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CURRENT COMMENT.

### Food Administration Problems.

That the problems confronting the United States food administration are not only many, but exceedingly complex and difficult of solution is a fact appreciated by every person who has given the subject more than passing thought. That these problems are being approached by Food Administrator Hoover with a view to their solution in such a manner as will conserve the best interests of the country is apparent to those who have followed the progress of administration work during the brief period since the passage of the food control law.

The food administrator's appreciation of the producers' problem and the necessity of its proper recognition in administrative work was clearly revealed in his talk to farm paper editors and publishers at the conference called in Chicago on August 25. If the farmers of the country will but possess a like appreciation of the problems involving food administration for the country in the present emergency, and the necessity of conserving the interests of the consuming public, unjust criticism may be avoided in a most desirable manner. Constructive criticism is always welcome and we believe will receive every consideration which it may merit in food administrative circles.

The absolute elimination of the speculator in the handling of wheat and its products, and the practical elimination of speculative operations in other important staples will unquestionably prove of great advantage to the country in the present emergency. The machinery which has been created for this purpose will undoubtedly prove effective in stabilizing the wheat market at the price named by the representative price-fixing committee, the personnel of which was given in the last issue. The administrative aids in other lines, while not so direct or pronounced as will be the case with the marketing and distribution of the wheat crop, will undoubtedly be most helpful in the stabilizing of prices, equalization of distribution and the stimulation of consumption where same will prove of

economic benefit to consumers as well as producers.

All questions of Michigan Farmer readers relating to this new government activity, will be gladly answered either from information placed on file at this office by the food administration, or by direct reference of such questions to the food administration office at Washington if this course is required.

### The Dairymen's Problem.

A large section of the dairymen of Michigan were represented at the delegate meeting called by the Michigan Milk Producers' Association at M. A. C. on Tuesday, August 21. The main purpose of this meeting was to consider the problems surrounding the dairy industry, particularly in the condensary districts of the state, where no milk contracts are in force and prices are made on a month to month basis.

This meeting was one of the largest and most enthusiastic ever held in this state. The room in the Agricultural Building in which the meeting was first called was wholly inadequate, and the meeting was adjourned to the College armory to afford room for the many hundreds of delegates present.

After a discussion of the problems involved, a committee was appointed to determine upon a price figure which the delegate members would consider reasonable and compensatory for their milk under present conditions. After careful consideration this committee reported, that basing the cost of producing milk in Michigan on the most reliable data obtainable, the indicated cost of production was \$2.64 per cwt. Adding to this ten per cent as a reasonable profit, producers should get an average price of \$2.90 per cwt. Taking the present and near future into consideration the committee said the price should be \$2.75 for September milk and \$3.00 for October milk, delivered at condensaries, and ten per cent more for city market milk.

By a coincidence, at the same time this meeting was in progress, a hearing was being held at the office of the Food Administration in Washington with regard to the status of the dairy industry of the country. What action may be finally taken by the Food Administration is not apparent at this time, but President Campbell of the National Milk Producers' Association, wired Secretary Reed of the Michigan Milk Producers' Association to the effect that a compensatory price was practically assured.

In the meantime the committee appointed at the suggestion of Secretary Reed of the Michigan Milk Producers' Association to make an investigation of the conditions surrounding the dairy industry of the state and report on the same are contemplating a rather complete survey and report on the status of the dairy industry, in accordance with the following resolution which was adopted at their initial meeting held on August 14:

"Whereas, we believe that the average prevailing price which the dairy farmers of Michigan have received for their product during the present season has been less than the cost of production, whether sold as market milk or for the manufacture of condensed milk, butter or cheese, and

"Whereas, the general realization of this fact by producers is causing a deplorable sacrifice of dairy cows which are indispensable to the welfare of the country in the present emergency, and

"Whereas, we believe that dairymen are entitled to a price which will equal the cost of production, plus a reasonable profit, therefore,

"Resolved, that this commission immediately undertake a comprehensive survey of the dairy situation, with special reference to the cost of production on the dairy farms of this state, as a basis for a more equitable valuation of dairy products by producers, distributors and consumers."

With these various agencies working toward a solution of the problem of saving the dairy cows of Michigan for future service in this period of emergency, there is every likelihood that

large buyers of milk will adjust their business to meet the needs of the situation in an amicable manner. The dairy farmers of the state must have a higher price for their product than they have heretofore obtained, else they will quit the business of milk production in large numbers, a tendency which must be avoided if possible. An amicable solution of the problem is greatly to be desired and will not prove difficult if the problems involved are approached in the spirit of fairness by every interest involved.

Every farmer in Michigan who can possibly arrange to do so will find it

to his advantage to attend the Michigan State Fair some time between August 31 and September 9. The educational and entertainment features of this year's State Fair promise to be of a most superior character. Every member of the family will be benefited by a trip to the State Fair.

While at the State Fair call at the Michigan Farmer Building or booth. Our representative will welcome you.

### The Local Creamery Problem.

On another page of this issue appears an article touching upon the competition for milk by local creameries and condensaries in which the position is taken that the farmer ought for the sake of perpetuating the local institution, to patronize it in preference to the newly built condensary.

It is not our desire to question the conclusion arrived at by the writer of this article, although many producers would likely take exception to it, but merely to draw attention to the fact that American producers owe something in the way of supplying food to the men that are, and will be, fighting in the trenches of Europe and on the high seas for the principles of democracy. Condensed milk seems to be a necessary article in the commissary department of the modern army organization. It is also a food in great need by those unfortunate people who happened to live in lands that are now overrun by armies or cut off from their regular source of supplies by blockades and embargoes. To these people and to the soldiers it is a matter of rather extreme necessity to have this article of food. Where is the supply coming from? Certainly the immediate necessity will not warrant the waiting for new or enlarged herds of dairy cattle to supply the raw milk out of which the condensed product is manufactured. The milk supply must come from the already established dairy districts of this and other countries. In many of these places the condensaries established may have only a temporary use; but allowing this does not disprove their present need nor answer for our obligation to our soldiers.

It would seem that under our present method of selling milk from the farm that the law of competition should aid the farmer in deciding just how he will dispose of his product. If the condensary can give him more for his milk than the creamery it would seem to be clear that the world's need for condensary products is greater than its need of butter. When milk has been diverted to the manufacturing of other dairy products for some time then the price of butter will advance to a point where the creamery can successfully compete with other lines for the raw material. If to this price-motive is added the duty we owe our soldiers and the unfortunate peoples in war-stricken Europe, our course should be plain. To be sure, it is discouraging to see the work of years in building up a successful creamery apparently go for naught, but war is a business that disturbs every phase of our industrial life—some industries are demoralized by it while others are made prosperous and if the creamery is one to suffer during these

### HAPPENINGS OF THE WEEK.

#### Foreign.

The European War.—The Italians are continuing their drive on the Austrian frontier. While the Austrians are resisting stubbornly, they have been obliged to give way steadily before the advancing columns. Large bodies of troops have been isolated from the main divisions through the destruction of large storehouses by Italian airmen. The total losses of Austrians from all causes during this drive are reckoned at around 100,000 men. The largest losses have occurred in the Carso region.—On the western front both the French and English troops have made important gains during the past week. Particularly along the river Meuse have the French pushed forward the battle line and made for themselves additional space for maneuvering. They have taken possession of Hill No. 304 and of Fosses and Beaumont Woods, which brings them to the outskirts of the village of Beaumont. The British have taken strong positions north of St. Quentin. Canadian troops have also improved their lines about Lens, which is being so stubbornly defended by Germans.—Reporters from Russia insist that the Teutons are massing large bodies of troops and great stores of ammunition for an apparent drive upon Riga. According to a Berlin report, German troops have already reached the river Aa. In Roumania the Russian and Roumanian troops have stiffened their battle line to a degree which has prevented any further gains by the enemy, attacks delivered at several points having been checked and in some instances the invaders have been compelled to make retreats.

