conflict Between the German Troops and the Soldiers of Poland. In the Lower Picture German Troops have Arrested a Polish Citizen and are taking him to the office of the Commander Blindfolded.



A Panoramic View of the First Light American Tank Brigade which was Organized and Trained in France Solely by American Officers.

"U-S" POTASH

Manufactured and Distributed by the
SOLVAY PROCESS CO.

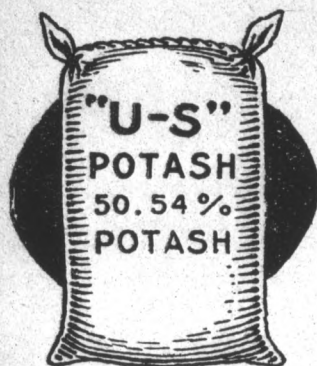
POTATO and beet growers, as well as owners of muck land farms, will be glad to know that a plentiful supply of "U-S" (made in America) Potash is now available for their use.

At the time that America's supply of Potash was cut off by the war, we knew that an American potash could be produced. We had enough confidence, also, in the farm owners of this country to know that once the American product was developed they would stand by it.

"U-S" Potash was the result—a very much higher grade of potash than any other grade ever offered. (50.-54% Potash.)

It comes from our own plants located on the brine lakes of the west. It is manufactured and distributed by us, and not through the usual middle-man channels.

Quick Deliveries Assured
Shipped In 200 lb. Bags



MADE IN AMERICA

The Solvay Process Co.
2091 Jefferson Ave. Detroit



EWALT'S SIR HECTOR
(A. K. C. No. 244,685)

EWALT'S SIR HECTOR

REGISTERED SCOTCH COLLIE

At Stud Fee \$15.00

Michigan's Champion Cattle Dog.
Ship your females for breeding.

Thoroughbred puppies sired by this dog for sale. Also thoroughbred Airedales. Puppies of all breeds bought and sold; write me if you have any puppies for sale, males or females.

DR. W. AUSTIN EWALT, Mt. Clemens, Mich.

15% More Wool

That's what you'll get by shearing with a machine—tests have proved it. Old methods of shearing leave too much wool on the sheep. The Stewart No. 9 Ball Bearing Shearing Machine shears fleeces up to 300 head and leaves no second cuts—Price \$14. You can get it by sending \$2 and pay balance on arrival. Write for catalog.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. 5127, 12th St. and Central Ave., Chicago, Ill.

Binder Twine Standard 500 ft. to the lb.
\$20.50 per 100 pounds, Carload lots 1/2 cent less per pound. Order now.

Write for Louis Lesse, Dep. V, Milwaukee, Wis.

POULTRY

WHITE ORPINGTON Eggs \$1.50 per 15.
W. E. WEST & SON, R. 1, East Lansing, Mich.

White Wyandotte Free range flock 80 Duston's Strain hens mated to 7 Martin's Regal Strain Cockerels, 15 eggs by Parcel Post \$2.00 by ex. \$3 per 100.
VERN MOORE, Hartford, Mich.

White Wyandotte eggs for hatching \$5.00, \$3.00 \$1.50 per 15. \$7.00 per hundred. Pen No. 1, \$10 per 15.
DAVID RAY, 709 Norris St., Ypsilanti, Mich.

Silver, Golden & White Wyandottes from fine quality Stock. Eggs by P. post prepaid \$3.00 per 15, \$5.00 per 30, \$8.00 per 50. C. W. Browning, R. 2, Portland, Mich.

S. C. W. Leghorns, 200 egg strain, large, pure white. Pens selected by E. C. Foreman, poultry specialist M. A. C. eggs 15 per \$1.50; 100 \$10. Mrs. Guy Haynard, Scotts, Mich.

Pekin ducks, either sex, \$4.00 each. amoth Bronze turkeys, Toulouse geese, S. C. W. Leghorn cockerels. Berkshire gilts and sows. Chase Stock Farm, Marlette, Mich.

A Special Clubbing Bargain

No. 8.

Michigan Farmer, 1 yr., wk. \$1.00
Breeder's Gazette, wk. 1.50
Woman's World, mo.50
American Boy, mo. 2.00

Regular price \$5.00

OUR PRICE ONLY \$3.90

SEED OATS

Get the best—the
Michigan Grown Wolverine
the M.A.C. seed that goes
20% better than the Worthy

PRICES—

Prices in 16-oz. heavy grain bags delivered to your station.
1/2 bu. \$2.50
1 bu. 3.25
2 1/2 bu. 7.00
In 10 bu. lots, f. o. b. Lansing, \$2.00 per bu. Bags extra at 50c.

Shipped by Prepaid Express
Harry E. Saier, Seedsman
Box 23, Lansing, Mich.

Silver's "Ohio"

2 or 3 Man Machines

Produce your own cheap feed—Silverized Silage—fine, even cut, mold-proof silage. Get an "Ohio" for your own work—variety of sizes from 4 h.p. up to 300 tons daily capacity. Big features—beater feed—spring-proof knives, friction reverse, direct drive. 66 years' leadership.
Write for Catalog
Silver Mfg. Co.
Box 391
Salem, Ohio
"Modern Silage Methods," 34 pages, 25 cents.

Jones' Hired Man---By G. W. Tuttle

HUNG on memory's wall is a life-size picture of Jones' hired man, although three decades have fled since this man of mystery passed away in an asylum for the insane. When I think of Tom Black I say, "How sweet, or how bitter, is a woman's tongue." "How much stranger than fiction is life."

He was tall, stooping, sober—but how kind. He always seemed thoughtful, generous, unselfish. He was a fixture with Jones, as much a part of the ranch as were the buildings and tools. And why not? Did not the ranch bring forth in profusion at the touch of his master hand? Even the old hedgerow of Cherokees blossomed forth in new life and vigor at his touch, while Jones' cross-grained and ill-tempered old cow would stand meekly for him while the milk flowed in a steady stream to the foaming pail.

But he was a man of mystery. He never referred to his past—it was a sealed book. For some years now he had been Jones' hired man, respected by his employer and liked by every man who chanced to rub elbows with him. He was supposed to be a bachelor, but no such information ever fell from his lips for he was silent as the grave concerning his past.

But to Pasadena one day came a man who was searching for Tom Black and when he saw him he called him "Father." Then the mystery was solved, the unknown became known, and we discovered that truth is indeed stranger than fiction.

Tom Black, when a young man, had a nagging wife who made his life miserable. He had also young children, whom he loved sincerely. But his wife nearly drove him frantic with her fault-finding. One fateful morning the climax came. His tormentor said, "I wish you would clear out and never come back until you are worth enough to purchase a home for your family."

Without a word Tom Black walked out of the door and disappeared. He failed to return at nightfall. His wife made inquiry, but in vain. It was as if the earth had opened and swallowed him up. He had taken the nagging wife at her word. Years passed by and the children grew to sturdy manhood and womanhood. The nagging wife died. Still no word from the father-wanderer. At last the elder son learned that his father was in Pasadena, California.

In vain the son endeavored to prevail on the father to accompany him on his return to the east. No, he was in California, and in California he would stay. But after his son's return there was a gradual change. He began to act strangely; his mind began to fail. The troubles that he had nursed in secret through all the years were too much for him. His mind failed, and he passed his last years in an asylum for the insane.

News of the Week

Wednesday, April 16.

THE soviet government is reported to have appropriated \$4,000,000 monthly for propaganda purposes.—German government troops are defeated in a battle at Munich for the central railway station.—The Czecho-Slovak delegates in Paris charge the eastern provinces of Germany with secretly building a new army to oppose the Entente if necessary.—Canadian veterans of the great war urge legislation to bar immigration into Canada.—Criticisms of the military methods used by Japan to restore order in Korea are reaching this country.—A general harbor strike involving 16,000 thousand workers threatens New York's trans-Atlantic shipping.—Approval has been granted the introduction of the moving picture into the Detroit schools for instruction purposes.

Thursday, April 17.

THE political situation in Turkey and Egypt is reported in a critical state.—Spanish influenza results in the death of 400,000 people in Germany the last eighteen months.—Fourteen American and six French soldiers are killed in a train wreck near Lemans, France.—Income tax statistics show that this country now has 17,000 more millionaires than when the war began.—The Polish Diet is purchasing large quantities of cotton to supply the textile industry of that country with raw material.—Wheat seeding in the northwest is considerably delayed by heavy rains.—Hog Island shipyard launches its twenty-third ship.—Allied governments decide not to wait beyond May 15 for a definite answer from Germany as to whether she will sign or refuse to sign the peace treaty.

Friday, April 18.

THE Swiss federal council decides to recognize the new German government.—The British government will end the censorship on letters to the United States and northern European countries within two weeks.—Germans added over \$300,000,000 to their savings accounts in 1918, according to advices from the Netherlands.—Seven former German submarines enroute from France to England are lost in a storm.—Exports from United States in March totaled \$605,000,000.—It is decided that the Kiel fortifications are to be preserved.—France suddenly halts demobilization, pending the arrival of the German peace envoys.

Saturday, April 19.

THE first unit of the 32nd Division re-crosses Rhine on their homeward trip.—Danzig is to become an international port.—Local fighting continues in Bavaria with Munich isolated from the outside world.—Japan is sending additional troops to suppress revo-

lutionary uprisings in Korea.—Washington officials learn that the Bolshevik position in eastern Russia is nearing collapse, and that the Entente governments will soon recognize the Omsk government whose forces have been active in suppressing the Leninist Socialistic undertakings.—The internal revenue officials refuse to sell brewers' stamps for the manufacture of beer containing two and three-quarters per cent alcohol.—The Michigan house of representatives defeats a bill to increase salaries of justices of the supreme court.—House also passes a bill providing for the grading of potatoes according to the U. S. grade measurements.

Sunday, April 20.

BECAUSE of possible agitation in Italy, in the event of an adverse decision by the peace congress on the Italian question, the commander of the American expeditionary forces orders all American troops and war workers out of the country.—Count Czernin, former Austro-Hungarian foreign minister is arrested while attempting to reach Switzerland.—More British troops are being sent to India to restore order in seditious sections of that country.—Captain White makes the first non-stop aerial flight from New York to Chicago in six hours and fifty minutes.—Preparations are now being made in Germany for a referendum vote on the peace treaty if the terms are considered too harsh.—A Chilean commercial mission arrives in New York.—American prohibition upsets the French wine market.

Monday, April 21.

RUSSIAN and British troops are pursuing Bolshevik forces in northern Russia.—Control of the Vienna government is reported to be in the hands of the Bolsheviks.—Italy threatens to rule Fiume and control the Adriatic.—The New England telephone operators call off their strike.—Churches of twenty-seven denominations have set aside May 4 to aid returning soldiers to secure positions.—Victory Loan campaign opens.

Tuesday, April 22.

MANY cities and districts of the country complete the sale of their quota to the Victory Loan.—Italy blocks further consideration of the Adriatic question.—The Czecho-Slovaks deny that Jews are being persecuted in their domains.—The regent of Finland dismisses his cabinet.—Strikers fire on the police in Limerick, Ireland.—The United States modifies export restrictions to aid European countries.—May 1 is designated as a day of special observance in honor of the late Fred L. Keeler, Superintendent of Public Instruction of Michigan.

"By the Way"

A PROBLEM.

"How you gettin' on wid youah 'rithmetic, Lou?"
 "Well, I done learned to add up de oughts, but de figgers bodder me."

TRANSPARENT.

"How's your son getting on in the army, Mrs. Blinks?"
 "Oh, it's very hard for him. You see, he's so thin, poor fellow, that every time he right-turns they mark him absent."

WHERE HE FED THEM.

Farmer—"That's a fine lot of pigs your father's got. How does he feed them?"

Tenderfoot—"With corn."

Farmer—"In the ear?"

Tenderfoot—"No, in the mouth."

SIMPLE.

"I am particularly liable to seasickness," said a young naval recruit to the officer in charge. "Could you tell me what to do in case of an attack?"
 "Tain't necessary, my boy," replied the officer, "you'll do it."

THE BROKEN TEAPOT.

Little Boy—"A penny'orth each of liniment and liquid cement, please."
 Chemist—"Are they both for the same person? Or shall I wrap them in separate packages?"
 Little Boy—"Well, I dunno. Muvver's broke 'er teapot, so she wants the cement; but favver wants the liniment. 'E's what muvver broke 'er teapot on."

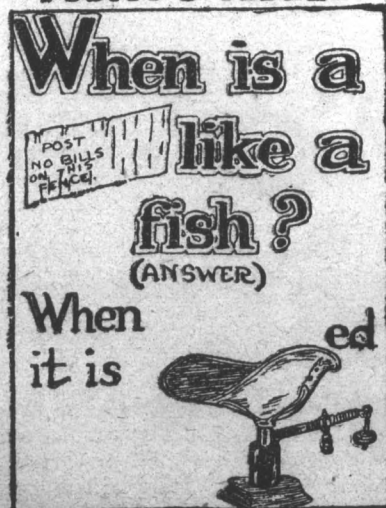
WELL LUBRICATED.

The motorist emerged from beneath the car and struggled for breath. His helpful friend, holding the oil can, beamed upon him.
 "I've just given the cylinder a thorough oiling, Dick, old man," said the helpful friend.
 "Cylinder," said the motorist, heatedly, "that wasn't the cylinder; it was my ear."

FOOLISHNESS.

A farmer went into a hardware store, where a clerk wanted to sell him a bicycle. "A bicycle won't eat its head off, and you can ride round your farm on it. I can let you have one for thirty-five dollars."
 "I'd rather put the money into a cow," said the farmer.
 "You'd look mighty foolish riding round on a cow," said the hardware man.
 "Well, no more foolish than I would milking a bicycle, I reckon."

TODAY'S RIDDLE



This Paint will Save Over Half the Cost

of Painting Any Farm Building This Spring!

Guaranteed!

WEATHERWAX puts an end to the high cost of painting farm buildings. We will sell it to you under a positive guarantee that you can paint your farm buildings with WEATHERWAX for less than half the total cost of painting them with any other paint on the market today!

There are no strings tied to that guarantee, either. Take your WEATHERWAX home—use one-fourth of any one can or barrel according to our directions—and if you are not entirely satisfied that WEATHERWAX spreads twice as far as any other paint and requires less than one-half as long to apply, just return the unused WEATHERWAX and your money will be refunded in full.

We know that WEATHERWAX will save half your money. We know that it will last far longer than any paint that stays entirely on the outside of the wood. And we know that our price is at least \$2 LESS PER GALLON than the price of first class linseed oil paint.

But we cannot expect you to know these things, unless you have already used WEATHERWAX. So we are going to give you and every other farmer an opportunity to try WEATHERWAX entirely at our risk.

WEATHERWAX is not a mere surface paint. It also sinks under the surface of the wood and fills the wood cells with a permanent filler of waterproof liquid wax. No matter how long the building stands, that wax can never get out of the wood cells and leave the wood unprotected. It stays there for keeps. It can never peel, crack or blister.

Sold on Approval—Send No Money!

NOW is the time to order your paint. If you wait too long it may be impossible to get help to do your painting this spring. Don't put it off. Fill out the coupon order blank at the bottom of this advertisement and mail it to us TODAY—before you mislay this paper.

As soon as we receive your order we will ship your paint direct to your own local lumber or paint dealer if we have no regular dealer in your town. Don't send us any money. The dealer will let you know when the paint arrives and you pay him for the paint when you get it—not way before. And don't forget this—if you are not satisfied after using not over one-fourth of the first can of WEATHERWAX you open, you can take the whole order right back to that same dealer and he will return your money in full. You take no risk.

We publish an elaborate circular telling all about WEATHERWAX and showing colors. Every lumber and hardware dealer in this state has been supplied with one of these circulars. Your nearest dealer can show you the colors, or we will gladly mail you our WEATHERWAX CIRCULAR on request. Our colors are standard and non-fading, however, and you are perfectly safe in ordering direct from this advertisement if you want quick action.

No Painting Experience Required

It's impossible to go wrong with WEATHERWAX. Anybody can do a perfect job of painting with this famous paint, without previous experience. It is not sticky and it will not blister or show brush marks. The finish is flat and waxy, without any temporary shine or gloss. Best paint you ever saw for rough siding and shingle roofs.

We save you trouble and expense by delivering your paint through a reliable local dealer right in your own town. Send us the name of your dealer. Mail your order direct to us at Indianapolis—NOW—and save time, trouble and money.

The Reilly Company
 Indianapolis, Ind.