A Russian national conference is assembled at Moscow this week to consider the present political situation of the country and to lay plans for a new national government. In the address of Premier Kerensky, he declared that any attempt to take advantage of the conference for an attack upon the power of the provisional government would be violently repressed because of the mortal danger that the nation is now facing.

It has been announced by the Dutch press that Germany now proposes through the new government under Chancellor Michaelis to transform Alsace Lorraine into an independent federal state.

Count von Bernstorff, former German ambassador to the United States, has been selected as the German ambassador to Constantinople.

#### National.

Last Thursday it became necessary to institute martial law at Houston Texas, following the killing of seventeen persons during a raid on the city by negro soldiers of the twenty-fourth infantry. While quiet has been restored, and the order for martial law rescinded, the residents of Houston have appealed to Washington to keep negro soldiers away from the local cantonment.

The movement of recruits has been greatly simplified by a new war order changing the method and the time for sending selective army men to camps. Instead of moving these troops in large bodies, they are, under the new order, to go forward in allotments of 600 men. This change will not only aid the local military boards, but will simplify the transportation problem and also the making of preparations at camps for receiving the new recruits.

Through the co-operation of shippers in using available freight car space the service of the country by the railroads has been increased by 120,000 extra carloads through the month of July.

After a review of the reports of local military boards, it has been estimated by army officers that fully ninety per cent of the men passed for service as physically fit would be accepted for examination at mobilization camps by army surgeons.

Food stocks held in retail stores of cities and rural districts of forty-three counties in various parts of the country will be inventoried August 31 by the Bureau of Markets to furnish a basis for an estimate of the amount of food products in the hands of the retail dealers of the country.



# Conserve the Corn Crop

By I. J. MATHEWS

IT is claimed that the nutrients saved by putting corn into the silo are sufficient to feed eighty soldiers for a month. This is reckoned on the silo of ordinary size, say twelve feet in diameter and twenty-eight feet high. It therefore follows that he who fills a silo of the ordinary size is as great as eighty soldiers on duty for a month, for we are just commencing to realize the truth of Napoleon's historic statement that "soldiers fight on their bellies."

As soon as we commence to talk about silos, there are some who immediately ask which silo is best, referring, of course, to the material of which the cylinder is constructed. This question may be dismissed very briefly by saying that the material of which the silo is constructed has nothing whatever to do with the quality of the silage that may result. As a matter of history, the old Romans secured a very palatable silage by digging holes in the earth and then filling these holes with green grass, beet tops and other similar vegetables. Then some of the old war horses were put in on top of this mass of green stuff and the slaves kept them constantly going. In this manner, these old silos were packed and the silage was thus made airtight.

We have silos made of wood, bricks, stones, cement, tile and even metal. All of them give good satisfaction if they are constructed correctly. Any silo will be sufficient to secure a good quality of feed if it is absolutely airtight. Some wooden silos are a failure because the owner does not tighten the hoops regularly. Brick silos are pronounced useless sometimes because the mason did not mix his binding material properly and close all interstices. Cement silos occasionally give a poor feeding silage because the cement, sand and gravel was not mixed in the right proportions. Whatever kind is used a strenuous effort should be made to have the construction such that the building is airtight. As a matter of fact, the silo is the cheapest houser of roughage that can be built.

A beef man recently said to me: "If I needed a barn and a silo at the same time, I would build the silo first." When queried as to the reason for such a statement, he claimed that if stock had enough nourishing food to eat, they could get along with rather poor shelter, but that no amount of shelter could make up for a deficiency of food. There is probably a great deal of truth in this statement.

## Time to Cut Corn.

It seems to be quite generally conceded among successful dairymen, beefmen and sheepmen that the proper time to cut corn intended for ensiling is at the same time it should be cut if it is allowed to remain in the shock. In the early history of the silo it was recommended to cut the corn somewhat greener, or when it was in the dough. This often resulted in a green, succulent feed that contained considerable acid and this had a laxative effect upon the animals. This very fact made it undesirable, for just as soon as an animal is physiced, the food is rushed through the digestive tract so fast that the nutrients cannot be taken from it and the feed is therefore wasted.

The old idea seemed to be that the corn should be cut at the right time so that it would contain sufficient moisture to pack tightly and none other would need to be added. We are certain now that by leaving the corn until a little later, there is a great increase and transformation of the food nutrients and that in order to get the water in the silo, it is much better to have a stream of water playing directly into the blower.

Right in this connection, there comes up the question as to whether

the corn should be allowed to wilt between the time it is cut and when it is put into the silo. The theory is often advanced that some chemical deterioration is experienced through the wilting. This does not seem to be borne out by fact and there seems to be no valid objection to the cornstalks wilting somewhat. Of course, they are a little more difficult to handle and don't feed quite as nicely into the cutter when wilted but their food value is just the same. The corn to be put into the silo is preferably cut the day before filling, or possibly the corn binder is kept going while the filling is in progress. If the corn is cut by hand, scarcity of help may make it imperative that this job be done beforehand. Those who find this true, need not feel that they are losing any of the nutrients contained in the corn.

## Arrangements for Filling.

Boys in training camps being groomed for service cannot be helping to fill silos, as many of them have been accustomed to do heretofore. It will be necessary this year, more than ever before, to so arrange things that the greatest economy of human labor will be possible.

The cutter should be gone over

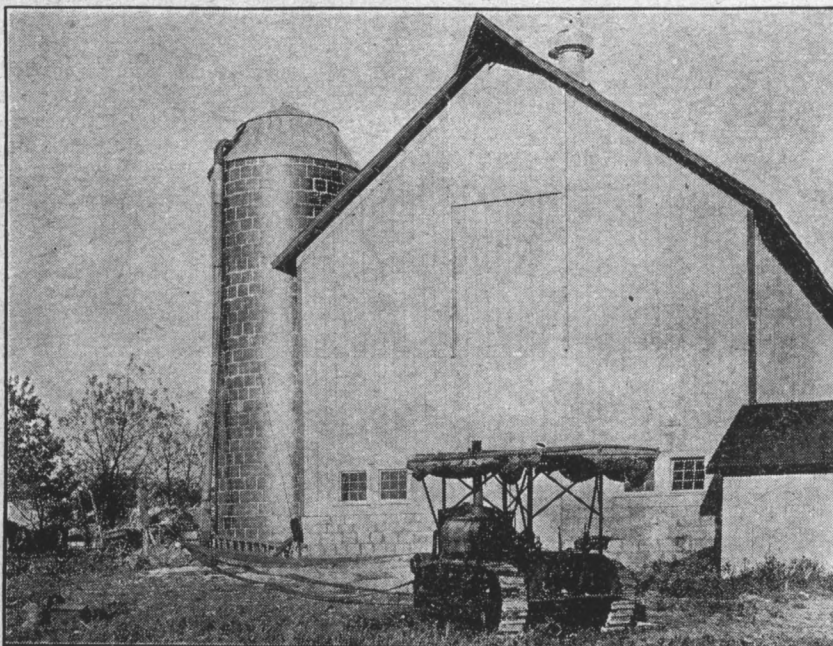
ing all the time and the load is thrown off easier for the same reason. The bundles of corn ought to be loaded with the butts all one way since this is the way they are fed into the cutter.

The person who feeds an ensilage cutter should, by no means, be a boy. This is a man's size job. I believe it is pretty generally conceded that the bundles should go into the cutter butts first. They are often a little difficult to start this way but when once started, the leaves feed in without catching. The man who is unloading should watch the bundle as it goes into the cutter and the butt of the bundle he throws off should strike the bundle going into the cutter about a foot above the band. With bundles cut in the regular way, this spacing reduces the amount of effort necessary to get the bundle butts between the rollers.

One word of caution should be uttered to all who are unloading. Many accidents are caused not by the feeder but by the one who is unloading. Be careful not to throw the bundles onto the feeder. Give him as much freedom as possible.

## Closing the Silo.

If possible, the silo should be completely filled at one setting for I have noticed that where two or three days elapse before the job is completed, there is a great difference in the quality of the silage for two or three feet.



Utilizing the Farm Tractor in the Conservation of the Corn Crop.

thoroughly every morning and noon to see that there are no loose nuts. The blades ought to be not less than ninety-five per cent sharp any of the time so that the corn can go through as rapidly as possible and so that all the power of the engine will be available to cut corn and none of it used for grinding corn.

The silo should, by all means, be cleaned out and doors placed conveniently so that no hitch be necessary while filling is in progress. A single weak cog in the wheel of filling cuts down the efficiency of all who are helping. The number of teams ought to be in nice balance to the length of haul, and if both short and long hauls are necessary the hauls should be definitely planned so that there is not a superabundance of corn when the corn is coming from nearby and a great dearth of it when all are hauling from the farthest point in the field. It must be remembered that the most efficient use of the packers and the men inside the silo is made when the machine is running to its capacity all of the time.

Very often boys are worked in to haul during silo filling. It is a wise thing, many times, to give them instructions before they begin concerning the way their loads should be put on. I find it most convenient to load my wagon from the front end rather than trying to load the rack evenly. This arrangement makes it somewhat easier to load since there is solid foot-

While filling it is imperative that there be enough men inside the structure so that the silage will be tramped solidly. Silage is to the cow what sauer kraut is to man, and the principle that makes for good succulence is that all the air shall be excluded while the fermentation process is going on. An extra man in the silo would prove more economical in the long run than one less than there should be. One man to handle the distributor and two to constantly tramp will do the job in a silo of ordinary size. Larger diameters demand more tramping.

The volume of silage contained in a cylinder the size of the silo and only a foot deep is enormous and for this reason, anything that will make for less spoilage is always in order. Probably the old standard way is to run straw through the cutter the last thing until the straw is a foot or so deep over the top of the silo. After this has been wet down thoroughly, a bushel of oats are sown about over the straw. The heat of the fermentation taking place below causes the oats to set up a rapid and luxuriant growth and the roots are thrown out so thick that the spoilage of corn is cut down to the minimum.

Salt is sometimes thrown on top of the silage and is claimed to reduce spoilage. My observation does not recommend the practice, however. I have known of several cases where tar has been poured over the top of the silage.

This soon hardens and may be taken out again and kept for the next year and it surely does effectually exclude the air.

Make a memorandum of the fact that corn for the silo should be cut as though it was to be shocked. Labor must be made to go as far as possible this year and some means should be taken to preserve as much of the corn as possible after it has been put in the silo. The full silo means enough food saved to feed eighty soldiers a month or one soldier for six years and eight months.

## MIDDLE WEST WHEAT CONFERENCE.

On call of Secretary David F. Houston, there was a conference at the Claypool Hotel, Indianapolis, Indiana, August 20, to consider in general the wheat situation and to arrive at some method of increasing the crop next year. There were present President Raymond A. Pearson, of the Iowa Agricultural College, (recently nominated assistant secretary of the United States Department of Agriculture), who presided; a number of other representatives of the United States Department of Agriculture, agricultural college and experiment station men, agricultural extension leaders, farmers, state agricultural leaders and editors of representative farm papers.

Chairman Pearson called attention to the fact that while our exports of wheat were about one hundred million bushels annually before the war, they were three hundred and thirty million bushels the first year of the war, two hundred and forty million the second year, one hundred and seventy-five million the year just closed, and would probably drop to seventy-five million during the present fiscal year, unless strict economy is practiced in this country. Before the war France produced over three hundred million bushels annually, while in the year just closed the product was but one hundred and sixty-one million bushels. He said that while congress evidently intended to guarantee \$2.00 for wheat, the food act does not specifically provide for enforcement of the price, but leaves the matter of differential between spring and winter wheat, for moisture, etc., to be determined later. In fact, on the basis provided, No. 2 red winter wheat might range from \$1.80 to \$2.40.

Dr. W. A. Taylor, of the United States Department of Agriculture, said that the conditions had brought the wheat acreage about up to the advisable maximum. More acreage might mean a waste of much good seed. The bulk of the wheat must come from the corn belt, the plains and the Pacific Coast states. He advised not to be stampeded to wheat growing from rye, which is also a bread grain.

Mr. G. I. Christy, leader of extension work in Indiana, said this year's crop had been decreased by fly and winter-killing and that more land must be turned back into crop rotations. In his judgment labor shortage would make the increased demand impossible to meet and he urged exemption of farmers from military service in a large way. The average farmer has been handicapped by high costs of fertilizer and seed wheat, as well as the transportation difficulties. He said that some milling companies are furnishing seed wheat to farmers on a share basis.

State Leader Fred Mutchler, of Kentucky, said that his state expected to meet the thirteen per cent increase demanded. Said that on account of limestone being classed as road material instead of fertilizer, it was hard to get prompt railway service.

Extension Leader Clark S. Wheeler, of Ohio, reported that his state felt normal but doubted the ability of Ohio farmers to meet the demand for sixty per cent increase in acreage. In fact



he thought this demand based on a misunderstanding. In his judgment, increased yield and good price this year, together with a good price promised next year, would help much to increase production. He thought the guaranteed price a most important factor. Seed seems plentiful but fertilizers have had to be placed in a preferred class for prompt shipment.

Joseph Cox, of Michigan, said his state was in position to increase the crop greatly. The present acreage is about two-fifths of what was raised a quarter of a century ago. The great problem in his state is to clear up the mixed varieties and establish varieties of tested merits.

Prof. G. N. Coffey, of Illinois, reported an acute labor situation. In the leading corn sections increased wheat acreage will help to solve it. A large percentage of winter wheat was killed last spring so corn acreage was larger than usual. He urged spreading surplus straw back to the land. This season such treatment showed better returns than fertilizer.

Extension Leader K. L. Hatch, of Wisconsin, reported an increase of thirty-three per cent, due to the campaign for spring wheat, and expected a similar response for winter wheat. New lands will largely be utilized and there will be much replacement. Said that Wisconsin bankers had bought up entire stocks of pedigreed seed wheat at \$1.00 above the market price, to be sown this fall. He called attention to the demand of the government for ten million acres more of cereals, with a much smaller labor supply.

Eugene Davenport, Dean of the Illinois College of Agriculture, reported that wheat would be largely increased as a labor saver. A minimum number of men and women can harvest wheat, but not corn. Said that all farm machinery would probably cost twice as much as formerly, and labor would be no lower. It would not be possible for farmers to work harder than they had this year. Claimed that farm boys and men would not demand exemption from army service unless the country people were educated to the need of their doing so.

Director Chas. E. Thorne said that Ohio had probably exceeded three million acres in the past, and could do so again. Assessors' returns show 2,900,000 acres one year—the actual acreage probably being more. The tremendous crop just harvested is probably the record yield and with the good price will encourage more planting. There is no reason to fear serious insect injury. Early seeding will overcome the jointworm. The serious problems are labor—which must be maintained—and fertilizer. He said that the increased cost of acid phosphate would cause an increase in favor of raw phosphate rock, but that it should be used in liberal quantities.

Mr. B. F. Harris, "banker-farmer," said that the die was cast for Illinois, but that wheat might be seeded in standing corn with a saving of time, and for better results with clover next spring.

Agricultural Commissioner Adkins, of Illinois, said that supply and demand would take care of the price better than will the guaranteed minimum. Said the matter of draft exemption was the most important phase of the situation.

Mr. Frost, of Indiana, said that farmers had been led to expect exemption for farm laborers who were essential to maintain production and urged an organized effort to secure it. During the discussion it developed that draft boards refused, in some cases, to meet committees asking exemption in general, but that they would accept specified lists of names with exemption claims for careful consideration.

The very important matter of guaranteed price for next season's crop was scarcely touched upon and nothing definite was announced concerning

it. Reports from the several states indicated that the great limiting factor of next season's wheat crop was labor shortage and the drafting of farmers into military service.