Factories: Indianapolis | Minneapolis
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BUY FOR LESS
 Save \$15 to \$200 NOW
Cash or Easy Terms
 Write for Reduced Prices on **WITTE** Engines—all sizes—2 to 30 H.P.—Kerosene—Gasoline—Stationary—Portable—Saw-Rigs. If you need POWER to pump, saw, grind, fill silo, or do other hard work, be sure to get my money saving offer. I make better engines—guarantee longer—sell for less—Valuable Book FREE.—Ed. H. Witte, Pres.
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 Write Today! Learn why best pumping service is given by **STOVER SAMSON Windmills**. The original double geared, strongest, dependable **STOVER MFG. & ENGINE CO.**, 1642 Samson Ave., Freeport, Ill. Also Stover Good Engines, Feed Mills, etc. Free Catalog.
Ear Tags FOR STOCK
 Tag your stock—best and cheapest means of identification for Hogs, Sheep and Cattle. Name, address and number stamped on tags. Catalog mailed free on request.
F.S. Burch & Co., 145 W. Huron St. Chicago



GUARANTEE!

We guarantee our products to be exactly as described in our advertising matter.

We guarantee that the portion of our paints which penetrates beneath the surface will remain there permanently.

Our dealers are authorized to refund purchaser's money in full, if the purchaser is not satisfied with any of our paints after having applied not over one-fourth of any can or barrel of paint. Simply return the remaining three-fourths of the can of paint and your money will be refunded.

THE REILLY COMPANY, Indianapolis, Ind.

Prices and Colors

No.	5 Gal. Cans	50 Gal. Barrels
No. 2		
Chocolate Brown, per gal.	\$2.57	\$2.40
No. 101		
Standard Red, per gal.	\$2.57	\$2.40
No. 102		
Dark Red (Maroon) per gal.	\$2.57	\$2.40
No. 1		
Clear Brown Paint, per gal.	\$1.88	\$1.70

(No. 1 contains no pigment and is for use only over unpainted wood.)

We make no other colors except Black. Save time by not asking for light colors or white.

Barrels contain 50 gallons of paint. Half barrels contain 25 gallons.

NOTE: WEATHERWAX works perfectly over old paint.

Mail This Order NOW!

THE REILLY COMPANY, Indianapolis, Ind.
 Please enter my order for the following shipment of WEATHERWAX under your offer and printed guarantee in Michigan Farmer.

Gals. _____ Color _____ Price per gal. _____
 Gals. _____ Color _____ Price per gal. _____

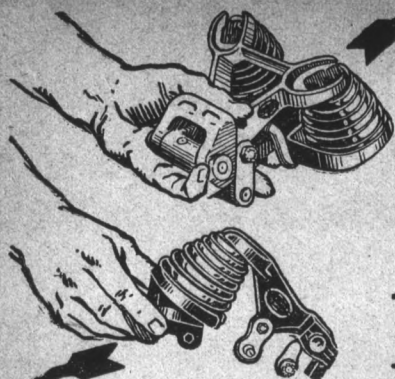
To be delivered freight prepaid, through the following dealer:

Name _____ Town _____
 Buyer's Name _____ R. F. D. _____
 Town _____ State _____

Salesmen Wanted

We pay salary to good subscription getters, who can devote their entire time to our work. The offer our salaried men handle is especially attractive to farmers.

The Michigan Farmer, Detroit



Make your Ford Transportation even more Economical.

NEARLY a million Ford owners have found that maintenance and tire costs are reduced approximately 30 per cent and a large saving is made in fuel by the

For
FORD
Cars



For
FORD
Trucks

Shock Absorber

They protect riders from disagreeable shocks and jolts—make any Ford ride as smoothly and comfortably as a \$2,000 car. They make the car safer, preventing sideways at high speeds. The same shocks that disturb the passengers, also rack, strain and wear out the car. Hasslers prevent squeaks, rattles and deterioration. They make a Ford car or a Ford one-ton truck last longer and give it a higher resale value. The spiral, conical springs of chrome-vanadium steel compress on either upward or downward movements. They last and make the car or truck last.

10-Day Trial Offer

Don't ride without Hasslers because someone tries to discourage you. They are a quality product—worth their price. The Hassler dealer in your vicinity will put them on for 10 days' trial. Your money refunded if you say so. Write for name of dealer and Trial Blank.

ROBERT H. HASSLER, Inc.
1140 Naomi St., Indianapolis, Ind.
Canadian Factory, Hamilton, Ontario

Write Quick FREE

BROWN'S BARGAIN FENCE BOOK

DIRECT from FACTORY—FREIGHT PREPAID

The biggest money-saving fence catalog you ever received. Write for it today. See the money you can save—compare my Low Factory, Freight Prepaid prices on fence, gates, barb wire, etc. Don't buy until you get this Bargain Fence Book. 160 styles. Samples to test and book free.

THE BROWN FENCE & WIRE CO., Dept. 349 Cleveland, Ohio

FENCE

Direct to Farmer at Wire Mill Prices

CATALOG FREE

KITSELMAN BROS. DEPT. 278 MUNCIE, INDIANA

American Fence

Full gauge wires; full weight; full length rolls. Superior quality galvanizing, proof against hardest weather conditions.

Special Book Sent Free. Dealers Everywhere.

AMERICAN STEEL AND WIRE CO.
CHICAGO NEW YORK

Bee Supplies

Bee Hives, Sections, Comb Foundation, Smokers, etc. Send for catalog. Can supply beginner's outfit either with or without bees. Circular on request. Beeswax wanted.

Berry Baskets

Standard quart, wood berry baskets, and wax-lined paper baskets, 16 quart crates in flax. Send for price sheet.

M. H. HUNT & SON
Box 525 - Lansing, Michigan

The Threshing Problem Solved

Threshes cowpeas and soy beans from the mown vines, wheat, oats, rye and barley. A perfect combination machine. Nothing like it.

"The machine I have been looking for for 20 years."

W. F. Massey. "It will meet every demand." H. A. Morgan, Director Tenn. Exp. Sta. Booklet 36 free.

Koger Pea & Bean Thresher Co.
MORRISTOWN, TENN.

TREES Plant for Profit

OUR TREES GROW

All Kinds Trees And Plants.

Grow your own fruit. Improve value and appearance of farm and home. Plant this spring. Large stock, apple, peach, pear, etc. Choice trees.

Mitchells' Nursery, Beverly, Ohio

SECURITY

DANGER

Eight million dollars worth of property is destroyed by lightning in this country every year—and hundreds of lives.

Security Lightning Rods Give Guaranteed Protection

Made of 99.8% pure copper, by a reputable manufacturer, in business for more than 25 years. Approved by National Board of Fire Underwriters and State Insurance Exchanges.

Our Patented Security Water Ground Connection insures permanently moist grounding under all conditions.

Write for free book—Stop Lightning Losses

Security Lighting Rod Co.
505 Pine St. Burlington, Wis.

Chi-Namel

FURNITURE POLISH

A varnish food, made by varnish makers, for keeping varnished surfaces permanently bright. Removes white spots, blue bloom and surface scratches. Contains no grease, acids or grit. Will not collect dust nor soil clothing.

VISIT YOUR NEAREST CHI-NAMEL STORE

where you will find Chi-Namel quality-finishes for everything in the home—for new or old, hard or soft woodwork, floors, doors, furniture, radiators, picture frames, bric-a-brac, etc.

THE OHIO VARNISH CO., CLEVELAND, O.

"Beyond the Frontier"

"M. de Tonty," I said, determined now to address him in all frankness. "It is true that I am legally the wife of this man of whom you speak, but this only enables me to know his motives better. This condemnation of Sieur de Artigny is not his plan alone; it was born in the brain of La Barre, and Cassion merely executes his orders. I have here the written instruction under which he operates."

I held out to him the page from La Barre's letter.

CHAPTER XXVIII.

The Court Martial.

DE TONTY took the paper from my hand, glanced at it, then lifted his eyes inquiringly to mine.

"Tis in the governor's own hand. How came this in your possession?"

"I found it in Cassion's private bag last night, under the berth yonder. Later he came and carried the bag away, never suspecting it had been opened. His commission was there also. Read it, Monsieur."

He did so slowly, carefully, seeming to weigh every word, his eyes darkening, and a flush creeping into his swarthy cheeks.

"Madame," he exclaimed at last. "I care not whether the man be your husband, but this is a damnable conspiracy, hatched months ago in Quebec."

I bowed my head.

"Beyond doubt, Monsieur."

"And you found nothing more, no documents taken from Hugo Chevet?"

"None, Monsieur; they were either destroyed in accordance with La Barre's instructions, or else M. Cassion has them on his person."

"But I do not understand the reason for such foul treachery. What occurred back in New France to cause the murder of Chevet, and this attempt to convict De Artigny of the crime?"

"Sit here, Monsieur," I said, my voice trembling, "and I will tell you the whole story. I must tell you, for there is no one else in Fort St. Louis whom I can trust."

He sat silent, bareheaded, his eyes never leaving my face as I spoke. At first I hesitated, my words hard to control, but as I continued, and felt his sympathy, speech became easier. All unconsciously his hand reached out and rested on mine, as though in encouragement, and only twice did he interrupt my narrative with questions. I told the tale simply, concealing nothing, not even my growing love for De Artigny. The man listening inspired my utmost confidence—I sought his respect and faith. As I came to the end his hand grasp tightened, but, for a moment, he remained motionless and silent, his eyes grave with thought.

"Tis a strange, sad case," he said finally, "and the end is hard to determine. I believe you, Madame, and honor your choice. The case is strong against De Artigny; even your testimony is not for his defense. Does M. Cassion know you saw the young man that night?"

"He has dropped a remark, or two, which shows suspicion. Possibly some one of the men saw me outside the Mission House, and made report."

"Then he will call you as a witness. If I know the nature of Cassion his plan of trial is a mere form, although doubtless he will ask the presence of Captain de Baugis, and M. de la Durantaye. Neither will oppose him, so long as he furnishes the proof necessary to convict. He will give his evidence, and call the Indian, and perchance a soldier or two, who will swear to whatever he wishes. If needed he may bring you in also to strengthen the case. De Artigny will make no defense, because he has no witnesses, and because he has a fool notion that he might compromise you by telling the whole truth."

"Then there is no hope, nothing we can do?"

"No, Madame; not now. I shall not be consulted, nor asked to be present. I am under strict order from La Salle not to oppose La Barre's officers, and, even if I were disposed to disobey my chief, I possess no force with which to act. I have but ten men on whom I could rely, while they number over forty." He leaned closer, whispering, "Our policy is to wait, and act after the prisoner has been condemned."

"How? You mean a rescue?"

"Ay, there lies the only hope. There is one man here who can turn the trick. He is De Artigny's comrade and friend. Already he has outlined a plan to me, but I gave no encouragement. Yet, now, that I have the truth, I shall not oppose. Have you courage, Madame, to give him your assistance? 'Tis like to be a desperate venture."

I drew a deep breath, but with no sense of fear.

"Yes, Monsieur. Who is the man I am to trust?"

"Francois de Boisrondet, the one who led the rescue party last night."

"A gallant lad."

"Ay, a gentleman of France, a daring heart. Tonight—"

The door opened, and the figure of a man stood outlined against the brighter glow without. De Tonty was on his feet fronting the newcomer, ere I even realized it was Cassion who stood there, glaring at us. Behind him two soldiers waited in the sunshine.

"What is the meaning of this, M. de Tonty?" he exclaimed, with no pretense at friendliness. "A rather early morning call, regarding which I was not even consulted. Have husbands no rights in this wilderness paradise?"

"Such rights as they uphold," returned the Italian, erect and motionless. "I am always at your service, M. Cassion. Madame and I have conversed without permission. If that be a crime I answer for it now, or when you will."

It was in Cassion's heart to strike. I read the desire in his eyes, in the swift clutch at his sword hilt; but the sarcastic smile on De Tonty's thin lips robbed him of courage.

"Tis best you curb your tongue," he snarled, "or I will have you in the guardhouse with De Artigny. I command now."

"So I hear. Doubtless you could convict me as easily."

"What do you mean?"

"Only that your whole case is a tissue of lies."

"Pah! you have her word for it, no doubt. But you will sing a different song presently. Ay, and it will be her testimony which will hang the villain."

"What is that you say, Monsieur—my testimony?"

"Just that—the tale of what you saw in the Mission garden at St. Ignace. Sacre, that shot hits, does it! You thought me asleep, and with no knowledge of your escapade, but I had other eyes open that night, my lady. Now will you confess the truth?"

"I shall conceal nothing, Monsieur."

"Twill be best that you make no attempt," he sneered, his old braggart spirit reasserting itself as De Tonty kept silent. "I have guard here to escort you to the Commandant's office."

"You do me honor." I turned to De Tonty. "Shall I go, Monsieur?"

"I think it best, Madame," he replied soberly, his dark eyes contemptuously surveying Cassion. "To refuse would only strengthen the case against the prisoner. M. Cassion will not, I am sure, deny me the privilege of accompanying you. Permit me to offer my arm."

I did not glance toward Cassion, but felt no doubt as to the look on his face; yet he would think twice before laying hand on this stern soldier who had offered me protection. The guard at the door fell aside promptly, and



permitted us to pass. Some order was spoken in a low tone, and they fell in behind with rifles at trail. Once in the open I became for the first time, aware of irregular rifle firing, and observed in surprise, men posted upon a narrow staging along the side of the log stockade.

"Is the fort being attacked?" I asked.

"There has been firing for some days," he answered, "but no real attack. The savages merely hide yonder amid the rocks and woods, and strive to keep us from venturing down the trail. Twice we have made sortie, and driven them away, but 'tis a useless waste of fighting." He called to a man posted above the gate. "How is it this morning, Jules?"

The soldier glanced about cautiously, keeping his head below cover.

"Thick as flies out there, Monsieur," he answered, "and with a marksman or two among them. Not ten minutes since Bowain got a ball in his head."

"And no orders to clear the devils out?"

"No, Monsieur—only to watch that they do not form for a rush."

The Commandant's office was built against the last stockade—a log hut no more pretentious than the others. A sentry stood at each side of the closed door, but De Tonty ignored them, and ushered me into the room. It was not large, and was already well filled, a table littered with papers occupying the central space, De Baugis and De la Durantaye seated beside it, while numerous figures were standing pressed against the walls. I recognized the familiar faces of several of our party, but before I recovered from my first embarrassment De Baugis arose, and with much politeness offered me a chair.

De Tonty remained beside me, his hand resting on my chair back, as he coolly surveyed the scene. Cassion pushed past, and occupied a vacant chair, between the other officers, laying his sword on the table. My eyes swept about the circle of faces seeking De Artigny, but he was not present. But for a slight shuffling of feet, the silence was oppressive. Cassion's unpleasant voice broke the stillness.

"M. de Tonty, there is a chair yonder reserved for your use."

"I prefer remaining beside Madame Cassion," he answered calmly. "It would seem she has few friends in this company."

"We are all her friends," broke in De Baugis, his face flushing, "but we are here to do justice, and avenge a foul crime. 'Tis told us that madame possesses certain knowledge which has not been revealed. Other witnesses have testified, and we would now listen to her word. Sergeant of the guard, bring in the prisoner."

He entered by way of the rear door, manacled, and with an armed soldier on either side. Coatless and bareheaded, he stood erect in the place assigned him, and as his eyes swept the faces, his stern look changed to a smile as his glance met mine. My eyes were still upon him, seeking eagerly for some message of guidance, when Cassion spoke.

"M. de Baugis will question the witness."

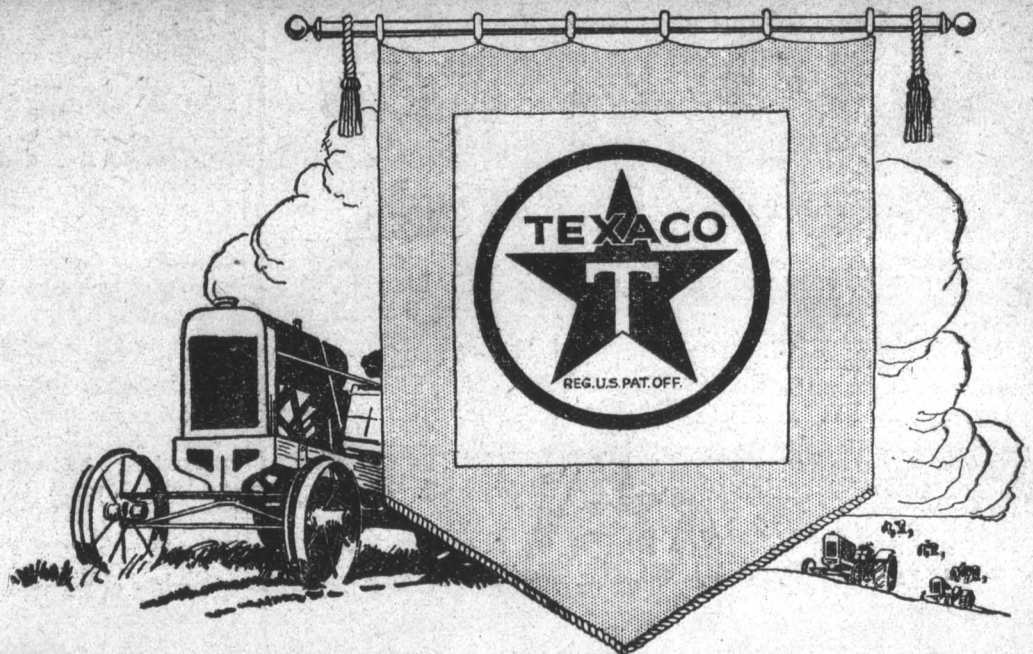
"The court will pardon me," said De Artigny. "The witness to be heard is Madame?"

"Certainly; what means your interruption?"

"To spare the lady unnecessary embarrassment. She is my friend, and, no doubt, may find it difficult to testify against me. I merely venture to ask her to give this court the exact truth."

"Your words are impertinent."

"No, M. de Baugis," I broke in, understanding all that was meant. "Sieur De Artigny has spoken in kindness,



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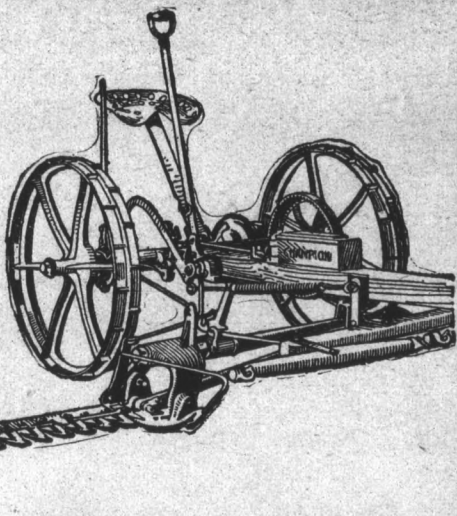
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and has my thanks. I am ready now to bear witness frankly."

Cassion leaned over whispering, but De Baugis merely frowned, and shook his head, his eyes on my face. I felt the friendly touch of M. de Tonty's hand on my shoulder, and the slight pressure brought me courage.

"What is it you desire me to tell, Monsieur?"

"The story of your midnight visit to the Mission garden at St. Ignace, the night Hugo Chevet was killed. Tell it in your own words, Madame."

As I began my voice trembled, and I was obliged to grip the arms of the chair to keep myself firm. There was a mist before my eyes, and I saw only De Artigny's face, as he leaned forward eagerly listening. Not even he realized all I had witnessed that night, and yet I must tell the truth—the whole truth, even though the telling cost his life. The words came faster, and my nerves ceased to throb. I read sympathy in De Baugis' eyes, and addressed him alone. Twice he asked me questions, in so kindly a manner as to win instant reply, and once he checked Cassion when he attempted to interrupt, his voice stern with authority. I told the story simply, plainly, with no attempt at equivocation, and when I ceased speaking the room was as silent as a tomb. De Baugis sat motionless, but Cassion stared at me across the table, his face dark with passion.

"Wait," he cried as, though thinking me about to rise. "There are questions yet."

"Monsieur," said De Baugis coldly. "If there are questions it is my place to ask them."

"Ay," angrily beating his hand on the board, "but it is plain to be seen the woman has bewitched you. No, I will not be denied; I am Commandant here, and with force enough behind me to make my will law. Scowl if you will but here is La Barre's commission, and I dare you to ignore it. So answer me, Madame—you saw De Artigny bend over the body of your uncle, then dead?"

"I know not, Monsieur; but there was no movement."

"Why did you make no report?—was it to shield De Artigny?"

I hesitated, yet the answer had to be made.

"The Sieur de Artigny was my friend Monsieur. I did not believe him guilty, yet my evidence would have cast suspicion upon him. I felt it best to remain still, and wait."

"You suspected another?"

"Not then, Monsieur, but since."

Cassion sat silent, not overly pleased with my reply, but De Baugis smiled grimly.

"By my faith," he said, "the tale gathers interest. You have grown to suspicion another since, Madame—dare you name the man?"

My eyes sought the face of De Tonty, and he nodded gravely.

"It can do no harm, Madame," he muttered softly. "Put the paper in De Baugis' hand."

I drew it, crumpled, from out the bosom of my dress, rose to my feet, and held it forth to the Captain of Dragoons. He grasped it wonderingly.

"What is this, Madame?"

"One page from a letter of instruction. Read it, Monsieur; you will recognize the handwriting."

CHAPTER XXIX.

Condemned.

HE opened the paper gravely, shading the page with one hand so that Cassion was prevented from seeing the words. He read slowly, a frown on his face.

"Tis the writing of Governor La Barre, although unsigned," he said at last.

"Yes, Monsieur."

"How came the paper in your possession?"

"I removed it last night from a leather bag found beneath the sleeping bunk in the quarters assigned me."

"Do you know whose bag it was?"

"Certainly; it was in the canoe with me all the way from Quebec—Monsieur Cassion's."

"Your husband?"

"Yes, Monsieur."

De Baugis' eyes seemed to darken as he gazed at me; then his glance fell upon Cassion, who was leaning forward, his mouth open, his face ashen gray. He straightened up as he met de Baugis' eyes, and gave vent to an irritating laugh.

"Sacre, 'tis quite melodramatic," he exclaimed harshly. "But of little value else. I acknowledge the letter, M. de Baugis, but it bears no relation to this affair. Perchance it was unhappily worded, so that this woman, eager to save her lover from punishment—"

De Tonty was on his feet, his sword half drawn.

"Tis a foul lie," he thundered hotly. "I will not stand silent before such words."

"Messieurs," and De Baugis struck the table. "This is a court, not a mess room. Be seated, M. de Tonty; no one in my presence will be permitted to besmirch the honor of Captain de Chesnayne's daughter. Yet I must agree with Major Cassion that this letter in no way proves that he resorted to violence, or was even urged to do so. The governor in all probability suggested other means. I could not be led to believe he countenanced the commission of crime, and shall ask to read the remainder of his letter before rendering decision. You found no other documents, Madame?"

"None bearing on this case."

"The papers supposed to be taken from the dead body of Chevet?"

"No, Monsieur."

"Then I cannot see that the status of the prisoner is changed, or that we have any reason to charge the crime to another. You are excused, Madame, while we listen to such other witnesses as may be called."

"You wish me to retire?"

"I would prefer you do so."

I arose to my feet, hesitating and uncertain. It was evident though that the court intended to convict the prisoner. All the hatred and dislike engendered by years of controversy with La Salle, all the quarrels and misunderstandings of the past few months between the two rival commanders at the fort, was now finding natural outlet in this trial of Rene de Artigny. He was officer of La Salle, friend of De Tonty, and through his conviction they could strike at the men they both hated and feared. More, they realized also that such action would please Le Barre. Whatever else had been accomplished by my exhibit of the governor's letter, it had clearly shown De Baugis that his master desired the overthrow of the young explorer. And while he felt slight friendship for Cassion he was La Barre's man and would obey his orders. He wished me out of the way for a purpose. What purpose? That I might not hear the lying testimony of those soldiers and Indians, who would swear as they were told.

Tears misted my eyes, so the faces about me were blurred, but, before I could find words in which to voice my indignation, De Tonty stood beside me, and grasped my arm.

(Continued next week.)

BARLEY DISEASES IN MICHIGAN.

(Continued from page 649.)

er points—the freedom from stripe disease as a criterion for selecting barley fields to be saved for use in the community as seed. Clean seed in clean soil is the first principle in plant disease control.

"But,"—you ask—"can not these barley diseases be handled by seed treatment?"

Yes, and no. Ordinary formaldehyde treatment, either the wet or dry method, using one pint of formaldehyde to

fifty bushels of grain, will control covered smut perfectly, but will only partially prevent the stripe disease losses. Stripe disease was reduced, in tests in some Michigan fields following the dry treatment, from ten to three or five per cent.

In the dry formaldehyde treatments, which are the same as recommended for oats, one pint of formaldehyde is sprayed with a hand atomizer on the grain as it is shoveled over. The grain is then covered for four hours and planted at once.

This result was disappointing to the farmers who have learned to expect one hundred per cent control because of their common experience in fighting smuts.

The disease seems more deep-seated and harder to handle than smut. Whether this is due to greater resistance of the spores to formaldehyde or to a partial penetration of the barley kernels is not clear.

Accordingly, in Wisconsin, more strenuous treatment was devised. This consists of soaking the grain for an hour in formaldehyde, one pint to thirty gallons of water. It is evident that this is giving to barley a treatment that would seriously injure wheat, but the barley, like the oats, seems to be very hardy in formaldehyde handling. Even this treatment does not completely eliminate stripe, but it reduces the disease to small amounts.

What, then, is the recommendation for Michigan farmers? It first of all behooves them to look carefully at the field from which they take their barley seed. Pedigreed seed whose field inspections say nothing about prevalence of stripe and smut standards may be disappointing.

It is then necessary to treat. The writer realizes that the strenuous treatment which will, according to the Wisconsin experts, be most effective, is not feasible with large acreages. The college station has recommended that the ordinary formaldehyde treatment, either wet or dry method, be given every bushel planted as protected against barley covered smut. This is partial protection against stripe.

Then a portion of the barley, preferably that for an isolated field, should be treated in the stronger soaking fashion to furnish a seed supply for next year.

There is another extremely hopeful possibility for next year. The college pedigreed variety Michtooroo is so far as our surveys go, completely free from the disease. Indeed, all the strains growing in the college fields in 1917 were free from the disease except those brought in from the Wisconsin selections. It would seem that the Michigan selections started clean. The seed sent out for increase in the Crop Improvement Association was clean and thus will form a source of clean seed in 1920. Occasional contamination from local grown barleys will occur, but the rigid inspection given by the inspectors will detect this. In addition, Secretary Nicolson has insisted that the Crop Improvement barleys be treated by the strong soaking method in order to safeguard the increase barley.

At present, farmers like the barley crop. It seems to have a place in Michigan agriculture. It has its diseases—and what crop has not? But no farmer should become unduly discouraged. The diseases will not become so rampant as to take all the profit out of the crop, but they do, and will continue to, cut the profits noticeably. It is not too much to predict that the scientific workers will be able to devise methods of coping with the serious forms of barley diseases. Give the crop the best handling your facilities will permit and be on the alert for the clean sorts and improved methods.

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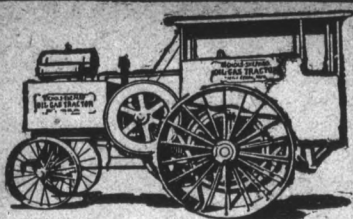
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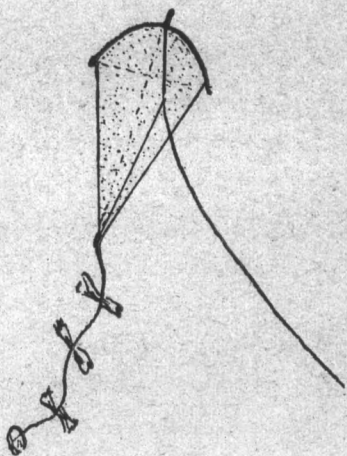
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Our Boys' and Girls' Department

A Hoop Kite



A HOOP kite is made with very simple materials. First, you will require the half of a hoop, for a medium-sized kite, a hoop from a butter-cask is about right and any grocer will be glad to give you one if you ask him. Choose the best portion of the hoop and cut off a piece a little smaller than half of it. Then, with the pocket knife thin the half hoop, taking care not to cut enough off to weaken it too much. Thin it equally all around, test-

ing it frequently by balancing it on the knife blade.

When the half-hoop is thinned nicely and properly balanced, cut a notch in the middle and also at each end. Next you must select a backbone, a piece of thin cane will do nicely if rather stiff, or a long strip of wood, say twenty-four to thirty inches long. Tie this to the notch in the center of the half-hoop, so as to leave about one inch sticking out at the top. Now tie a piece of stout string to one end of the half-hoop, or top, as we will now call it, pass the string once around the backbone and tie to the other end of the hoop. Now measure carefully and be sure that the backbone is exactly in the center of the two hoop ends. Having done this, join each end of the top with string to the bottom of the backbone, which we have previously notched to hold same. We now have our skeleton, or frame, complete.

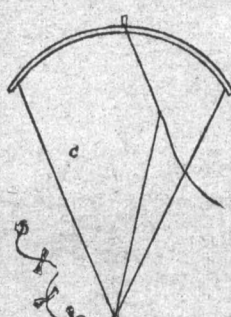
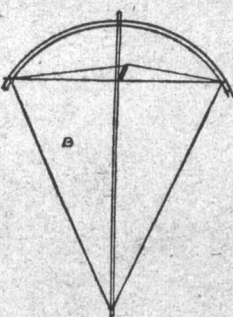
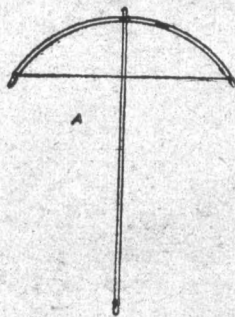
Next get a large sheet of paper, slightly larger than the frame. Place the frame on top of the paper and with knife thin the half hoop, taking care not to cut enough off to weaken it too much. Thin it equally all around, test-

string sides of the skeleton. Turn it over and paste two or three strips across the back over the backbone. This fastens the backbone to the cover and strengthens it.

Tie a string at the back from side to side, from one end of top to the other end of the top. Take a piece of wood about four inches long, cut a notch in each end of it and fit it between this string and the backbone, with one end on each.

Now to hang, tie a slack string from top to bottom on the front of the kite and to that attach the flying string at the point where the kite balances.

Tie another piece of string to the backbone for the tail, say about five yards long. Make some loops in the tail about two feet apart and put in tufts of paper, at the end of the tail tie a piece of turf. Now the kite is ready to fly and if you have followed each step carefully should soar aloft steadily in the wind.



Picture (A) Shows the First Step in Construction. (B) a Back View with Brace in Position. (C) Front View of Finished Kite.

Beet Clubs in Menominee County

By R. N. KEBLER

IN an endeavor to increase the sugar supply for America and her Allies, fifty-five young patriots of the soil planted half-acre plots in Menominee county last spring. These plots were inspected at least once during the growing season by the superintendent of the Menominee County Agricultural School. Each member that completed the project exhibited a sample of his beets at the county fair, and completed the work in the fall by sending in a report sheet on the cost of production, profit on investment, and writing a story on "How I Grew my Beets."

These fifty-five members grew on the average, twelve and two-thirds tons per acre at an average cost of \$68.25 and an average profit of \$60.01. This makes an average profit of \$30 to every child that grew one-half acre of beets. The above figures, of course, were taken from the members reporting on the project and making an average with those who had a plot, but did not report. The figures were procured by figuring the child and horse hours at fifteen cents, and the adult labor at the actual cost to the grower. The fertilizer cost per acre was \$20.50. A large part of this was commercial fertilizer, an application of barnyard manure having been applied to the crop that preceded the beets on the plot.

One of the most outstanding features of the whole undertaking was the remarkable yield and profit of Felix Forgette, living at Carney, Menominee

county. He grew eleven and a quarter tons on half an acre at a cost of \$41.62 and a profit of \$70.88. The following facts and figures were sent in by the boy and sworn to by the parents.

"I selected a piece of clay loam soil, well fertilized the year before, and cropped with potatoes and onions. This was plowed on April 26 and harrowed the following day. Ten pounds

of beet seed were planted May 10 in rows eighteen inches apart. The beets were hoed June 6 and blocked June 11. They were then cultivated once a week during the months of May and June. The harvest took place September 27 to 29, after which the beets were hauled directly to the loading station."

The items of his report were as follows:



Menominee County Agricultural School.

Rent of the land.....	\$ 2.50
Cost of commercial fertilizer...	6.37
Cost of seed and lime.....	5.10
Preparation of seed bed.....	4.50
Cost of planting.....	1.50
Hoeing and weeding.....	8.15
Cost of harvesting.....	4.25
Cost of hauling.....	8.25

Eleven and a quarter tons of beets at \$10.....\$112.50
Total cost of production..... 41.62

Profit\$ 70.88

Note what these figures bring out relative to the feeding habits, fertilization, soil type, etc., of sugar beets.

The best story on "How I Grew my Beets," by Rose Frazier, of Powers, Michigan:

"Our Uncle Sam says: 'Yes, we're going to wipe the Hun from the face of the earth, and then plant sugar beets where he and his followers trod, so as to sweeten the land for a better purpose than cruelty. We have stood manslaughter long enough and with food and brave Yankees in khaki we can whirl shells into the kaiser's brains, which would send him to his last resting place, where the worst of men will remain his venerable companions.'"