#### CEMENT BLOCK WATER TANKS.

Some time ago I saw that Mr. Lillie was going to build some stock watering tanks from cement blocks. What was the result? I am about to make a cement tank of some kind and was thinking of making it of cement block. What size would be best for a ninety-acre farm?

Kent Co.

E. F.

It is true that a few years ago I built two cement block water tanks and they have proved fairly satisfactory. The only mistake I made was that I didn't reinforce them sufficiently and we didn't go down into the ground deep enough for the foundation of the tank. The bottom of one tank has been injured by the frosts so that we have had to repair it and another tank had the wall sprung out a little because it wasn't properly reinforced, but if I were going to build a dozen water tanks I would build them out of cement blocks because it is cheaper than it is to build the forms and make a solid concrete wall. If you will use a couple of strands of galvanized wire between each row of blocks when they are laid up you will have no trouble about the strength, or you can use any kind of pieces of wire or iron that are not too large, short pieces will do placed across the ends of the blocks, but they should be reinforced and quite thoroughly, and you should go down at least two feet for the foundation of your tank. It isn't really necessary to put concrete clear to the bottom, you can fill it up with stones if you want to, and sand, and have the last six inches concrete, but the solid foundation ought to be down below frost so that it won't heave when it freezes and thaws, and then by plastering the tank on the inside with a rich coat of cement mortar, two parts of fine sharp sand and one part cement, you will have just as good a tank as you can make out of solid concrete and you avoid the trouble of making a tight board form in which to pour the concrete, and the expense.

The larger you make your water tank the better you will be satisfied. If you have a large tank and anything goes wrong with the windmill or the pump, you have got a supply of water to last until you can fix it; if you have only got a small tank and anything happens to the pump in dry weather or in cold weather, you may run out of water. Our cement tanks, of which we have three, will hold, all together, 500 or 600 barrels of water, and we can stand quite a siege if anything goes wrong with the pump or windmill or the gasoline engine. I would make a tank for a ninety-acre farm not less than ten feet long and five feet wide and three feet deep, and if you make it larger than this you will never be sorry.

COLON C. LILLIE.

#### FARM NOTES.

##### Late Cultivation of Beans.

I am told repeatedly that one should not cultivate beans after they bloom. They claim it is an old saying but cannot give any good reasons. Will you kindly advise me through your columns if there is anything to this and if so state why it should not be done.

Lake Co.

F. W. G.

There is a great variety of opinion among even successful bean growers as to when, how and how late beans should be cultivated. There is a practical unanimity of opinion on the point that the ground should be plowed early and so thoroughly fitted that excessive cultivation of the crop will not be necessary. Some good growers advocate no cultivation except when a heavy crust is formed by a hard rain, and then only a shallow cultivation.

A very large number of growers contend that the crop should never be cul-

tivated when the plants are in bloom, while other and apparently successful growers contend that this is a notion in the same class with that of planting in certain phases of the moon. Experiment stations are surprisingly silent on this question, and have advanced little or no experimental data on the point. There are, however, certain reasons for particular care in the cultivation of beans which do not apply so forcefully to many other crops. Cultivation when the vines are moist as with dew, tends to facilitate the spread of fungous diseases which are a serious menace to the bean crop in this state.

Cultivation when the beans are in blossom would be detrimental to the crop in case any considerable root pruning should result from the operation, which would be the case if the beans are cultivated at all deeply, or if a considerable time had elapsed since the last cultivation. There is the further objection to cultivation at this time that if the beans are planted in narrow rows, the runners will have intermingled and the vines will be considerably disturbed in this case, which in the opinion of many observers makes them more susceptible to the attack of fungous diseases.

If the soil has been properly prepared and the early cultivation of the crop has been sufficiently thorough, there will be little occasion to cultivate the beans when in bloom, for the reason that the vines should pretty well shade the ground at this time. When it is considered that a sufficiently thorough job of cultivation cannot be done at this time to kill the weeds which have gotten a considerable start without serious root pruning, it is probable that any benefits which would be gained from late cultivation will in ordinary cases be more than offset by the damage which would be done by such cultivation. While there may be cases in which such late cultivation will be advisable, as a general proposition, the earlier cultivation should ordinarily be so thorough as to make late cultivation unnecessary.

##### Exterminating Woodchucks.

We have much trouble with woodchucks. What can we do to get rid of them?

Kent Co.

READER.

Probably the easiest method of exterminating woodchucks is to put a quantity of cotton waste or other absorbent material in the burrow and thoroughly saturate same with carbon bisulphide and close up the exits for several hours. The resulting gas will asphyxiate occupants of the burrow.

##### Beans in the Crop Rotation.

I have this year planted beans on heavy clover sod and have a fine crop of beans. I have been told I could plant another crop of beans next year without any added fertilizer on this same soil. I would like your advice on this subject. Another question I would ask is, should I be compelled to use commercial fertilizer? When is the best time to use it, fall or spring? Should I drill it in or spread it broadcast, and how much to the acre? This is a light loam sand soil.

Ottawa Co.

R. F. D.

Under no circumstances should a cultivated crop like beans be planted two years in succession on the same land, particularly on a light soil such as is described in this inquiry. There are many reasons for this, one of the most important of which is that such crops exhaust the humus in the soil very rapidly, and as humus is one of the most limiting factors of production on a light open soil, a short crop rotation should be practiced in which clover occupies the land at least once in three years.

Another reason why beans should not be planted two years in succession on the same soil is that the fungous and insect diseases which attack the bean will be more prevalent where the crop is planted on the same ground two years in succession. The best way to handle this land would be to sow it to wheat or rye and seed to

clover next spring. This soil will be greatly benefited by an application of fertilizer such as acid phosphate or one containing a small percentage of nitrogen with phosphoric acid. Two or three hundred pounds of acid phosphate will materially increase the yield of grain which can be secured from this soil, and will contribute not a little to its permanent fertility. It should be preferably drilled in with the grain at the time of sowing.

#### SOME ALFALFA PROBLEMS.

##### Clipping and Top-dressing Alfalfa.

I am trying alfalfa this year for the first time without a nurse crop. I will give you a brief outline of what I did and ask your advice as to the next move. Plowed seven acres this spring, three acres bean ground last year, four acres two-year meadow; worked it until about June 25; sowed ground limestone on it, using about ten tons to the seven acres. Then I inoculated alfalfa seed and put it on about one peck per acre and dragged it in at once with peg-tooth. The field is heavy clay for the most part, with a few sandy places. The field is rolling so it is pretty well drained. The seed came fine, a good stand. Today the alfalfa stands six to eight inches high and is commencing to blossom, but in a good many places the leaves are turning yellow or pale green. Also quite a few Canadian thistles and rag-weeds have come up along with it. Now the ground was so wet last spring that we could not draw out manure and we have 200 spreader loads or better, in our barnyard. I decided this afternoon upon looking the field over, to go over with mower and clip it quite high, then top-dress it quite heavy. What would you advise?

Genesee Co.

H. J.

I think your method of preparing the land to seed to alfalfa and caring for it is splendid. I wouldn't know how to advise you to do any better. Perhaps the reason why the alfalfa has turned pale in some places is because the lime you put on has not had time as yet to thoroughly neutralize the soil but I would think that you used lime enough so that it wouldn't be necessary to use any more and as your alfalfa is commencing to blossom I believe the best thing you could do would be to clip it and I am positive that you could do nothing better than to top-dress it with good stable manure. I don't believe that you could give it any better treatment than that you have proposed.

##### Cutting Alfalfa for Seed.

As I have a field of alfalfa which I think would yield larger returns as seed, and knowing of you as being a large grower, I take the liberty of writing you for information in regard to the same. If you will kindly answer the following questions I will appreciate it very much as, if I cut it for hay it is ready now. 1. Is the second crop the one to cut for seed? 2. About how many bushels per acre is an average yield? 3. Does it injure the future crops to cut it for seed? 4. Do you think the past hot weather has injured the prospects for seed?

Livingston Co.