"The American call is, 'Food, Food, Food, for our fighting lads in France.'"

Our Prize Contest

TO the boy or girl writing the best letter, of less than 250 words on each of the following subjects, the Michigan Farmer will give a cash prize of \$1.00.

(Subject of letter to be mailed by May 5):

"The best hike I ever took."

(Subject of letter to be mailed by May 12):

"The worst bargain I ever made."

(Subject of letter to be mailed May 19):

"The best teacher I ever had."

We desire to make this contest a permanent feature of our Boys' and Girls' Department. A new subject will be added each week.

Write neatly with ink on one side of the sheet only. Give your age, full name and address.

Address your letters to The Boys' and Girls' Dept., Michigan Farmer, Detroit, Mich.

You ask this question, "Is Sugar Food?" The answer is, "Yes, and a very valuable food also." We all know that it is a necessary food so just stop a little and rest your imaginary eye on a half-acre sugar beet field.

Last spring, and at other preceding occasions, our school was visited by Mr. Hill and Mr. Nye, of the Menominee County Agricultural School. The main object of their visits was to interest the boys and girls to join the sugar beet club. The club talks and work became quite interesting and I quite fortunately dropped in as a sugar beet girl, and then for further work.

The work on our sugar beet plot was supposed to be done as far as possible by the grower himself, but if work was given it was permissible, or if help was hired it was the same admittance—only to pay fifteen cents per hour to the helper. These fifteen cents an hour looked too much to me so I simply dug to the sugar beet work alone.

I planted my beets the seventeenth of May on a fall-plowed and well-tilled piece of sod land. I knew the sod was not the best but its being well disked and dragged was what was left for my sugar beets.

While I planted the seed I thought

of a poem I learned when in the first grade. These few lines that interested me were:

In the heart of a seed buried deep, so deep;

A dear little plant lay fast asleep, "Wake! said the sunshine and creep to the light,"

"Wake! said the voice of the rain drops bright.

The little plant heard and it rose to see,

What the wonderful outside world might be.

In fifteen days this little poem came true and I pictured my plot as a little dream bed, for there I could see tiny green heads springing day after day. I also knew this meant instant work. I then cultivated my beets for the first time, with a hand cultivator. Then my after school work for a whole long week was to block sugar beets. I knew it at least was work well done.

I waited about a week before I thinned my beets. After thinning my spirits fell as I saw the weeds come again among my dear little plants; but with renewed effort and only a farm girl's muscle, I fought the little beasts just as Uncle Sam was fighting the kaiser. It was war work and I was a war worker. My beets were horse-cultivated three times after this during the summer and I felt proud when people told me that I took good care of my beets. Who wouldn't be proud of not only such work, but of being able to tell your class friends and teachers of your "thriving sugar beet crop."

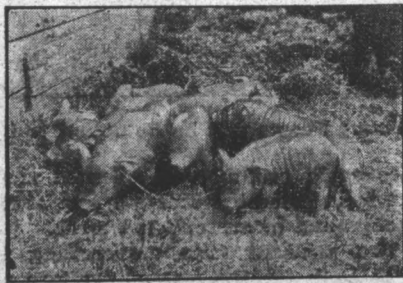
Not only my school books of this year and other years helped me to care for my beets, but the people who saw me working incessantly at them told me what they had done and what they thought I should do. I took it all as good advice because I knew that I was "young and foolish."

To tell the truth, I had my heart and soul on my sugar beet work and they say, "You cannot love anything but human beings." But I loved my sugar beets, and I hope that some of my sugar will help to strengthen a weakened soldier lad."

Figuring up the score on the four-point basis mentioned above, namely, plot, exhibit, report and story, Louise Kreiger, Nathan, Mich., is entitled to first place and she will receive a high-grade Holstein heifer calf valued at \$25. Exilda Horde, Stephenson, second place, will receive two high-grade Duroc or Poland China pigs valued at \$15. Katherine Friday, Hermansville, third place, will receive pen of White Rock or Leghorn hens and cockerel valued at \$10. Thelma Swanson, of Daggett, Mich., fourth place, will receive one high-grade Duroc or Poland China pig, valued at \$7.50, and Felix Forgette, of Carney, Mich., will receive a trio of poultry and ducks, valued at \$6.00.

The County Agricultural School desires to organize more junior clubs among the boys and girls of the county the coming summer. The Menominee River Sugar Company promises to pay us the same price they did for last year's crop in the face of the tremendous tumble it has taken. Here is a chance to show dad that you can earn your own spending money. Those not wishing to join the beet club may join the poultry, pig, sheep, or calf club. The Agricultural School has a special offer to a limited number wishing to get into these projects. Get in early on it.

R. N. KEBLER, Supt.



A Club Boy's Prize Winners.

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THE easiest, cleanest, safest and most satisfactory method of removing carbon deposits is with Johnson's Carbon Remover. It will save you from \$3.00 to \$5.00 over any other method without laying up your car and with much better results. After one application your car will run like it did the first 500 miles—quietly and full of "pep"—and you will secure the maximum power and speed from the minimum amount of fuel.

Johnson's Carbon Remover is a harmless liquid to be poured or squirted into the cylinders. It contains no acids and does not affect lubrication or interfere with the oil in the crank case. Millions of cans have been used. Recommended by many of the leading car Mfrs. including the Packard and Studebaker Cos.

JOHNSON'S CARBON REMOVER

A dose of Johnson's Carbon Remover—the engine laxative—will cure 80% of engine troubles. It will increase the power of your car—improve acceleration—stop that knock—quiet your motor—save your batteries—cut down your repair bills—and reduce your gas and oil consumption.

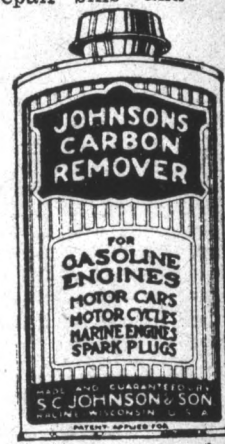
Don't wait until your motor is choked with carbon—remove it every week or two with Johnson's Carbon Remover. You can do it yourself in five minutes—no mechanical experience necessary.

For Tractors—Gas Engines

Johnson's Carbon Remover will also remove carbon from the motor of your tractor, giving it greater power and enabling it to work more satisfactorily and economically. It will make your tractor 100% efficient.

For sale by hardware, accessory dealers and garages. Send for our booklet on Keeping Cars Young—it's free.

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Pure Bred Belgian Draft Horses

We have some extra good Belgian Stallions for sale, coming three and four years old. They are heavy, of good conformation and sound. You can see their sires and dams. They are raised in Michigan and acclimated. We have no agents on the road for which you or we would have to pay. You cannot buy them any better nor cheaper in the world. Our studs and mares carry the best blood Belgium has produced. We prove this by their pedigrees. We invite you to see our stock before buying. You can see them any day of the week except Sunday. Write for particulars and catalog to the OWOSSO SUGAR COMPANY, Prairie Farm, Alicia, Mich.

For Sale a matched pair of registered Percheron mares both black rising 3 & 4 yr old weight 2200 lbs. the 3 yr old an imported mare in foal now and mother of the 5 yr old. Will sell them at farmers' prices. HENRY'S. ROHLFS, R. 1, Akron, Mich.

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

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

SHEEP

MORE to the Kids of Mich: I have sold all the ewes that I care to sell, but judging from the many inquiries I have received there are many of you kids who still want to get started in registered ewes. Now then, here is a new proposition: I have selected one beautiful Shropshire ewe, she will lamb in the course of the next month; she is worth at least \$50.00. I will give this ewe, absolutely free, to the boy or girl who gives me, in my opinion, the best reasons why they should be the one to get her. I may give away more than one. S. L. WING, Kope-Kon Farms, Coldwater, Mich.

SHROPSHIRE SHEEP

We have about 50 ewes in lamb for sale, of best breeding. Registered. HARRY E. SAIER, Seedsman, Lansing, Mich. 109-111 E. Ottawa St.,

BUY A SHEEP

Wait a minute, buy Hampshires. The American Hampshire Sheep Association wants to send you a dandy little booklet with list of breeders. Some near you. Write COMFORT A. TYLER, Secretary, 22 Woodland Ave., Detroit, Mich.

For Sale Bred Reg. Shrop. Ewes at a reasonable price also ewe lambs. H. F. MOUSER, R. 6, Ithaca, Mich.

Shropshire Sheep Nothing to offer before June 1-1919. ARMSTRONG BROS. R 3, Fowlerville, Mich.

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Send \$2.50 with name of your grocer and receive a 5-lb. pail of GRIGGS BROS. PURE HONEY, delivered at your door.

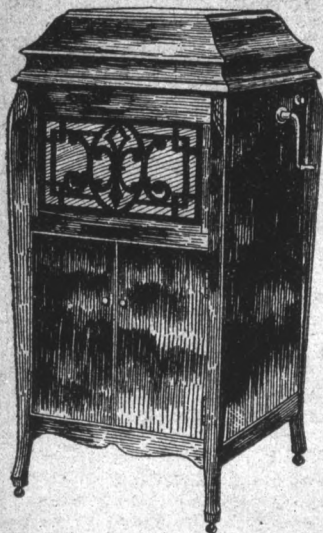
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Music"



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THE very appearance of the Dalion satisfies you that it is the quality phonograph. The different artistic designs, the handsomely grained wood specially treated for permanent acoustic properties, the careful finish of skilled cabinet work—all prepare you for the wonderful musical qualities that you realize when you hear the Dalion play.

The Dalion's Instrumentized Tone-Throat re-animates every note in the record into tone-true, living music. The Orchestra-Shell Tone Chamber is acoustically perfect. The Record Self-Stop, the Guaranteed Motor, the exclusive "Auto-File" are some of the real value-giving features.

Our handsome booklet, sent free, describes them all.

Write for name of nearest dealer and hear the Dalion give new expression to all makes of records.

Milwaukee Talking Machine Mfg. Co.
Milwaukee, Wis.



Dr. Hess Dip and Disinfectant

Now is the time to get out the sprinkling can and make a liberal use of Dr. Hess Dip and Disinfectant. Spring is cleaning-up time. Dr. Hess Dip and Disinfectant is a powerful germ destroyer. It establishes health conditions. Use it in garbage cans, sinks, drains, closets, cesspools, all damp, foul-smelling and disease breeding places.

No better way to avoid contagious diseases. Use it also about the poultry house, pig pen and stables. One gallon makes 100 gallons of disinfectant.

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Woman's Interests

The Farm Home Attractive

THE possession of attractive home surroundings is not beyond the reach of any farmer who owns his home, while several tenants have made their stay enjoyable by a few brushes here and there. There is little relation between the size, costliness, or simplicity of a home and its surroundings as compared with its attractiveness that may be given it by

er produces, then it follows that the most important function of a farm is that of supporting a good home. If every farm child were in attractive home surroundings, many of the problems of life would be solved, and we would not be facing the question of keeping the boys and girls on the farm.

The influence of farm environment has a subconscious but potent effect

of country life. Wide-awake young people will usually hesitate at leaving an attractive, prosperous farm home for uncertainties of city life. But consider the farmstead as a whole. It is not merely a question of a few daisies here, fresh paint and new porches, broad lawns or tidy door yards, but of having living places that, in their whole effect, are pleasing and elevating to older folk and children alike.

A well-planned and well-kept yard will greatly improve an ugly house; a pleasing house makes it far easier to lay out an attractive yard. A house with a poor yard, or none, is inhospitable and forlorn. Both the house and grounds must be kept in mind in planning.

One of the surprising features about an attractive home surrounding is that few people can describe it when they have left it behind. In planning farm homes, Prof. Davies, of Cornell College, advises that there are seven points that we should emphasize:

1. The place must be well furnished with trees and shrubbery.
2. The house should be prominent and should have a good setting.
3. There must be an open space of lawn.
4. The trees and the smaller plants should be massed or grouped at the sides or at the rear rather than scattered all over the place.
5. There must be no unnecessary fences, walks or drives.
6. There must be no curiosities conspicuously placed in the yard, such as piles of stones, odd rocks, or shells.
7. The place must be neat and well-kept so that it may look as if the residents gave it loving care.

The house being headquarters, this should be connected with the highway and the surrounding buildings by serviceable walks and drives. It should have an attractive setting. That is the first and main purpose of the yard, by which is meant two distinct ideas:



Neat Garden Arrangement for Back Yard.

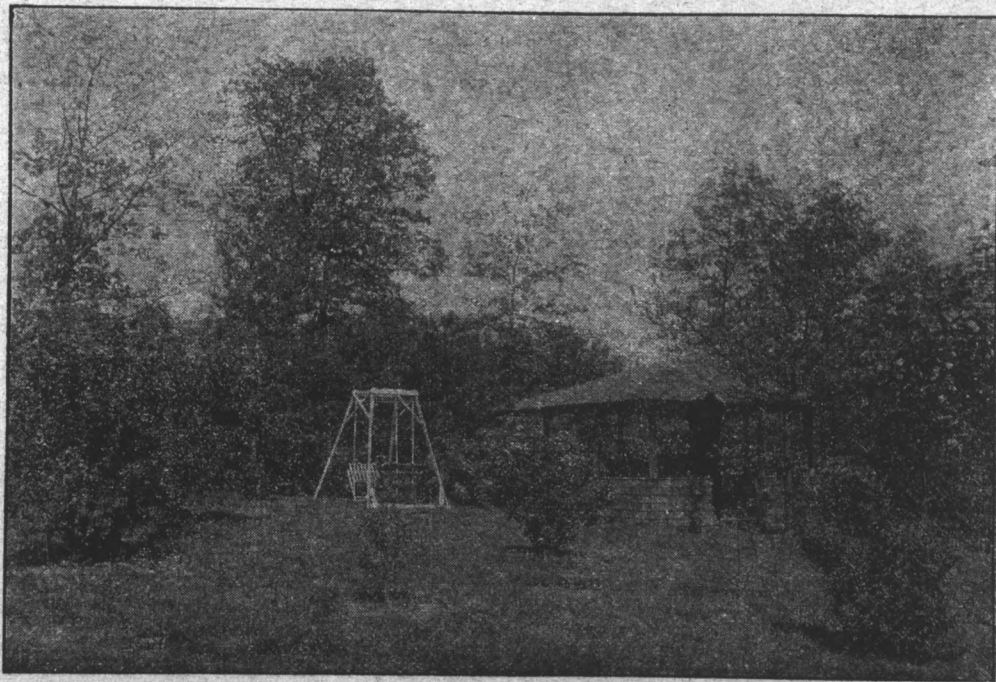
proper arrangement and careful upkeep. Beauty is not to be measured by expense, and ornament of any kind is not needed so much as a neat and well-kept appearance.

Farm folks are coming more and more to appreciate the value of home-like and inviting surroundings as a background for family life. The ideal home and home life is the reward for

which we are striving. Then, there is that pleasure which comes to the family having home surroundings to be proud of. It is an obligation which every citizen owes his community to have his home as attractive as possible. One little farm mother put the truth in a sentence, "Let the home beauty be its sole duty." This is the proper spirit. The farm home may be made beautiful by simple means. Neatness and orderliness come first; these combined with a good green-sward about the house and a sheltering growth of trees and shrubs, a veritable garden may soon be developed.

The farm home is a combined residence and business headquarters. As the farm business is but a means to the home life, it is of first importance that the farm as a whole should make for pleasant home life. If children are the most important crop the modern farm-

on children. Even while the barn is only a playground to the children, here may be taught orderliness and thrift, as also in woodlot, orchard, meadow, and field, all giving one grand example in living object lessons of good farming. The orchards, while not primarily intended to serve an aesthetic purpose, may form the most beautiful part of the farm. An orchard of standard ap-



Young People will be Reluctant to Leave an Attractive Farm Home.

ples could profitably be planted near the farm home to become a part of its background of surrounding trees.

The pleasant farm surrounding is vital, both for the present welfare of the individual home and for the future

first, the house should have a background of sufficient growth of trees and shrubs to give it a protected appearance; second, the setting should afford opportunity for outdoor life on the lawn and in the shaded corners.

A good lawn may be said to be more important than any other feature. Neither shrubs, flowers, nor house will look well unless set off by lawn space. Use good seed and give the permanent grass liberal applications of fertilizers. Many farmers feed everything about the farm but the lawn grass. Constant care is necessary to make a good lawn, though when the lawn is well established care may be given at odd moments. Neglect at the outset will prove disastrous. A thrifty lawn is an insurance against weeds.