J. B. A.

The second crop of alfalfa is the one to save for seed. It is rarely ever saved for seed in this climate as it usually doesn't fill sufficiently so that it would pay. When weather conditions, however, are just right sometimes it fills well. The second crop comes when we are liable to have numerous rains and this interferes with the filling. In the northwest, especially where irrigation is necessary, they grow alfalfa seed to perfection. A crop of twenty to thirty bushels per acre is not unusual but I suspect if you get two bushels or above per acre in Michigan it would be all that you could expect.

It undoubtedly will injure your alfalfa to let it go to seed, it injures the stand of any plant to let it mature seed, but it may not injure it enough so but what it will do fairly well afterwards. It isn't so much hot weather that destroys prospects for plant filling as it is rainy weather. Our common red clover doesn't fill well when we have frequent rains, continuous dry weather always gives us the best filled clover heads.

COLON C. LILLIE.



# Study the Fertility Problem

By MELVIN RYDER

YOU can measure in dollars and cents the results which you obtain from the use of fertilizers, or from a college education, or from attending Farmers' Week at Michigan Agricultural College—but you cannot tell the whole story with figures. You can compare the yields you have been getting before and after using fertilizers, add, subtract and divide to get the net profits and find plenty of proof of the extra money to be had by the proper feeding of your crops, but you cannot sum up so easily everything that fertilizers can mean to the Michigan Farmer.

## Fertilization a Basic Principle.

The use of fertilizers is basic in every kind of farming. They are not now being used on all farms, but a study of soils and crops will show the economic place they fill and that they are needed on all farms. They return plant food to the soils to take the place of the food removed by the crops and to make up for the natural deficiencies of the soils. Without fertilizers the productivity of land cannot be maintained; farmers and farms grow poor, and the community goes "down hill"—until someone comes along who understands how to rebuild "run-down" farms. Then the fields are restored to productivity and value.

Dairy farming, where everything raised on the farm is fed and where some concentrates are purchased may be said to be most nearly ideal, but even in dairy farming additional plant food, principally acid phosphate, must be added if the fertility is to be maintained. Grain farming, truck farming, and general farming remove more fertility from the soil and require the greater use of commercial fertilizers to maintain the present fertility. With higher prices for farm products, it pays greater than ever before to increase fertility and thereby increase yields.

## The Functions of Fertilizer Ingredients.

Nitrogen, commonly called ammonia, phosphoric acid and potash are the three materials most needed by plants and supplied by fertilizers. A great many people in Michigan use the word "phosphate" when referring to fertilizers in general. Fertilizers are sometimes referred to in other sections as "commercial manures," etc. Ammonia is concerned principally with leaf and stalk growth, phosphoric acid with ripening the fruit and filling the kernel and potash with strengthening straw, laying down the starch and plumping the grain. Together they cause rapid plant and stalk growth, form heavy plump kernels, hasten maturity, increase yields, improve quality, and produce maximum results when they are selected to make up for the needs of the crop and soil and used in connection with the best cultural methods of farming.

When soils are allowed to become deficient in plant food, yields are automatically cut down. When they are built up by the addition of fertilizers, their capacity for production is increased. On many farms, the use of fertilizers is already the factor that determines whether crops are produced at a profit or at a loss. On other farms, the fertility has not yet been so completely taken from the soil, but the same condition is coming because attention is not being given to restoring plant food to the fields.

Fertilizers mean very much the same to all farmers—increased yields, better quality crops and maintaining fertility for coming years—but some farmers have been postponing the time when they will "do their part." With present prices for farm products, with rising land values, and the competition of farmers who use fertilizers, the ignoring of the fertilizer problem is "bad

business," as never before. The farmer who does not fertilize is losing out in competition. He is gradually selling off his farm.

## Some Object Lessons.

At the Purdue University, under conditions similar to those in Michigan, the yields of wheat through thirty years have been gradually increased to an average of twenty-eight bushels per acre through proper fertilization and a better cropping system. The average yield in the United States is 14.8 bushels per acre. A score of farmers in the five-acre corn contests secured over 100 bushels per acre. Yields that are more than double average yields are being secured every year by many farmers in Indiana who handle their crops properly and fertilize them so that they can make the best growth and greatest net profits. Figured only from the dollars and cents standpoint, fertilizers justify their use times over. From the broader standpoint of maintaining and increasing soil fertility and making maximum crops possible, their use is necessary as well as profitable.

## Study the Fertilizer Problem.

Study your soil problems. Investigate the reasons why some farmers are getting better yields than others in the same community. See if you cannot improve your next summer wheat crop by top-dressing in early spring with fertilizers. Secure as much literature as you can upon soil fertility and fertilizers, and be prepared for the opening of the spring season and to make next year your best year. Find out the results of the use of fertilizers in your neighborhood. Plan to improve your present methods, whether that means that you build up poor soils or make fertile soils more fertile. Proper fertilization of your soils will do much toward making your farming operations more profitable and your farm more productive. And with better yields and greater profits from every farm must come better roads and schools, better farm homes and a happier and more prosperous farm life. Fertilizers mark the coming of better farming methods that will make Michigan's wheat crop of 1918 all that is planned, that will make other crop yields increase steadily and profitably.

Decide what you are going to do in the using of fertilizers on your wheat and winter rye this fall. Remember that profits from fertilizers depend upon (1) costs of fertilizer; (2) resulting increases in yields; (3) selling prices of farm crops. Don't these factors—especially the third—indicate that this season is the time for larger yields and immediate crop returns?

## MAKE CORN CRIBS AND GRANARIES RAT PROOF.

One of the food conservation suggestions made by the University of Missouri College of Agriculture, is rat-proofing corn cribs and granaries. A few years ago it was estimated that every rat on the farm cost the farmer \$1.82 a year. With the present high prices of feed, seed and grain the cost will amount to much more than that. In most of the grain growing states a fair estimate of the rat population of a farm would be about twenty-five to fifty.

Some idea of the loss can usually be gained by examining the crib in spring when the corn supply becomes low. On some farms several bushels of corn will have been shattered by rats and mice and the germs of the grain removed. This represents merely the grain which was partly eaten. It does not represent that which was entirely consumed by the rodents.

Concrete may be used to keep them out of the basement. Concrete floors may be built for new corn cribs and granaries and small mesh wire netting can be placed in the walls. Old cribs and granaries, chicken coops and poultry houses should also be rat-proof.



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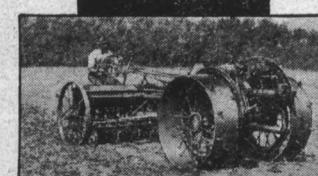
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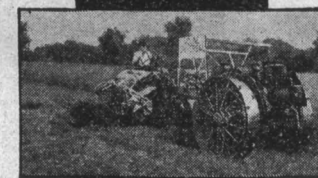
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There will be daily exhibition battles between two full companies of infantry. Trench digging, bomb throwing, erecting barbed wire entanglements, advances and repulses will feature every day's engagement.

### Child Welfare Exhibit

A \$75,000 exhibit of Child Welfare and Social Service will show for the first time in this state, the progress made along these lines in the United States and Europe. Michigan children under three years of age will compete for prizes in the Better Babies' Contest.

### Harness Horse Races

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## Fruit Harvesting Equipment

IN gathering the fruit crop the commercial orchardist saves money by using satisfactory equipment. One of the most important factors in the efficient gathering of fruit will be strong ladders of the right height. The fruit ladders with three legs are stronger and more satisfactory than the ladder with four legs. When four legs are used one of the front legs is quite apt to sink into the ground deeper than the other and this makes the ladder shaky because of the unbalanced strain which is placed on one side. The picking of apples requires high ladders which are strong and light. The ladders which have rails meeting at the top and extending upward about two feet above the last rung are easy to transfer from limb to limb and it is possible to place them securely against the crotch in a limb with much less danger of slipping than is the case when two rails are used for the support.

Strong step ladders are necessary in picking cherries, peaches, plums and pears without climbing into the trees. The picker who finds it necessary to climb among the limbs cannot work rapidly and this wastes the profits of

careful fruit growers who try to produce high quality fruit for the best paying markets.