The customary use of vines and shrubs to cover unsightly places is a misuse. The aim should be to so improve the grounds that there is nothing to hide. In arranging the planting about the farm home the less that is used to obtain an effect the better. Study the scene as it will look when mature. For example, lilac bushes grow to large size, and each should be allowed plenty of space to develop, instead of crowding the bushes in order to obtain a quicker effect. It is better to use individual bushes at the corners of the house or in groups about the porches than to plant an unbroken mass of shrubs about the base of the house. A continuous fringe of plants is almost as monotonous as none at all. Three trees, more or less, planted about the house will afford shade and give the house its background and frame. Elm, sugar, maple, oak, or similar tall, strong trees are best. These afford shade without keeping air currents and light from the house.

There are three ways in which vines may be used to great advantage; first, to cover fences, walls, or arbors; second, to cover, and thus to prevent the wash of steep banks; third, and more important, to drape and adorn doorways. No matter what vines are used about the farmyard, the best should be reserved to mark the entrances to the house and to festoon the porches. Bittersweet, Virginia creeper, Trumpet creeper, and such old-fashioned vines are all good for walls and arbors.

A flower garden is a beautiful part of the farm surrounding, and an object seldom seen on farms. A garden is supposed to be a place for flowers, but it may also be a place for plants in which one is especially interested. The old-fashioned garden was a jumble of hardy shrubs, perennial flowers, and annuals. Those who are fond of novelties of the nurseryman's catalog or rare individual specimens for their peculiar characteristics, such as the color of their leaves, their distinct habits of growth, their beauty, or their oddity, should have gardens into which all such plants may be gathered.

Inasmuch as walks and drives are the most conspicuous, these should be made as direct and short as possible. When distances are short, straight lines are best; but where terminal objects should be hidden, practicable curved lines may be contrived. The grades of walks and drives must be easy, not only for progress alone, but to prevent washing. Crown the centers of the drives to prevent them from becoming muddy, using gravel for the walks and drives when possible.

Aside from the domestic attractiveness which follows time and energy expended in beautifying the farm home surroundings, the value of the farm on the market is increased. Although the farmer may be satisfied and intends to remain on the farm, and is not eager to sell, he should consider it his duty to maintain the highest valuation of his farm possible. The day has passed when farmers are afraid to plant shrubs, trees and vines, and keep an attractive surrounding for fear their taxes will be increased. They are thinking more and more of the welfare of their families, of having contented wives and children, and every progressive farmer will welcome the day when he may possess a farm home that will cause envy to those passing through the country.

E. W. GAGE.

THE SICK CHILD AND THE SCHOOL.

A day spent in school by a half-sick child may result in a week of serious illness. If, as so often happens, the slight indisposition proves to be the beginning of some communicable disease, the other children in the school are exposed, and those who are susceptible follow in turn. School authorities are naturally anxious to secure regularity of attendance on the part of the scholars, and many parents feel that they are simply doing their duty in forcing children who complain of not feeling well to go to school. It is much better for a child to lose an occasional day's schooling than to risk bringing on an illness and exposing others. The work which children lose in the school from sickness can be made up far more readily than that lost by health. Satisfactory mental progress can not be made unless health is first considered.—(Michigan Public Health Bulletin).

GET THE BULLETIN HABIT.

If you haven't the bulletin habit, get it. The Department of Agriculture at Washington and the Extension Departments of the various state agricultural colleges are glad to forward bulletins on every subject touching on home-making, mostly on request. Occasionally a charge of five cents, sometimes ten cents, is made, but nearly all of the bulletins are free. As an initial step write the Extension Department, Iowa State College, at Ames, Iowa, for their extension bulletin No. 34, "Planning and Equipping the Kitchen." One woman wore a pedometer while doing her work and found that in four years she had walked far enough to encircle the globe. A re-arrangement of her kitchen shortened the trip by several thousand miles. Could you rearrange your kitchen so as to save steps?

Then there are the countless food bulletins, "Proper Care of Vegetables in the Home," "Economical Use of Meats," milk bulletins without number and several on canning. The Children's Bureau, Washington, D. C., will send you all sorts of literature on the care of children. There is no excuse for not having a fine library on the subject of home-making. It is yours for the asking.

INSTEAD OF A COLD LUNCH.

The wife of a rural mail carrier manages in the following way to provide a hot dinner for her husband in winter time: The same might be done for the man who works in the woods in cold weather. She makes a light biscuit dough and rolls thin and covers the sides of a granite dish with it. A half pound of lean beefsteak is then cut in pieces and placed on the bottom, well seasoned with salt and pepper, then a layer of sliced potatoes over that, seasoned likewise with the addition of a sliced onion. A brown gravy made of beef drippings is poured over this. A slashed crust of dough covers all and the pie is allowed to bake one hour. When her husband is ready to start she takes the pan from the oven and wraps quickly in a clean old tablecloth with a woollen blanket around that. When meal times comes the pie is still hot and thoroughly done, thanks to the retained heat.—L. W. M.

Elastics Under Knee Bands of Rompers.—If it is necessary to have elastics in the knee bands of rompers or bloomers that are to be boiled when washed, it will be found convenient, instead of sewing the ends together, to sew to one end a snap hook and to the other end an eye—or a patent hook and eye. The elastic can then be drawn out before washing. To insert again, tie a string in the eye, thread this into the tape needle and pull through.—M. A. C.



Not So Bad this Month

"Now, that's better! It's the first time the expense figures haven't given me a horrid feeling.

"Why didn't I know sooner about Jell-O and some of the other money-savers?"

It doesn't matter whether you live in the city or country, whether you keep an account book or not,

"J-ELL-O"

will help you out, for it is cheap as to cost and it can be made up into more different kinds of good things to eat than anything else.

Every woman who wants to know how Jell-O can help her out will find the information she desires in the Jell-O Book, which will be sent free to all who send name and address.

Jell-O is made in six pure fruit flavors: Strawberry, Raspberry, Lemon, Orange, Chocolate, Cherry, and is sold two packages for 25 cents by all grocers and dealers.

THE GENESEE PURE FOOD COMPANY,
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All Food—No Waste

If you want an appetizing ready-to-eat cereal that you can serve with no fuss and with fullest satisfaction, try —

Grape-Nuts

SANITARY INDOOR TOILET

Royal Sanitary Toilets bring the comfort of indoor toilets to country homes, cottages, schools—wherever running water is not available. No longer necessary to depend upon rear lot outhouses with their discomfort and menace to health.



RECOMMENDED BY DOCTORS
Doctors and health officers highly recommend Royal Sanitary Closets. Invalids and children appreciate them. Outfit consists of pedestal with seat, container, eight 14-inch lengths of vent pipe, two elbows, wall collar and full gallon of chemical lasting six to eight months. Easily installed. Sold direct. No middleman's profits. We make it worth while to sell to your friends and neighbors. Full particulars on request.

H. F. COX CO.
Grand Rapids, Michigan

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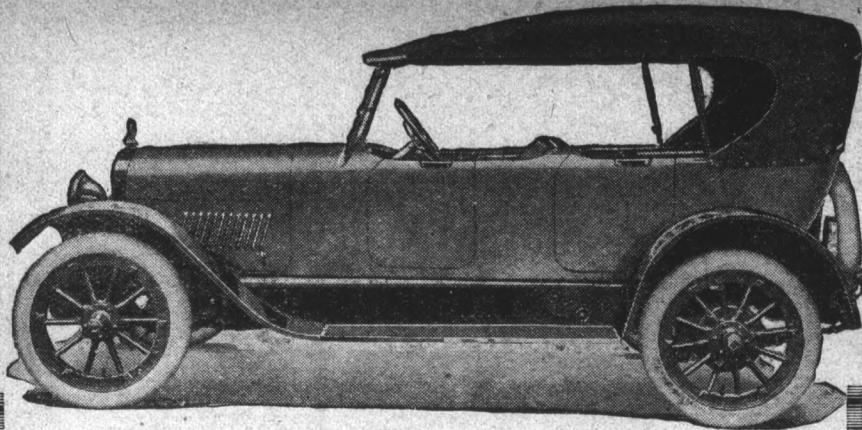
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Brooding the Chicks

(Continued from page 657).

and chicks can be moved to a clean, brooding coop, confining hen so that the chicks will be properly mothered.

Second Day.

Provide plenty of skim-milk for drink and coarse sand or fine chick grit. Feed the skim-milk either all sweet or all sour, don't alternate. The skim-milk is very valuable in a chick ration and should be fed for at least the first two weeks and all through the growing period if it can be procured. It checks and reduces to a minimum the mortality caused by white diarrhea among the young chicks. The skim-milk contains all the ash and protein of the whole milk. The lactic acid developed checks bacterial growth and also keeps the digestive system in a sharp, clean condition. Chicks fed skim-milk must be kept very active on account of the rapid growth made. Leg weakness

ed, the growth immediately becomes checked.

After the second week, the chicks digestive system has become sufficiently developed that cheaper rations can be substituted. The raw egg can be eliminated and meat scrap introduced gradually. The following mash can replace the egg mixture:

Bran, twenty parts by weight; middlings, twenty parts by weight; corn meal, twenty parts by weight; ground oats, twenty parts by weight; meat scrap, ten parts by weight.

In feeding this mash more rapid gains are secured by slightly moistening it with skim-milk, although dry feeding gives satisfactory results.

Change from fine chick feed to the coarse cracked grains as quickly as the chicks are capable of consuming them. Provide plenty of green food, grit and granulated bone during the growing period.

Brooding Practices.

Where artificial brooding of chicks is practiced a few suggestions may be in order that will help decrease the mortality among the flock.

A common mistake in operating the coal burning brooder stove, is the tendency to cramp it into a small building insufficiently ventilated—thus producing hot-house chicks, which become weakened and show low vitality.

Leave the curtain around the deflector of the stove, thereby confining all the heat under the hover, thus providing a cooler outside temperature which will put "pep" into the young chicks and also promote early feathering. It is absolutely essential to have that cooler temperature to harden the young chicks off before eliminating permanently all the heat. If the chicks have become accustomed to excess heat without hardening them off, and the stoves are allowed to go out, crowding or piling of the chicks will result, which in turn means sweating or suffocation.

Clean, dry sand on the floor has given better results than clover chaff, cut straw, shaving or any other material for the first week. After the first week, deep litter feeding of the chick feed will induce exercise, making the chick more vigorous and tend to prevent leg weakness.

The ideal initial temperature at which to start the young chicks after introducing them from the incubator to the brooder is from ninety-two to nine-

Young Chicks Need Warmth.

sometimes develops from too rapid growth but can be avoided by exercise, preferably out on the ground.

Third Day.

Solid foods have been entirely eliminated previous to the third day. This is due to the fact that nature has provided the chick with a "bread basket" containing sufficient food to last from sixty to seventy-two hours. Early feeding usually results in some form of dietary trouble, so let your kindness towards the chick be shown by retarded and limited early feeding instead of cramming the chick's crop full of feed while part of the yolk which the chick absorbs into the body for food remains undigested. Unless this yolk is completely assimilated before food is given bowel trouble usually results.

Take one raw egg to one hundred chicks; three small handfuls of bran; three small handfuls of rolled oats.

Mix together so that each particle of bran and oat meal will be flavored with egg. A dash of bonemeal and fine charcoal will prove beneficial in this mixture. Give four feeds, one every three hours.

The raw eggs may be infertile tested on the seventh day or cracked, unmarketable fresh eggs. This mixture makes an ideal initial feed, being very digestible and attractive. The raw egg is more digestible than cooked eggs. The rolled oats are nutritious and attractive to the young chick on account of the light color. Bran contains mineral or ash elements necessary for frame development.

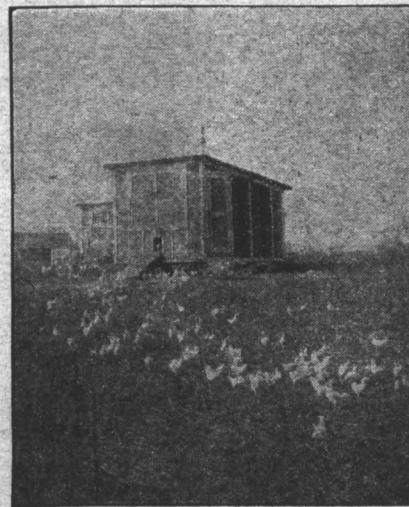
Fourth to Fourteenth Day.

Two feeds of commercial chick feed; two feeds of above described egg mixture; one feed of sprouted oats, or green food, such as lawn clippings, lettuce, etc.

The commercial chick feeds are already prepared and consist of finely ground grains, such as corn, wheat, oats and millet. The green food will act as a tonic and appetizer, thereby stimulating growth through increased consumption. If green food is excluded,

ty-five degrees F., registering at the outer edge of the hover about two inches off the floor.

A low fence of close woven wire placed around the outside of hover about fifteen inches from the outside edge, will give the chicks a choice of temperature and insure against loss from chilling. Educate the chick for three days by use of this wire, then they will immediately return to the source of heat when cold. Reduce the



A Cheap Colony House.

heat as the chicks grow older, eliminating it entirely when they are fully feathered. On wet, stormy days, a little surplus heat will prove beneficial where chicks are allowed free range.

Get the young chicks out on Mother Earth after the first week. Toe-picking and cannibalism are the results of close confinement, these evils will not be evident if the chicks are gotten outside early. Early education of roosting by placing low perches in the house after the second week will be a

distinct advantage. Once the young chicks are taught to roost, our troubles may be considered over.

Provide plenty of ventilation at all times and keep buildings well sprayed for lice or mites.

If the parent stock are vigorous and healthy, and if the egg has been surrounded with ideal incubation conditions, resulting in husky, vigorous chicks, the above suggestions on feeding and care will give highly satisfactory results.

Spring Plans for Winter Eggs

THE overflowing egg basket during the spring and summer does not make up for an empty basket in the winter when eggs are golden. Everybody that keeps hens wants to know the essentials in securing the six-cent egg. Sometimes we are told that there are certain combinations of stimulating drugs, blood meal, egg foods, and so forth, sure to make the hens lay.

The experienced egg man know that this is only the froth of the subject—that the real factors begin back of present conditions. The parent stock, the mating, the care of the breeding pen, the hatching of the egg, the rearing of the chick, handling of the pullet—all are important. That is why egg farming is a real art, for it not only embodies mastery of the details of poultry-keeping but skill in overcoming nature's handicaps.

Among the essentials in winter egg-production which begin in the spring, are these:

1. Hatching the chicks at the right time and keeping them growing from shell to maturity.

2. Feeding the growing pullets plentifully without forcing, and yarding only those of like age and condition together.

3. Regularity in care and feeding.

Pullets are the main dependence for egg production in the fall and winter. A few hens will molt so as to lay in November and December, but most of them drop out of the laying ranks in autumn or fall—and stay out until January or February when the season of high prices is practically over.

For pullets to fill in this gap, they must be hatched at a time to start regular laying along in October. As there is considerable difference in the time of maturity of various strains and breeds, every poultryman must make his own calculations in regard to the best hatching time. In a general way it may be said that Leghorns reach maturity at an age between five and six months, while with the medium and large breeds from one to three months longer are usually required.

Taking the Leghorns as a good example to represent the egg breeds, the bulk of the hatches for winter layers should be brought off the last of March and the last of April. The pullets of the March hatch will begin to lay in September and should be producing a regular supply of marketable eggs in October. In the latter part of November some of these pullets may go into a partial molt or from some other cause take a lay-off, but the April-hatched contingent that were started a month later will be ready for business and thus prevent a slump in the egg yield. If the pullets let up a bit in January, the yearling and two-year-old hens should be ready to come to the rescue and help the well-conducted egg farm pay a profit every month of the year.

After the pullets are hatched at the right time, care must be taken to see that they suffer no back-set. Chilling, crowding, wrong feeding, lice or anything else that retards growth will delay maturity and egg-laying. And if pullets do not get started to lay early in the winter, the cold weather and

nature are against them to such an extent that it often takes spring time to "thaw them out." Such a period of non-production is almost a tragedy in the face of present high prices of feed.

To produce large-framed, vigorous pullets capable of continuous laying of good-sized eggs, there should be no forcing during the growing period. While the pullet can be given an abundance of feed, it should not be of a stimulating nature, but should consist of grains and green stuff with but little meat or oil-meals. And for sturdy growth the pullets must have lots of exercise.

Of course, pullets should not be kept with cockerels or with larger, stronger birds that will run over them and keep down their development. A simple point that is often neglected is the benefit to be derived by separating the young stock from the old fowls and by entirely cutting out the "rooster brigade" except when required in breeding pens.

Pullets should be settled in their winter quarters before maturity, for they are easily upset by a change of quarters, or feed, or methods. The average pullet has a rather delicate nervous system and such an apparently trivial thing as changing her from one house to another (even on the same farm) will frequently check egg production in the fall and winter, although such things will have little or no effect in the spring when the reproductive impulse is strong.

SCIENCE GIVES BIDDY A BOOST.

MOST of us eat eggs because we like them. Science says we should eat them because they have an especial food value. Taken in combination with milk and vegetables, they make for health, strength and dynamic nervous force. For instance, eggs, milk and leafy vegetables, according to H. L. Kempster, of the University of Missouri College of Agriculture, contain substances known as vitamins, which are essential to growth. They are called the protective foods because they correct the faulty composition of seeds and tubers. Young animals fed on wheat, oats, barley or other seeds fail to grow. The ration is inadequate even if the feed includes beans, peas and potatoes, and even if moderate amounts of leafy vegetables are also fed.

Egg yolk contains about thirty-three per cent fat. Like butter-fat, it contains growth-producing substances which are absolutely essential. These growth-producing substances are not found in vegetable fats or oils in beef or pork fats. Some protective foods are necessary if the health is to be maintained. Eggs should, therefore, become one of the regular articles of diet. The price should be a minor consideration. Eat an egg a day. They promote growth and increase your ability to withstand disease. So says science, and thus is the humble hen crowned benefactor of mankind.



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View looking into hopper showing grain trap near stacker fan; also auger running from beneath trap for returning the saved grain to separator.

Grain Saving Stacker

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R. Watt Machine Works, Ltd., Ridgeway, Ontario.
George White & Sons Co., Ltd., London, Ontario.

The Grain-Saving Device Originated with The Indiana Manufacturing Co., Indianapolis, Ind., Who Also Originated the Wind Stacker

MICHIGAN LIVE STOCK INSURANCE COMPANY

INDEMNIFIES Owners of Live Stock—Horses, Cattle, Sheep and Hogs
Against Death by Accident or Disease

SAGINAW

GRAND RAPIDS

BREEDERS' DIRECTORY

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

A bull calf, sired by our imported "EDGAR of DALMENY"

recently sold in Scotland at the Perth Bull Sale for the record price of 2,100 guineas, or \$10,584.00 in our money. This goes to show the quality of the

ABERDEEN ANGUS

that Mr. Scripps is breeding. He enjoys seeing good stock on "Wildwood" and believes that THE BEST IS NONE TOO GOOD.

"Edgar of Dalmeny" won the Michigan Grand Championship last September at the Michigan State Fair and was a winner in his class at the Chicago International last December.

We have a few females with calves at foot and re-bred to "Edgar of Dalmeny" that Mr. Scripps has consented to sell to reduce the fast growing herd. Write To

WILDWOOD FARMS

ORION, MICHIGAN

W. E. SCRIPPS, Prop., Sidney Smith, Supt.

Registered Aberdeen Angus. Seven bulls from eight to twelve months old. Plenty of size best of breeding. Prices reasonable. Come and see them. Inquire F. J. WILBER, Olio, Mich.

WOODCOTE ANGUS

Established in 1900.

TROJAN-ERICAS and BLACKBIRDS (Blackcaps). Breeders and feeders of many International winners.

Write For 1919 Bull Sale Catalogue

WOODCOTE STOCK FARM, Ionia, Mich.

Cloverly Angus Bred cows, heifers and bull calves of good breeding. GEO. HATHAWAY & SON, Ovid, Mich.

Purebred Angus bull, fifteen months old, extra good prospect; also will sell my herd bull Blackcap Model No. 216132. F. J. LYON, Homer, Mich.

Registered Guernseys

Bulls, and Bull Calves, good enough for any breeding at prices you can pay. J. M. WILLIAMS, North Adams, Mich.

Guernseys Grade Heifer Calves Registered Bull calves; write your requirements WALTER PHIPPS FARM, 30 Alfred St. Detroit, Mich.

REGISTERED GUERNSEYS

Just two young yearling bulls left, ready for service. Come and look them over quick, or write. They are the good ones. Priced to sell.

AVONDALE STOCK FARM, WAYNE, MICH.

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

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



HOLSTEIN LEAD AS BUTTER COWS

Bulletin No. 75, Bureau of Animal Industry, U. S. Department of Agriculture, shows their leadership with an average daily yield of fat of 1.61 lbs. Average daily yield. Milk Fat
Holsteins 48.9 lbs. 1.61 lbs.
Guernseys 28.9 lbs. 1.41 lbs.
Jerseys 24.5 lbs. 1.26 lbs.

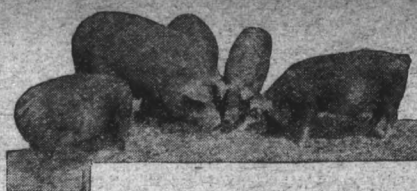
Study both columns of figures and you will readily understand why the rich and important dairy sections of the country are occupied mainly by the Holstein breed. If interested in
HOLSTEIN CATTLE
Send for our booklet—they contain much valuable information.
HOLSTEIN FRISEAN ASSOCIATION OF AMERICA, Box 164, Brattleboro, Vt.

"Top-Notch" HOLSTEINS

The young bulls we have for sale are backed up by many generations of large producers. Buy one of these bulls, and give your herd a "push". Full descriptions, prices, etc. on request.

McPherson Farms Co., Howell, Mich.

Registered Holstein Bull calves from A.B.O. cows up to 29-32 lbs. butter in 7 days, grandsons of the \$50,000 bull. C. H. GIDDINGS, Gobleville, Mich.



Spring is Time to Clean Up

SPRING housecleaning should not be confined to the house, but the practice should be made general to include the barn, hog quarters, sheep sheds, cattle barns and chicken houses. A general clean-up not only improves appearances, but is one of the safest weapons for warding off disease. All work of this kind should be done thoroughly, for disease germs hide in remote corners and a good disinfectant should be applied freely. Spring is a good time to clean up and disinfect the premises, but the work should be repeated as often as it is necessary.

Disinfecting is Necessary.

It has been clearly proved by science through the aid of high-power microscopes, that there exist numerous minute animal and vegetable organisms—germs—and that it is common for these organisms to find their way into the animal body and produce disease. If these germs could be confined to the animal body and die with it, there would be no such thing as an infectious disease. Unfortunately, however, the germs are thrown off by the animals through the excretions and lie in the soil, in the litter of stables, upon the floor and walls, and in cracks and crevices. Here they remain and maintain their virulence, ready at any time to be gathered up by an animal in its feed or to be blown about in the dust and drawn into the lungs.

For example, tuberculosis in cattle. Cattle infected with this disease pass myriads of these germs with the manure, and it is not difficult to understand how the average stable becomes filled with them. And here again it is not difficult to understand how one diseased animal may contaminate extensive premises.

Many of the vegetable organisms are very difficult to destroy, for the reason that they contain spores. A spore may be likened to the seed of a plant, for it bears about the same relation to the germ as a grain of wheat does to the plant.

How to Disinfect.

To those unaccustomed to the work, disinfection may seem a most complicated process. Any approved method, however, is comparatively simple when carried out carefully, although, like many another procedure, it is one in which attention to details counts for much. It is important to bear in mind that the causative agents of many diseases are extremely small and may remain for an indefinite time in dust, cracks, and crevices of buildings, so that efforts aiming at the eradication of disease from contaminated premises must be thorough in order to be effective.

In the work of disinfection nature has provided man with a most valuable ally—sunlight. The dark and sunless building will be a favorable breeding place for bacteria, and structures which admit the greatest amount of sunlight will be the less favorable for their development. Sunlight cannot be considered more than an accessory in the destruction of bacteria.

Disinfecting Agents.

Disinfection with drugs, such as formalin in a five per cent solution, or carbolic acid of the same strength, or creolin in a five per cent solution, are very effective and economical. These are best applied in a solution by means of a spray pump. All superficial dirt should be removed first. Whitewash mixed with one of the above solutions is very effective.

Calf Enemies

WHITE SCOURS BLACKLEG

Your Veterinarian can stamp them out with Cutter's Anti-Calf Scour Serum and Cutter's Germ Free Blackleg Filtrate and Aggrassin, or Cutter's Blackleg Pills.

Ask him about them. If he hasn't our literature, write to us for information on these products.

The Cutter Laboratory
Berkeley, Cal., or Chicago, Ill.
"The Laboratory That Knows How"

MINERAL HEAVE COMPOUND
CURES HEAVES
\$3 Package guaranteed to give satisfaction or money refunded
\$1 Package sufficient for ordinary cases.
Postpaid on receipt of price
Write for descriptive booklet
MINERAL HEAVE REMEDY CO., 463 Fourth Ave., Pittsburg, Pa.

DEATH TO HEAVES! NEWTON'S
HEAVE, COUGH, DISTEMPERS AND INDIGESTION COMPOUND
Cures Heaves by correcting the cause—Indigestion. Prevents Cough, Stagnation, etc. Best Conditioner and Worm Expeller. 20 years sale. Three large cases guaranteed to cure Heaves or money refunded. The cure Heaves or money refunded. The cure Heaves or money refunded. The cure Heaves or money refunded.

Bog Spavin
Cure the lameness without scarring the horse.
Fleming's Spavin Liquid
\$2 a Bottle—special remedy for all soft blennishes—Bog Spavin, Thoroughpin, Splint, Curb, Capped Hock, etc. Easy to use, only a little required and money back if it fails. Write for Fleming's FREE VEST-POCKET VETERINARY ADVISER.
FLEMING BROS., Chemists
252 Union Stock Yards, Chicago, Illinois

The Traverse Herd

We have what you want in BULL CALVES, the large fine growthy type, guaranteed right in every way. They are from high producing A.R. O. ancestors, Dam's records up to 80 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

"Winwood Herd"

REGISTERED
Holstein - Friesian Cattle
Sire in Service
FLINT MAPLECREST BOY

His sire is Maplecrest Korndyke Hengerveld. His three nearest dams each over 30 lbs. of butter in 7 days. His dam and granddam both made over 1232 lbs. of butter in one year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vassar Bell, 30.57 lbs. of butter in 7 days and 121 lbs. in 30 days. Her butter fat test is 5.27. This looks about right to the man who goes to the creamery. We have bull calves from 2 weeks to 12 months old. From A. R. O. dams and sired by Flint Maplecrest Boy, which we will sell at a dairy farmers price breeding considered. Just think 40 more cows to freshen which means more bull calves. Let us know your wants. We will make terms on approved notes.

JOHN H. WINN, Inc.
Lock Box 249, Rosecommon Mich.
Reference Rosecommon State Bank.

CLUNY STOCK FARM

100--REGISTERED HOLSTEINS--100
When you need a herd sire remember that we have one of the best herds in Michigan, kept under strict sanitary conditions. Every individual over 6 mos. old regularly tuberculin tested. We have size, quality, and production records backed by the best strains of breeding.

Write us your wants.
R. BRUCE McPHERSON, Howell, Mich.

BULL CALVES

Sired by Mapleside Korndyke
No. 112849. The sire's dam at 2 1/2 years, granddam at 3 1/2 years, and great granddam have semi-official records averaging 842 lb. butter in 1 year. Dams of calves have A. R. O. records up to 19.23 lb. butter in 7 days. Write for breeding and prices.

PEACELAND STOCK FARM
Three Rivers, Mich. Chas. Peters, Herdsman
C. L. BRODY, Owner Port Huron, Mich.

THE HOLSTEINS

At Maple Avenue Stock Farm are under Government supervision. The entire herd have just been tuberculin tested and not one reactor. A good place to buy that bull you are looking for, and I have two very fine, richly bred, and splendid individuals ready for any amount of service. I want to answer any question you may ask about them.

L. E. CONNELL, Fayette, Ohio
831.43 lb. butter in 305 days 30.2 in 7 days; gddam. Jo han Heng. Lad. gddam. 21.73 lb. dam of bull calf 1/4 white. 3 heifer calves 27 lb. sire not related. Terms easy.
M. L. McLAULIN, Redford, Mich.

OUR SERVICE DEPARTMENT.

(Continued from page 656).
legal fence, that is somewhat left to the fence viewers to decide; but it must be such a fence as will turn the stock ordinarily kept on farms. It may be of stumps, rails or wire, so long as it does not occupy over five feet in width, and half of the fence may be put on each side of the line. The statute defines a legal fence to be: "All fences four and a half feet high and in good repair, consisting of rails, timber, boards, wire, or stone walls, or any combination thereof, and all brooks, rivers, ponds, creeks, ditches and hedges, or other things which shall be considered equivalent thereto, in the judgment of the fence viewers, within whose jurisdiction the same may be, shall be deemed legal and sufficient fences."

Persons owning wild and unoccupied land cannot be compelled to divide and maintain a fence on the line, and the principal liability for failing to maintain a fence is to prevent stock going from your property onto your neighbor. The neighbors may agree to have no line fence, or may build a line fence without dividing it into portions to be kept by each, if they desire to do so. There being no duty to maintain a line fence, in the absence of statute, the statute is strictly construed—that is to say, there is no duty beyond that imposed by the statute.

FEEDING BROOD SOWS.

I am writing for advice as to what to feed, or rather what not to feed, brood sows before and after farrowing. I have lost three sows, each leaving small pigs, and find it rather costly experience. They ran out, had plenty of exercise, were fed on slops from house with corn meal in, also ear corn, till a few days before farrowing, then I left out the corn and mixed in mill feed that I bought for hog feed. After the pigs came, I continued the same with fresh separator skim-milk added, right after separating, but fed no new cow's milk. I think it must be something about what they were fed that is the reason they died. Is ground rye and barley good for pigs, especially very young pigs?

Van Buren Co.

H. L. R.

For a few days before farrowing feed very little rich, heat-producing food; the first day after farrowing feed only a little bran or middlings and give the sow plenty of warm water. Avoid all sour, house slops. As soon as the sow regains her normal condition and the pigs are capable of using the increased flow of milk her rations may safely be increased until she is getting all she can make good use of. As a general rule, skim-milk should not be fed for the first few days after farrowing.

After the first week or ten days a slop made up of middlings, oil meal and skim-milk will produce excellent results. A grain mixture made up of one hundred pounds of middlings, one hundred pounds of ground barley and twenty pounds of oil meal should promote rapid growth of pigs and maintain the brood sows in good, vigorous condition. I am sure that you will obtain more satisfactory results if you omit the corn and house slops and follow the above directions when your other sows farrow.

In feeding skim-milk to brood sows that are suckling pigs better results will be obtained if you feed only about ten pounds a day and use sufficient water with it to make the slop of the right consistency. Always provide plenty of fresh water for the sow, and for the pigs as soon as they are old enough to drink by themselves.

W. M. K.

Every dairyman should devote himself to the work of instructing his neighbors by example and precept.

Men may give you good advice but you must use your own sense to make the right use of it.

Money and position without happiness are like a table loaded with good things and no appetite to eat.

How Much Milk Are You Really Getting?



Weigh each cow's milk every day. Put it right on the scales—don't just make a guess at it. Know exactly how much milk you are getting from each cow in your herd. Keep a written record of their production and weed out the "boarders" that are a drag on your profits.

Scales Will Tell

The scales will also tell you which dairy feed helps your cows give the most milk. They will prove to you that that feed is—Larro-Feed. Larro-Feed has increased the milk flow of the herds of thousands of dairymen and it will increase the milk flow of yours.

Larro-Feed is the best feed I have ever used to make cows give milk. I have one old cow with not many teeth giving 50 lbs. a day.
John N. McClure,
Quarryville, Pa.

Larro Gives More Milk

There is no doubt about this—it is a fact. Larro-Feed will give you more milk and healthier cows.

We don't ask you to take our word for it, or even the word of Larro-Feed users. All we ask is that you give Larro-Feed, itself, a chance to prove its merit.

I consider Larro-Feed indispensable. Cows' appetite for it is as keen when they are being tested and heavily fed as when they get only a small feed a day.
R. H. Hilton,
Pulaski, N. Y.

The Larro Guarantee

Unless Larro-Feed shows proof—by the scale test or by any other test you prefer—that it gets you more milk than any other ration you have ever used, your trial supply of it will not cost you a penny. That's the Larro guarantee. Your money back if not entirely satisfied.

The Larro-Milling Company, 1305 Larro-Mill Bldg., Detroit, Michigan

Try Larro-Feed and See

Make this test right away—now! Order a supply of Larro-Feed from your local dealer today. See for yourself that Larro-Feed will get you more milk, healthier cows and bigger profits. If you do not know where your dealer is located, write us for full information.

GUARANTEED
LARRO
PRODUCTS

Larro-feed

THE READY RATION FOR DAIRY COWS

77-REGISTERED HOLSTEINS--77 ABSOLUTE DISPERSION SALE

of the entire herd of 55 head owned by Mark H. Piper together with 22 head from the herds of L. C. Ketzler and Floyd Pierson.