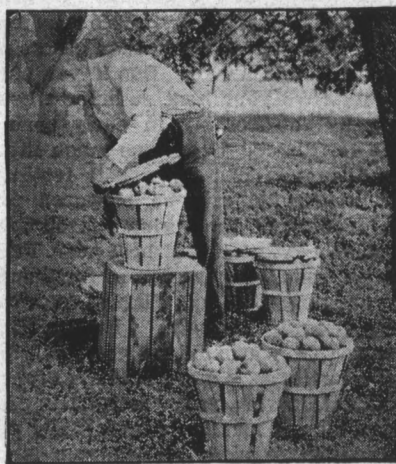
### Orchard Wagon Pays.

The commercial orchardist finds that a low orchard wagon is of value in hauling the fruit from the orchard to the packing house. Such a wagon should be of such a height that the picker can carefully empty his basket on the wagon without undue exertion and without bruising the fruit. It should be equipped with springs which will take up most of the shock in driving to the packing house and be strong enough to avoid breakdowns when hurried trips must be made with heavy loads during the rush season.

Some growers grade their fruit by hand and find it satisfactory. Others use mechanical graders entirely and find that it saves time and results in a more uniform pack than is possible with hand-grading. One type of peach grader commonly used works like a sewing machine. When the peaches are dumped on the platform the operator throws out any specimens with spoiled spots and the remainder are worked down a track containing three or four troughs which gradually increase in size. The culls fall through into the first basket, the seconds next and the firsts in the last basket. When some of the fruit is too large for the first grade a basket is placed at the end of the grader and these specimens fall there and they are classed as fancy stock.

Many fruit growers try to manage their business with as little harvesting equipment as possible but they are often forced to use unskilled labor in picking the crop and the combination is not a money maker. By using good equipment the pickers are insured a fair chance to perform careful work and this is quite important at a time when fruit should bring good prices but labor charges are high.

Ingham Co. R. G. KIRBY.



Careful Packing Pays.

the grower. Climbing into the tree may result in broken branches as well as injury to the harvester due to accidental falls. If it is necessary to climb among the branches the picker should wear a pair of old rubbers to reduce the danger of scratching the limbs. It pays to carefully examine the ladders before they are taken to the orchard for the season's work. A few simple repairs may increase the life of the equipment and save accidents during the height of the harvest.

Possibly the care in which the picker places the fruit in the basket is more important than the style of the container but it is important to have a suit. One seemed as effective as the other in the control of insect pests, good supply of buckets or baskets suitable for gathering the fruit. Peach pickers can work very efficiently with half-bushel baskets strapped over the shoulders. They usually work entirely from step ladders and there is little jostling of the fruit.

When picking apples it is best to use a basket or pail which can be hooked to the ladder or a limb of the tree. This assists in preventing bruising of the fruit and the picker has the free use of both hands in gathering the fruit. Baskets with a canvas bottom are sometimes used in picking apples. The bottom can be released when the receptacle is full and the fruit is allowed to slip slowly and carefully into the baskets on the orchard wagon or on the packing table. This is said to be much better than pouring out the fruit but in either case the picker must use great care in emptying out the fruit or little is gained in using any special type of picking basket.

At various times mechanical pickers have appeared on the market but they are apt to handle the fruit roughly and pull the stems from apples. They do not seem to be used by any

### SPRAY FORMULAS IN SMALL QUANTITIES.

Below are a few formulas that may prove to be very beneficial to the small grower. They are the standard sprays but reduced so that one wishing a small quantity will get the correct proportions.

#### Poison Bran Mash.

Bran, 1 qt; Paris green, or white arsenic, one teaspoonful; molasses, two tablespoonfuls, orange, one-quarter. Water to make good mash.

Take one quart of bran and mix with it a teaspoonful of Paris green or white arsenic. Mix thoroughly dry. Take a half of a cup of water and add to it two tablespoonfuls of molasses. A quarter of an orange or lemon should be ground up fine and added to the bran. Pour the sweetened water on the bran mixture, working it into a good stiff mash. More water can be added if needed. This is good to destroy cut-worms, grasshoppers and similar chewing insects.

#### Nicotine Spray.

Nicotine sulphate (40 per cent), one teaspoonful; water, 3 qts.

Nicotine sulphate can be purchased in various sized cans at any store that carries spray material. Pour a teaspoonful of nicotine into three quarts of water and shake well so as to get a good mixture. It is now ready to spray. If you purchase nicotine that is only eight per cent it will be cheaper, but it is only one-fifth as strong as the above and will take five times as much to get the same strength. It is very effective against plant lice and is easy to prepare.

#### Kerosene Emulsion.

Kerosene (coal-oil), 1 pt; laundry soap, 1 cubic inch; soft water, ½ pt; dilute to required strength.

From a cake of laundry soap cut out a cubic inch and shave it into a half-pint of warm soft water until it is all dissolved. Boiling will hasten the procedure. Then pour this soapy water into the pint of kerosene. It is now ready to be emulsified. This can be accomplished either by the use of an egg-beater, churning it violently for four or five minutes. Use one part of emulsion to three of water for dormant spray, and one to ten for summer use.

DON B. WHELAN.



## Aphis Control and Orchard Fertility

At the recent summer meeting of the New York State Fruit Growers' Association, held August 7-11, the following things were noted which will be of interest to Michigan fruit growers:

At the Beckwith orchard near New Haven we saw many acres of renovated apple orchards. The old trees had been dehorned and so well pruned that they presented the appearance of new trees, and were very thrifty under good cultivation and feeding. Although the set of apples in New York is very light the Greening trees in this orchard were bearing a fair crop with every prospect of their being extra large and perfect. In this orchard the station has been conducting experiments to control the Rosy Aphis. These experiments show that a delayed dormant application with lime-sulphur and nicotine solution (lime-sulphur diluted one to eight, and nicotine solution 40 per cent (three-fourths of a pint to 100 gallons), as the most practical means of preventing injuries by the rosy aphis. The experiment in the Beckwith orchard is one that is being

No difference could be seen in the results. One seemed as effective as the other, and the fruit was all in fine condition. It seems to be a matter of labor and cost as to the relative value of the two methods.

Some valuable lessons in up-to-date orchard management were learned on Friday when visiting several farms between Kendall and Albion. It is enough to say that cultural methods with all these progressive orchardists are very much alike—clean cultivation, generally with tractors, during early summer, then seeding to cover crops and following out the full spraying schedule, and pruning and thinning to secure color and size in the fruit. All the surroundings show that the best class of orchardists are prosperous, and one man told me he would not even consider dairy farming if he owned an orchard.

W. J. JENKINS.

### ON THE CULTURE OF BELLA-DONNA.

For two years I had good results raising belladonna and am sure the



Ladders for Picking Should be Light and Strong.

conducted to demonstrate to owners of apple orchards the value of the delayed dormant treatment for the prevention of important damage.

#### Aphis Controlled.

In this experiment the trees were sprayed in May when the leaves of the more advanced buds were projecting about half an inch with the solution above mentioned. For checks on this treatment, six large bearing Greenings and two small trees were left unsprayed. In examining the individual trees of these two plats. It was evident that the aphids had been almost entirely controlled by adding nicotine to lime-sulphur.

At the Cornwall orchard near Putneyville the Agricultural College, Cornell University, is conducting some fertilizer experiments on blocks of peaches; on some, acid phosphate alone, others acid phosphate and nitrogen, and others, acid phosphate, nitrogen and potash. All these were in addition to clover and other cover crops plowed under in the orchard. Acid phosphate alone did not much increase wood growth but the fruit ripened earlier. The addition of nitrogen increased growth and made a dark green healthy foliage. Little difference was noticed from the application of potash. Nitrogen caused the fruit to grow a little larger, but it ripened later. So far the conclusions are that the application of chemical fertilizers to orchards under a good system of cultivation and cover crops do not return any profit, except possibly to promote the growth of individual weak trees. This, it may be well to state, is in accordance with experiments made with apples by the College and Experiment Station in other orchards in the state.