FLINT, MICH., MAY 13, 1919

33 head in calf to Admiral Rag Apple, 234267, son of Rag Apple Korndyke 8th and a 32.5 lb. Junior-four-year-old.
17 daughters of Flint Hengerveld Lad, 124989, whose two nearest dams average 32.7 lbs. butter and 735 lbs. milk in 7 days. 20 head in calf to this great sire.
30 A. R. O. cows and heifers, ranging from 17-lb. yearlings to 34.8 lbs. at full age.

Write for Catalog to

MARK H. PIPER, Flint, Mich.

CATTLE

For sale A fine registered Holstein bull calf from large producing ancestors, born Dec. 18, 1918. Would make a fine sire for improving a grade herd. Price reasonable.
A. F. LOOMIS, Owosso, Mich.

Bulls All Sold. have two Reg. Oxford ewes at \$50.00 each. Due to lamb soon.
J. ROBERT HICKS, St. Johns, Mich.

For Sale Registered Holstein bull calf, born Feb. 18, 1919, mostly white. Dam daughter of 30 lb. sire. Sire Grandson of Pontiac Korndyke, write for pedigree and price delivered.
E. E. STURGIS, St. Johns, Mich.

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

\$125 Buys two high grade unregistered heifers nearly six months old, and one reg. bull 3 mos. old. Pontiac breeding. B. B. REAVY, Akron, Michigan

WANTED a Reg. Holstein Bull dam better than 30 lb. PARHAM'S PEDIGREE STOCK FARM, Bronson, Mich.

JERSEY BULLS

Ready for service FOR SALE WATERMAN & WATERMAN, Ann Arbor, Mich.

The JERSEY

THE Jersey is famous for the little money it costs to keep her compared with the big yield she gives in return. Owning a Jersey is like having money invested with sure interest. It has required 200 years to develop her perfection—to-day she is supreme. Write breeders for prices and pedigrees and let us give you valuable facts, free.

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

BUTTER BRED JERSEY BULLS
CRYSTAL SPRING STOCK FARM,
Silver Creek, Allegan County, Michigan.

Maple Lane R. of M. Jersey herd. Bull and heifer calves sired by a nephew the new World's Champion, Sophie's Agnes. Also B. C. Red eggs and chicks.
IRVIN FOX, Allegan, Mich.

LILLIE Farmstead Jerseys. Young bulls ready for service from R. of M. cows. A few bred heifers and cows.
COLON C. LILLIE, Coopersville, Mich.

For Sale Jersey Bull, Goldie Foxhall Lad No. 17046, Sire Fogis Foxhall No. 12349. Dam Goldie Sophia No. 35283, this bull is solid color, black tongue and switch, dropped Mar. 10th, 1918, an extra fine individual, good enough that I will ship him C. O. D. Also a few bull calves. Address NEWMAN'S STOCK FARM, R. 1, Marlette, Mich.

The Wildwood Jersey Farm.

Bulls for sale by Majesty's Oxford For 134214 and Eminent Ladies Majesty 150834, and out of R. of M. Majesty dams.
ALVIN BALDEN, Capac, Mich.

For Sale Registered Jersey bulls, ready for service and bull calves.
SMITH & PARKER, R. 4, Howell, Mich.

Lakewood Herefords Strong in the blood of Anxiety 4th the strain that breeds true to type and predominates the leading show and sale rings of the country. A few high class young bulls for sale. Come see, and compare. Farm adjoins town. Phone 39.
E. J. TAYLOR, Fremont, Mich.

HEREFORDS

Both sexes and all ages for sale also horned and polled. Bulls in service. Governor by Prince Donald by Prime Lad 9th, Militant Farmer by Imported Farmer, Fairfax Farmer by Militant Farmer, Dam by Perfection Fairfax.

ALLEN BROS., Paw Paw, Mich.

Harwood's White Faces

KEEP ON 508019

A Ton Bull Heads the Herd

The beef cattle of the day. Only 2 yearling bulls left. My 1918 crop of bulls ready for sale. Will spare a few females. You can not make a better investment. I wish to thank my customers for past favors.

JAY HARWOOD, Ionia, Mich.

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

Herefords Bob Fairfax 494027 at head of herd. Stock for sale, either sex, polled or horned, any age. Priced right. EARL C. McCARTY, Sec'y. H. B. Ass'n. Bad Axe, Mich.

Shorthorn Scotch bull 2 years old, 3 good bull calves 7 mos. old for sale.
W. C. OSIEB, Hillsdale, Mich.

BIDWELL SHORTHORNS

For Beef and Milk.

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

BIDWELL STOCK FARM,

Box B, Tecumseh, Mich.

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

Richland Stock Farm

SHORTHORNS

HOME OF THE MICH. CHAMPIONS

We offer for sale a few good dual purpose cows with calves at foot. Also two three year old bulls suitable for range purposes. We invite inspection.

C. H. PRESCOTT & SONS,

Office at Tawas City, Mich. Herds at Prescott, Mich.

Shorthorns Scotch and Scotch Topped cows and heifers, priced right. Come and see them or write
W. B. McQUILLAN, R. 7, Howell, Mich.

For Sale Shorthorns of Quality Scotch and Hope, Ayondale, Maxwallow Sulton and White Hall Sulton by the Oscola Co. Shorthorn Breeders Ass. JOHN SCHMIDT, Sec. Reed City, Mich.

Milking Shorthorns Clay bred young bulls 3 to 10 months old.
DAVIDSON & HALL, Tecumseh, Mich.

Rosemary Farms, Williamston, Mich. young bulls ready for service. Shorthorns bred for milk & beef. Herd estab. by Prof. C. H. Burgess, Mich. Agri. College.

Shorthorns Central Mich. Shorthorn Breeders Ass. offer 37 bulls all ages. 17 females for sale. Write Oscar Skinner, Sec., Gowen, Mich.

Shorthorn Breeder No stock for sale at present.
CHAS. WARNER, Jr., Inlay City, Mich.

Shorthorns 100 head to select from. Write me your wants, price reasonable.
Wm. J. BELL, Rose City, Mich.

The Kent Co. Shorthorn Breeders have both males and females for sale. Ask about them.
L. H. LEONARD Sec., Oaledonia, Mich.

Milking Shorthorns of best Bates breeding and O. I. C. swine. Bulls for sale 1 mo. to 1 year old.
E. H. KURTZ, Mason, Mich.

Roan Yearling Scotch Topped Short horn bull for sale.
W. E. MORRIS, R. 5, Flint, Mich.

For Sale Reg. yearling Guernsey bull May Rose breeding the first check of \$100 gets him.
JOHN EBELS, R. 2, Holland, Mich.

HOGS

Duroc Opportunity

What would the earning capacity of a Brookwater Boar be in your herd? A mid-west breeder states that the Brookwater boar he used added from \$75 to \$100 to every gilt bred to him. It paid this man to use one of our boars it will pay you.

We have several that we are offering at prices which appeal to the small breeder who must of necessity be a conservative buyer. We have a few that are good enough to be used in high class herds at prices in keeping with their individuality and breeding. Money invested in a good herd boar very speedily increases the value not only of what you sell but what you keep. Send for price list or better, visit the farm.

BROOKWATER FARM, Ann Arbor, Mich. HERBERT W. MUMFORD, owner. J. BRUCE HENDERSON, Manager.

OAKWOOD FARM

Nothing for sale at present looking orders for spring pigs (Durocs). Tax Payer and Gold Medal breeding. RUSH BROS., Romeo, Mich.

Additional Stock Ads on Page 679

LATEST MARKET REPORTS

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, April 24.

WHEAT.

Wheat is scarce and millers are finding it difficult to secure enough to meet their needs. On the local market prices are merely nominal as there is no wheat here to change hands. It is predicted by many that prices will soar before the new crop is ready for the market. Crop reports are as promising as ever, excepting that in the spring wheat districts of the northwest and Canada seeding has been delayed by recent rains. The visible supply for the country decreased 6,260,000 bushels the past week. A year ago No. 2 red wheat was quoted at \$2.17. Present Detroit prices are:

No. 2 red	2.65
No. 2 mixed	2.63
No. 2 white	2.63

CORN.

Persistent reports of urgent demand all over the world for bread stuffs, meats and fats has furnished an incentive to buy corn. While the Food Administration desires to keep values down to established levels, the demands for corn have been so strong that there is little chance of preventing advances. Additional vessels are allotted for the movement of grains to Europe. Hog markets are generally higher which has given strength to the corn situation. In Chicago values have advanced and No. 3 yellow is now being quoted at \$1.66; No. 4 yellow at \$1.64@1.65; July corn \$1.62½; September \$1.59½. At Detroit the trade is less active than elsewhere, due to lack of local demand. A year ago the market here paid \$1.60 for No. 2 corn. Present prices are:

No. 3 corn	1.67
No. 3 yellow	1.70
No. 4 yellow	1.67
No. 5 yellow	1.64
No. 3 white	1.70

OATS.

Oats are in active demand with prices going higher. Dealers admit that quotations should be on an advanced basis. Commission houses and exporters are buying quite freely. A year ago standard oats sold on the local market at 91½¢ a bushel. Present Detroit prices are:

Standard	74
No. 3 white	73½
No. 4 white	72½

RYE.

Active shipping has brought about increased buying of rye, and values are up from those of last week. Cash No. 2 is now quoted at \$1.76 on the local market.

BARLEY.

This grain is in demand by commission houses. Buyers are more numerous and holders were not disposed to part with the grain at \$1.22 per bushel in Chicago on Monday. On the Detroit market cash No. 3 has advanced to \$2.20@2.30 per cwt.

BEANS.

The market for pea beans has been steady at most markets during the week. There is practically nothing doing at Detroit with too few sales made to establish prices. In Chicago trading is moderate with buyers inclined to purchase in larger quantities as their supplies are limited. Lighter offerings also favor an improved market. Pea beans are quoted there at \$7.25@7.50 for choice to fancy hand-picked. The New York trade holds about steady with Michigan pea beans at \$7.50@7.75; white marrows at \$11.75; red kidneys at \$11@12.25. The movement and demand in Philadelphia are strong and prices hold firm. Michigan pea beans are selling mostly at \$7.50.

SEEDS.

There is very little doing in the seed market, with prime red clover at \$29.50; October \$17.50; alsike at \$26; timothy seed \$5.25 on the Detroit market.

FEEDS.

Prices in 100-lb. sacks to the jobbers hold steady as follows: Bran 45@46c; standard middlings \$46@47; fine mid-

dlings \$48@50c; coarse corn meal \$63; cracked corn \$66; corn and oat chop \$53@54 per ton.

HAY.

Consumers of hay are having much trouble in securing supplies. Prices are firm as follows: No. 1 timothy at \$34.50@35; standard timothy and light mixed \$33.50@34; No. 2 timothy and No. 1 mixed \$32.50@33; No. 3 timothy \$26@30; No. 1 clover \$29@30.

Pittsburgh.—Receipts of hay are exceptionally small and prices are advancing rapidly. All grades are disposed of at top prices. Quotations are: No. 1 timothy \$36@36.50; No. 1 light mixed \$33.50@34.50; No. 1 clover mixed \$33.50@34.50; No. 1 clover \$33@33.50.

CHEESE.

Production is expected to increase rapidly and buyers are satisfying only immediate demands, believing that the prices will be down. At Detroit Michigan flats are now quoted at 29½¢ and daisies at 29½¢. In New York the trade is firm with current make specials at 32½¢@32¾¢, and average run at 31¾¢@32¼¢. Philadelphia trade is easier, with full milk, new at 32¢@33¢, and do old at 35¢@38¢.

BUTTER.

The government will now grant licenses for exportation to Holland of butter, cheese and condensed and powdered milk. The market in this country is somewhat nervous, but appears

to be maintaining a fairly steady tone. Warmer weather will aid production, but any decline in price is certain to encourage consumption and tend to recover such declines. Detroit prices have advanced since last week with fresh creamery stock from Michigan at 61¢@63¢ per pound. At Chicago the range is from 55¢@61½¢. An easier tone prevails in New York at 62½¢@64¢ for creameries. At Philadelphia a firm trade is reported with western creamery extra at 64½¢.

POTATOES.

A stronger market prevails with the price tendency upward. At Detroit trading is firm and prices higher with Michigan whites U. S. No. 1 selling at \$3.15@3.25 per 150-lb. sack. The same grade sells in Cleveland at \$3.50; New York \$3.75@4; at Columbus at \$3.75; in Pittsburgh at \$3.42@3.45 per 150-lb. sack; in Buffalo at \$2.35@2.40; in Philadelphia at \$2.60; in Indianapolis at \$2.30@2.35; in Cincinnati \$2.25@2.30 per cwt. Practically all of these markets report a good demand with quotations at a higher level. Michigan growers are receiving \$1.67@2.10 per cwt. in bulk at warehouse. Haulings are in only moderate volume.

EGGS.

Buyers are accepting eggs freely for consumption and storage. The market is holding steady, and prices are practically unchanged. At Detroit fresh firsts are now quoted at 41½¢; extra firsts in new cases at 42½¢; storage

packed firsts in new cases 43½¢; extra do 44¢. The Chicago egg market is somewhat unsettled with firsts at 39¢@41½¢ and ordinary firsts 40¢@41¢, and storage packed stock 42½¢@43½¢. The New York trade is firm with the fresh stock ranging from 42¢@47¢. The Philadelphia market is also firm with western extra firsts at \$13.20; firsts \$12.90 per case.

WOOL.

Shearing has been delayed by unfavorable weather. Buying starts in Michigan and growers are set on receiving 50¢ for good wools, and we understand some buying is being done at this figure. This shows a very decided change of sentiment since a fortnight ago. Growers are watching the government auction sales closely, another series of which is being held in Boston this week. Rapid growth of county and other associations in the primary centers for fleece wool has been noted this season. This notable development is attributed to the difficulties of handling fleece wool under government control, the objects being to pool clips and secure a better price for the growers. Incidentally, the movement is used for the improvement of quality in the fleece clips as well as in methods of handling.

DETROIT CITY MARKET

A fairly heavy supply of potatoes was in evidence at the city markets early this week and sold at \$1.25@1.30 per bushel for No. 1 stock. Eggs were bringing 42¢@45¢; veal 25¢; poultry at 40¢; apples \$1.50@3.50 per bushel; navy beans 7½¢@8¢ per pound.

GRAND RAPIDS

Potatoes were higher last week at \$1.10@1.20 per cwt. in the local market, with only light receipts, the crop being well cleaned up in this section. At various shipping points in western Michigan the market was somewhat erratic. The week opened around \$1.25 per cwt. and closed at \$1.60@1.85. The growers let loose a large quantity at the principal market in Montcalm county when \$1.60 was bid; price sagged to \$1.25 and non-delivery by growers again caused dealers to bid up for a supply as there was a strong demand to fill order. In general potatoes are about double in price compared with a year ago. The hay situation is acute and dealers predict \$40 per ton. No. 1 clear timothy is quoted at \$35 on the city market and none to be had. Mixed is \$30@31 and receipts are very light. The price of beans remains steady at \$5.50@6 per cwt. to growers and only a few being marketed, the crop being practically out of the growers' hands.

STABLE WHEAT PRICE ASSURED.

Despite maintenance of the government guarantee price in the face of an American wheat crop which probably will break all records, domestic consumers will not pay more for the product during the coming year than the rates concurrently accepted from foreign buyers, Julius H. Barnes, newly appointed federal wheat director, assured the public in a statement made Monday.

Mr. Barnes termed unsound any governmental scheme of artificial subsidizing. He thought it quite possible, with the greater part of Europe looking to America for food, and the crop prospects of the allied countries even poorer than last year, that little inroad except of a temporary nature, would be made on the \$1,000,000,000 fund provided by congress to carry out the farmer's guarantee of \$2.26 a bushel.

However, should there be a surplus production of wheat, he said, the national treasury would be protected as far as possible in making good the difference between the guaranteed and market rates by the termination of a world price for the sale of the surplus. At present the world price exceeds the government price.

In relation to federal acquisition of wheat, which he predicted would be carried out on an extensive scale in enforcing the farmers' guaranty, particularly if the world price should be lower than the government basis, effective until June 1, 1920, Mr. Barnes said three plans were under consideration: Direct dealing with the farmers; purchasing through the country grain exchanges; and buying through the mills.

Live Stock Market Service

Reports for Thursday, April 24th

BUFFALO.

This market today sold pigs at \$20.50 and other grades of hogs at \$21.50@21.75. Lambs reached \$17.65 and calves \$16.50.

DETROIT

Cattle.

Receipts 1,795. Market is steady at Monday's prices.