In the Cornwall orchards blocks of trees sprayed with lime-sulphur solution, and those dusted with dry lime and sulphur were carefully examined.

plant raised here is as good as that raised anywhere, it all depends upon the amount of alkaloid it contains. That grown in Michigan, so far as I have been able to learn, has been above the U. S. P. requirements.

This year my efforts have met with complete failure, as I planted seed in the field and they did not germinate, whereas, when planted in protected places or in a greenhouse germinated all right. I have sold all the seed I could spare this year but will have plenty another year.

Somehow the drug manufacturing companies seem to want the growing of this plant curtailed, or it seems that way to me.

W. H. RAND.

### TROUBLE WITH PEONIES.

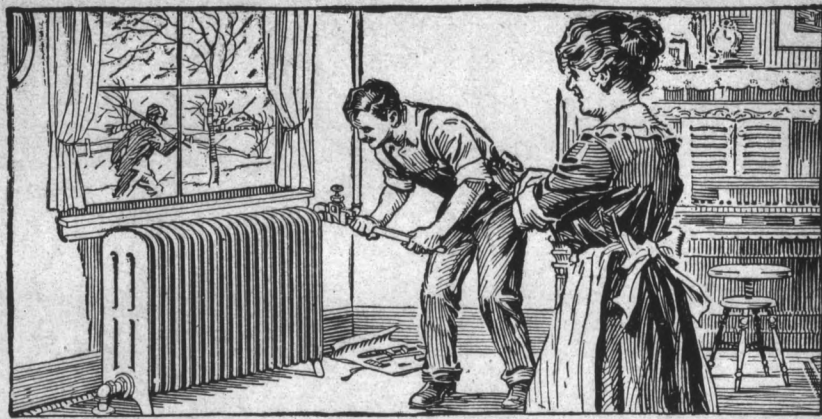
Our family being one of your many subscribers, I saw your reply to Mrs. J. G., and think you are mistaken as to the trouble. Buds do not turn in that way when bothered with insects.

Peonies should always be dug in the fall. All people offering same for sale dig them any time from the very last of July to the first of October, whether they are sold in the fall or the spring. If held for spring delivery they are left dormant in their cellars or caves until spring.

The flowers of one summer are formed the season before, just like many of our fruit trees, and if these are disturbed until after their natural blooming time they blast; the green covering will develop no perfect flowers for several years. I would advise Mrs. J. G. to dig her roots, taking them entirely out of the ground, shaking off the loose dirt, let them remain out for a day or two, then reset. Do this the last of September and she may expect some flowers the following spring, and the plant to thrive from then on.

MRS. L. A. STEINER.

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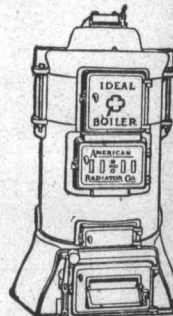
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### DAIRY PROBLEMS.

#### Sunflowers for Silage.

I planted sunflowers with corn for silage but cold weather has hindered the growth of the corn so the sunflowers promise to outyield the corn. Is there any danger of getting too many sunflowers in the silage? And does stock eat them readily?

Ogemaw Co.

SUBSCRIBER.

In the absence of experimental data on the use of sunflowers for silage, it is difficult to advise intelligently. If the sunflowers make a good crop, there will be a very considerable yield of seed.

In five tests with sunflowers in North Carolina a yield of sixty-five bushels of seed per acre was secured, carrying about twenty-one per cent of oil. In plot tests covering fifteen years at the Ontario Agricultural College an average yield of 728 bushels of sunflower seed was secured. Sunflower seeds contain a valuable vegetable oil, and in Russia the crop is grown on a commercial scale for this purpose. The oil cake left as a by-product after the oil has been removed from the seed has proven a valuable commercial feed for all kinds of stock.

As to the feeding value of this grain as compared with corn, it was determined in the trials above noted that corn produced about as much digestible nutrients per acre in grain alone, without considering the value of the fodder. Without any doubt, the forage value of corn put into the silo would be very much greater than that of the sunflowers, although the sunflower stalks and leaves would have a considerable feeding value when put into the silo, since many kinds of weeds and waste vegetation have been proven to make a fair grade of silage. In Austria, for instance, the making of satisfactory silage from thistles has been reported. As to the palatability of silage in which the sunflowers predominate, one can only speculate, but there is little doubt that almost any succulent feed of this kind will be welcomed by the cattle during the winter season.

If any reader has had experience along this line, the result of that experience should be passed along to others who will be interested.

#### Proper Management of Herd Sire.

Will you please tell me how to manage a herd sire?

Van Buren Co.

G. P. W.

We manage our herd sire different from a great many breeders—we leave him alone as much as possible. In order to do this you must have certain conditions that possibly wouldn't apply to every breeder. In the summer time our herd sire is in the pasture, always with other bulls, some of them are nothing but bull calves, but it is company for the sire and he runs quietly. It is rare, indeed, that we ever have any trouble. He is turned out with the rest of the bulls just as soon as the pasture is good in the spring. Of course, we have a good woven wire fence around the pasture with a barb wire on top and we take a little pains to wire the fence to the barb wire so that he cannot get his head between; otherwise they will reach over and bend your woven wire fence out of shape.

We do but very little breeding during the summer time as most of our cows are bred to freshen in the fall. When necessary, of course, the breeding is done in the pasture. In the fall when pasturing is over with he is kept in a yard close to the barn in which is located a small building used for no other purpose except shelter for the bulls. We never have less than two herd sires and they run together. After they get about two years old they are always dehorned, then there is no injury ever caused from fighting. This building is about sixteen feet square, and has a manger running across one side with two or three stanchions, extra strong, so that if necessary we can lock them in these stanchions, but this

is rarely ever done. They pass in and out of the building at their pleasure into this yard. In handling the sires in this way we have very little difficulty with them, they run contented, don't get vicious, and are kept in the highest state of efficiency.

I have an idea that a great many herd sires become vicious because they are chained up by the nose in dark stalls and are rarely if ever exercised.

COLON C. LILLIE.

#### PUT CORN STOVER IN SILO.

The best and most economical method of handling corn stover is to put it in the silo. If generally adopted, this practice would end a waste through wrong methods that now amounts to thirty-five per cent of all the stover fed, says the United States Department of Agriculture. It would place at the disposal of the farmer an enormous mass of roughage to cheapen the cost of producing meat and to maintain soil fertility in the most economical of all ways—by the production of manure.

That the value of stover as fed is recognized to some extent is indicated by the fact that 81.5 per cent of what is produced is fed in some way. Frequently, however, it is not the right way. For instance, such practices as "pulling the fodder," or "topping" the corn are most wasteful but approximately thirty per cent of matured corn is handled in one of these two ways. The stalks that are left standing in the fields are pastured, plowed under, or burned.

To burn stover is a crime against intelligent agriculture for which it is difficult to find any explanation except obstinate ignorance on the part of the perpetrator. It offers a quick and easy method of cleaning the ground for plowing but that is a small offset for the waste of good material. Plowing under and pasturing are better but they also involve some waste.

On the other hand ensiling the stover means that its feeding value is utilized to the full. A quantity of roughage is provided which lessens the need for expensive concentrates and makes the production of meat more profitable by lowering the cost of manufacture. Obviously, this is a stimulus to the keeping of live stock, which from every point of view is most desirable.