Best heavy steers	\$14.00@15.50
Best handy wt bu str	12.50@13.50
Mixed steers and heifers	12.00@13.00
Handy light butchers	10.50@11.50
Light butchers	8.50@10.00
Best cows	10.00@11.00
Butcher cows	8.50@9.50
Cutters	7.00@7.75
Canners	6.00@6.75
Best heavy bulls	10.00@12.00
Bologna bulls	8.50@9.50
Stock bulls	7.50@8.25
Feeders	10.00@13.00
Stockers	8.00@10.00
Milkers and springers	\$85@165

Veal Calves.

Receipts 1,911. Market dull and 50¢ lower.

Best	\$14.50@15.00
Others	10.00@13.00

Sheep and Lambs.

Receipts 2,480. Market dull.

Best wool lambs	\$16.00@16.50
Fair lambs	15.00@15.25
Light to common	10.00@12.75
Fair to good sheep	12.00@12.75
Culls	7.00@8.75

Hogs.

Receipts 6,280. Market steady.

Pigs	\$19.75
Mixed	20.60

CHICAGO.

Hogs.

Estimated receipts today are 31,000; holdover 6,206. Market strong to 10¢ higher. Bulk of sales \$20.85@21.05; tops \$21.10; heavy, 250 lbs up, medium, good and choice \$20.95@21.10; medium, 200 to 250 lbs, medium, good and choice \$20.70@21.10; light, 150 to 200 lbs, common, medium, good and choice \$20.25@21.05; light lights, 130 to 150 lbs, common, medium, good and choice \$19@20.50; heavy packing sows, 250 lbs up, smooth \$19.85@20.45; packing sows, 200 lbs up, rough \$18.85@19.75; pigs, 130 lbs down, medium, good and choice \$17@19.25.

Cattle.

Estimated receipts today are 14,000; beef steers opening slow and steady; butcher stock is slow and 25¢ lower; calves 25¢@50¢ lower. Beef steers, medium and heavy weight, 1100 lbs up, choice and prime \$17.90@20.45; do me-

dium and good \$14@18.50; do common \$11.50@14.25; light weight, 1100 lbs down, good and choice \$14.75@18.25; do common and medium \$10.50@15.25; butcher cattle, heifers, common, medium, good and choice \$8.15@15.50; cows common, medium, good and choice at \$7.85@16.25; bulls, bologna and beef \$8.75@13.25; canners and cutters, cows and heifers \$6.25@7.85; do canner steers \$7.75@10.50; veal calves, light and handyweight, medium, good and choice \$13@14; feeder steers, common, medium, good and choice \$10.50@15.75; stocker steers, common, medium, good and choice \$8.75@13.75; do cows and heifers, common, medium, good and choice \$8.50@11; stocker calves, common, medium, good and choice \$8@15.50.

Sheep and Lambs.

Estimated receipts today are 10,000. Market steady; prime shorn lambs at \$16.25; lambs, 84 lbs down, medium, good, choice and prime \$17.75@19.60; do 85 lbs up, medium, good, choice and prime \$17.25@19.50; do culls and common \$13.25@17.75; spring lambs, medium, good and choice and prime \$18@20; yearling wethers, medium, good and choice \$15.50@17.75; ewes, medium good and choice \$11.75@15.50; \$13.25@13.50; ewes \$12.50@13.50.

BUFFALO.

Wednesday, April 23, 1919.

Cattle.

Receipts ten cars. Market steady. Prime heavy steers \$17.50@18.50; best shipping steers \$15@16; medium shipping steers \$13.50@14.50; best native yearlings, 950 to 1000 lbs, \$15@16; light native yearlings, good quality at \$14.50@15; best handy steers \$14@15; fair to good \$12@13; handy steers and heifers, mixed \$12.50@13.50; western heifers \$14@15; state heifers \$10@11; best fat cows \$11@12; butcher cows \$9@10; cutters \$7@8; canners \$5@5.50; fancy bulls \$11@12; butcher bulls \$9@10.50; common bulls \$7.50@8.50; best feeders, 900 to 1000 lbs \$11@12.50; medium feeders \$10@11; stockers at \$10@10.50; light common \$8@9; best milkers and springers \$100@150; mediums \$75@90.

Hogs.

Receipts ten cars. Market higher. Heavy \$21.50@21.65; yorkers \$21.40@21.50; pigs and lights \$20.25@20.50.

Sheep and Lambs.

Receipts five cars. Market strong. Wool lambs \$20.75; clipped \$17.60; yearlings \$14.50@15.50; wethers at \$13.2g@23.50; ewes \$12.50@13.50.

Calves.

Tops \$16.50; others \$7@14.

WILL TEST THE RIGHT TO FIX MILK PRICES.

THE milk producers supplying Chicago have been accused of harboring tubercular cows, killing babies, combining against the poor, downtrodden milk dealer magnates, and now they are being dragged before the bar of justice on the charge of price-fixing. It looks like a bar of injustice if anything, they say.

In twenty-five county seats and thriving farm towns of northern Illinois, Indiana, and southern Wisconsin, deputy United States marshals last week stepped into the offices of the Milk Producers' Associations and served subpoenas upon the secretaries to take forthwith to the federal grand jury in Chicago all their records and correspondence. There are estimated to be sixteen thousand milk producers belonging to the associations.

The Producer's Defense.

The defense of the producers will be that the contract entered into February 1 was sanctioned by the food administration. By this contract, it is understood, the producers, through the Co-operative Marketing Company, demanded six months' contracts from distributors and control of prices.

The grand jury is said to have received information that recently there was a general order sent to farmers and country dealers to withhold their butter from Chicago because the price had dropped below sixty cents in the city. With the supply shut off the price shot up above seventy cents.

Dairymen say to this that low prices are for un-moulded country butter, or butter as it comes from the churn. You can buy the same butter in Chicago for much less than sixty-five to seventy cents. They say the attorneys do not make fair comparisons, and their ideas as to surplus and increased production are subject to sharp revision.

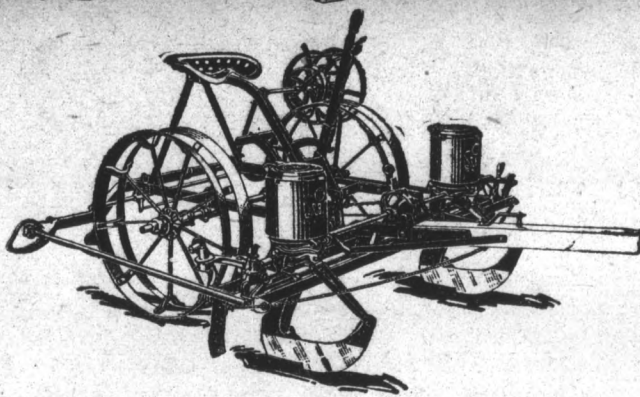
THE NEW YORK PRODUCE MARKET.

Butter.—Strikes and rumors of strikes have tended to keep the butter market in a highly nervous condition. First, there was the rumor of a strike among the river boat workers, which was to follow the first and second strikes of those workers which took place in January and March respectively. As a high percentage of the butter which reaches New York is ferried across the river, the fact that the strike was pending caused a material advance in the price of butter. On the heels of the agitation among the harbor workers came an actual walking out of the freight handlers on the West Shore Railroad. That materially affected the situation also and influenced the market to such an extent that after it was seen that the river men would not cease working the price continued to go up. It is thought that as soon as the strike situation is cleared up the accumulations of butter in the freight warehouses upon being dumped on the market will cause a marked decline in price. Today the market is fairly steady and quotations are as follows: Extras 65½¢@66¢; higher scoring than extras 66½¢@67¢; firsts 64¢@65¢; seconds 61¢@63¢.

Eggs.—The week opened with an unsettled and irregular tone but by Wednesday the market has become fairly firm. As usual during the week preceding Easter there was keen demand for high-class eggs which has tended to keep the price up fairly high. Receipts were about normal for the season but the strike situation on the river kept the egg market somewhat nervous. The market closes strong with firsts quoted at 41½¢@43½¢ and extra firsts at 41¢@44½¢.

Poultry.—Receipts have been high but with the approach of the Jewish Passover buying has been very active. There has been a slightly increased feeling and a tendency for decreased prices. A few spring chickens have been received by express and are selling at 85¢@90¢. Fowls are selling at 37¢@38¢; old roosters at 21¢@22¢; ducks at 30¢@35¢; geese at 20¢@21¢.

Cheese.—The cheese market has been easier this week and prices have declined a shade. The reason for the weakness is because of the inactivity of exporters.



Start Your Corn Right

WHAT greater satisfaction is there than to look over a field of sprouting corn and see 2, 3 or 4 sturdy plants in every hill, just as you meant them to be when you set your planter? That is the kind of a start your corn gets when you use an International or C. B. & Q. Corn Planter.

These machines plant corn accurately, whether used with edge drop, flat drop, or full hill drop plates; whether the corn is checked or drilled. The drop clutch can be changed, while the planter is working, to drop 2, 3, or 4 kernels to a hill. The tongue is easily adjustable to the height of the horses. A handy foot drop lever makes head-row planting easy.

When you look over the International or C. B. & Q. planter, don't miss the automatic marker, a handy feature that saves a lot of work and time. There are fertilizer attachments if you want them, combination pea and corn-planting hoppers, open wheels or closed—your planter will be equipped just as you want it. You can plant rows 28 to 48 inches wide by 2-inch adjustments, with four distances between hills.

These planters are so good you will want to know all about them. Drop us a line and let us send you full information.

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Binders Push Binders
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Soil Pulverizers
Cultivators

Power Machines

Kerosene Engines
Gasoline Engines
Kerosene Tractors
Motor Trucks
Motor Cultivators

Haying Machines

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Loaders (All Types)
Rakes Bunchers
Combination Side
Rakes and Tedders
Sweep Rakes Stackers
Combination Sweep
Rakes and Stackers
Baling Presses

Planting & Seeding Machines

Corn Planters
Corn Drills
Grain Drills
Broadcast Seeders
Alfalfa & Grass Seed
Drills
Fertilizer & Lime
Sowers

Corn Machines

Planters Drills
Cultivators
Motor Cultivators
Binders Pickers
Ensilage Cutters
Shellers
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Cream Separators
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We need your shipments of Poultry, Veal, Dressed Hogs, Live Roasting Pigs, Eggs, Live Rabbits and Game. Highest prices possible obtained on arrival. We can handle your Potatoes, Onions, Apples, Cabbages and root crops, carrots or less. Your shipments will be appreciated and have our best care and attention, and you don't have to wait for your money. Reference Peninsular State Bank.

Mr. POULTRY FARMER:

We make a specialty of White Henner Eggs and have created a profitable market for your eggs the year around. We pay the highest premium for your Henner Whites—We remit same day shipments arrive. Ship Often—Ship by Express

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Wanted: Michigan 90 to 125 pound healthy pigs in car lots. We buy them all year. Write Danville Stock Hog Co. Danville, Illinois.

HOGS.

DUROC-JERSEYS

Fall pigs either sex also spring pigs pairs not akin. Sired by the Grand Champion and Junior Champion F. J. DRODT, R. 1, Monroe, Mich.

Descendants of the leading strains: Cherry King,

Defender, King of Col's, The Professor, all bred to Col. Defender the 26th. Mo. 123705, his sire, Pal's Premier Col. T. No. 81021. Dam, Royal Defendress No. 231580, one of the most promising herd boars in Michigan. Prices reasonable. Write for prices and further information.

THE JENNINGS FARMS, R. 1, Bailey, Mich.

SEVERAL GOOD

Duroc sows bred to Orion's Fancy King. Boar pigs ready for service.

NEWTON BARNHART, St. Johns, Mich.

DUROC-JERSEYS

E. D. HEYDENBERG, Wayland, Mich.

Duroc Jerseys—A few choice gilts bred to Brookwater King Special 111467. (A full brother to Brookwater Lass D. the grand champion sow at the 1918 International). Carey U. Edmonds, Hastings, Mich.

Duroc Jersey's—A few extra good fall boars sired by Orion Cherry King Col. 2nd. Bred sows all sold. W. C. TAYLOR, Milan, Mich.

Spring Farrow sows all sold. Write me your future wants. JOS. SCHUELLER, Weidman, Mich.

Hampshires Bred gilts and spring boar pigs for sale now. JOHN W. SNYDER, R. 4, St. Johns, Mich.

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big type O.I.C.'s. Stock of all ages for sale. Herd headed by Calloway Edd, the World's Champion O. I. C. boar assisted by C. C. Schoolmaster, Grand Champion boar of Michigan, New York and Tennessee state fairs. Also, C. C. Giant Buster, undefeated Senior boar pig wherever shown and Grand Champion of Oklahoma state fair. Get our catalogue of Orandell's prize hogs, Cass City, Michigan.

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Chesters, March and April pigs in winning stock prices reasonable satisfaction guaranteed. F. W. ALEXANDER, Vassar, Mich.

O. I. C.'s. Serviceable boars of last summer and fall farrow. G. P. ANDREWS, Dansville, Mich.

O. I. C. Bred Gilts All Sold. H. W. MANN, Dansville, Mich.

O. I. C. Boar, 14 months old. Large fall pigs of either sex. Rockford, Mich. O. J. THOMPSON.

O. I. C. Gilts bred for summer farrow and a few fall boar pigs any of them good enough to ship. C. O. D. F. C. BURGESS, R. 3, Mason, Mich.

O. I. C.'s 2 Choice Yearlings Boars and Spring pigs. Clover Leaf Stock Farm, R. 1, Monroe, Mich.

O. I. C.'s One very good yearling boar, a few last Sept. gilts, and this spring pigs to offer. Registered free. 1/2 mile west of Depot, Citizens Phone 124. OTTO B. SCHULZE, Nashville, Mich.

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SHORTHORNS—POLAND CHINAS

Three choice heifers and a few young cows to offer. Also fine good gilts bred for late spring farrow. Prices are attractive. P. P. POPE, Mt. Pleasant, Mich.

For 25 Years We have been breeding Big Type Poland Chinas. Our new herd boar "Michigan Buster" is a mighty good son of the great "Giant Buster", dam "Mow's Miss Queen 2". Some breeding! We are all sold out except a few fall pigs. J. C. BUTLER, Portland, Mich.

Big Type Poland Chinas

Am offering a choice gilt, registered and cholera immune, with her ten pigs farrowed Apr. 1. Also her boar pig of April farrow raised last year; absolutely right, priced at \$75. Wesley Hile, R. 6, Ionia, Mich.

P.C. bred gilts sold. For sale herd boar prospect 17 mo. old, wgt. 600 lb. with quality, sire Buster Giant, 269583, dam Nemo L. 548940 an 800 lb. sow in flesh. Sire sold for \$1500, priced reasonable. Free delivery from Parma. W. E. LIVINGSTON, Parma, Mich.

Big Poland Chinas with quality. For

sale, summer and fall gilts, open or bred.

G. A. BAUMGARDNER, R. 2, Middleville, Mich.

L. S. P. C. Bred sows all sold. 2 boars ready for service. Also 1 fall boar, and fall gilts to breed for fall farrow. H. O. SWARTZ, R. 1, Schoolcraft, Mich.

Big Type Poland-Chinas pigs, sired by C. A. King Joe 290831, by King Joe 251257, Monster Big Bob 327623, by Luken's Big Bob 287777, Buster Half Ton 288225, by Great Big Half Ton 261243. Out of sows, whose pedigree, individuality and quality are of equal merit as my herd boars. Can furnish pairs and trios, not akin. C. A. BOONE, Blanchard, Mich.

MICH. Champion herd of Big Type P.C. Nothing for sale but fall pigs; orders booked for spring pigs. E. R. LEONARD, St. Louis, Mich.

Big type P. C. fall boars the big prolific kind, their breeding traces to the best herd in Ill. Iowa, & Neb. C. E. GARNANT, Eaton Rapids, Mich.

Large Type P.C. Nothing for sale now. Will be in market with better than ever this fall. If herd still counts. W. J. HAGELSHAW, Augusta, Mich.

Big Type P. C. boar and bred gilts. Choice Aug. pigs at a bargain. A. A. WOOD & SON, Saline, Mich.

Big Type P. C. Choice bred sows from Iowa's greatest herds, the big bone prolific kind with size and quality. E. J. MATHEWSON, Burr Oak, Mich.

Big Type Poland's all sold out, nothing for sale at present. Booking orders for spring pigs. Thanking my customers L. L. Chamberlain, Marcellus, Mich.

Mammoth Poland Chinas all sold. General Jones No. 317249, son of Gerstale Jones heads our herd. Clyde Weaver, Ceresco, Mich.

Big Type P. C. Will have better males than ever for fall trade, gilts in season. JOHN D. WILEY, Schoolcraft, Mich.



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Your car's a time-saver—a distance cutter. It will help you keep the home fields earning. But to get its best work, you must give it good tires.

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