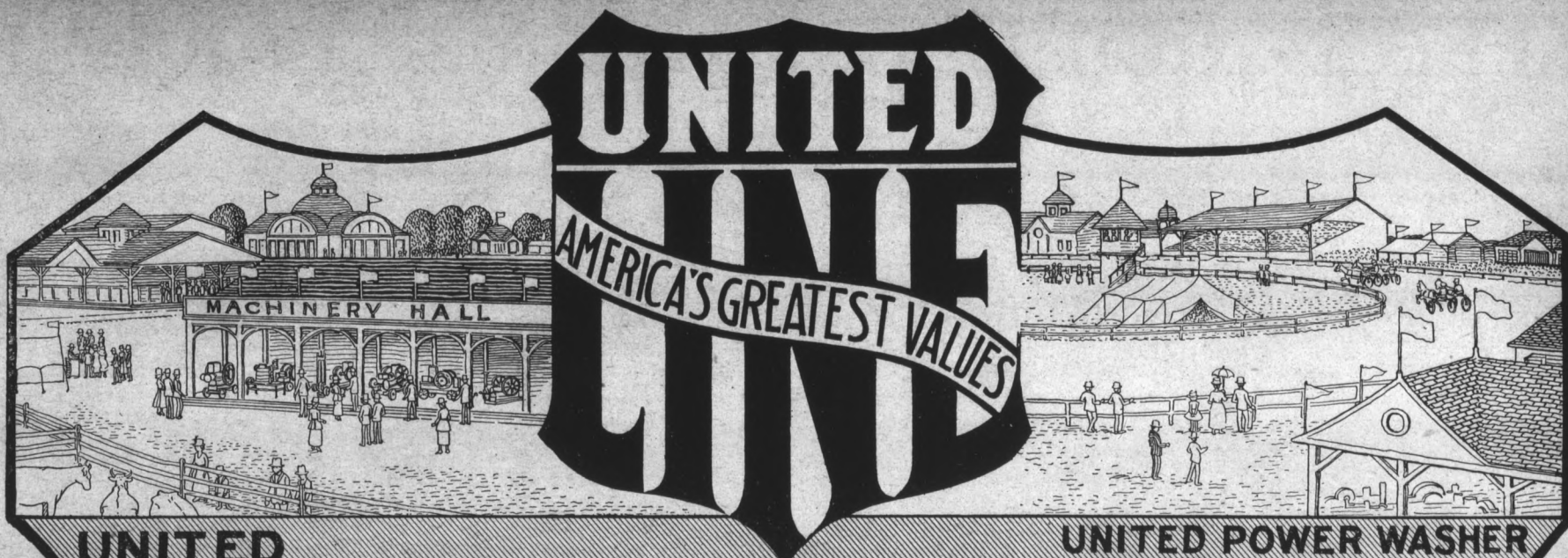
In preparing stover for feeding, chopping or shredding increases its palatability and enables a greater quantity to be stored in a given space. Both of these methods, however, involve the use of additional labor and can only be recommended when labor and power are cheaper and abundant. Cutting and shocking, on the other hand, involve some waste but, in general, this is offset by the saving in labor.

No matter how it is prepared corn stover with a little grain or other concentrate is an excellent roughage for wintering cattle, especially mature breeding cows. In some sections it is the sole roughage used for this purpose. In others, oat straw is added.

#### USE TESTED SIRES.

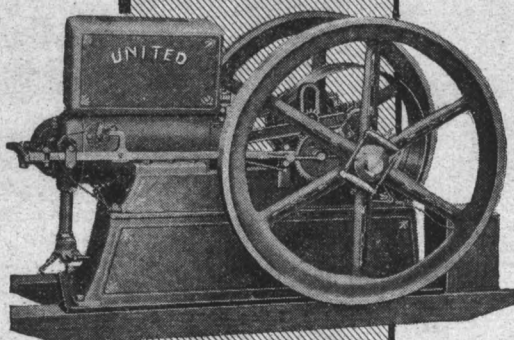
The value of the tested sire has been illustrated by the University of Missouri College of Agriculture. Sultana's Virginia Lad was selected as the herd sire at the age of five years on account of the excellent milking qualities of his daughters, although none of them had ever been tested for Register of Merit at the time he was purchased. The first five daughters of this bull to freshen in the University of Missouri herd have an average production of 9,000.03 pounds of milk and 511.03 pounds of fat as two-year-olds. This is an average per cent increase of 76.6 in milk and 86.3 in fat over the average production of the first lactation of their dams.



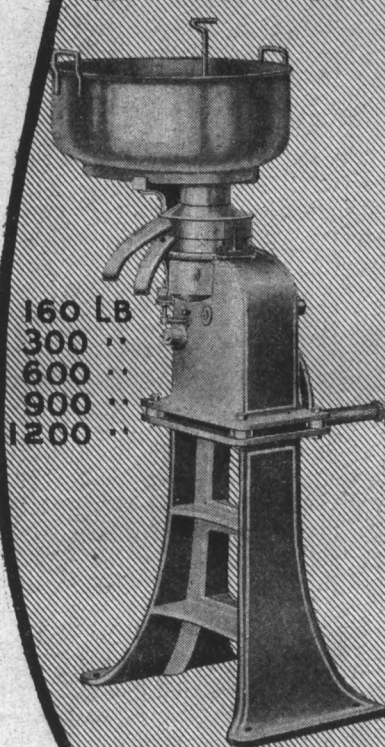


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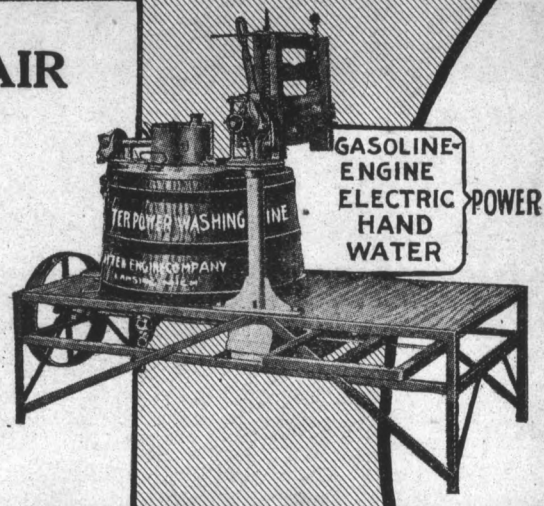
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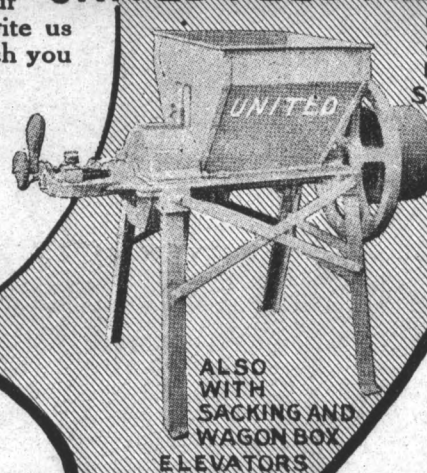
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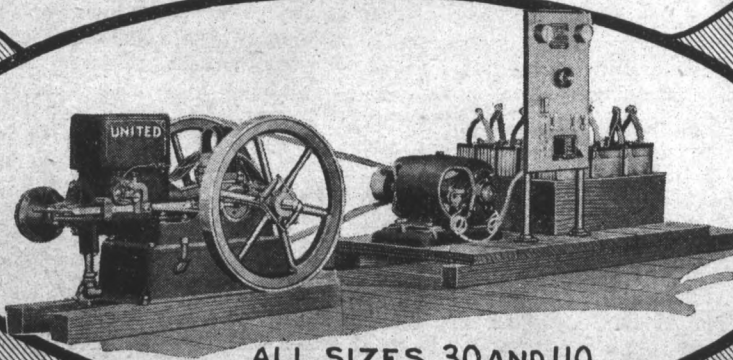


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# The Nation's Food--Animal Problem

THE Department of Agriculture and the Food Administration desire to bring to the attention of stock men and farmers the following general position as to the American and world situation in food animals and the provisions which are broadly necessary from a national point of view.

One of the incidents of the European war has been the slaughter of large numbers of animals, and it is estimated that already the herds of Europe have been diminished by 28,000,000 cattle, 54,000,000 sheep and 32,000,000 hogs. An accelerated increase in this diminution of meat animals must take place in Europe from month to month as long as the war lasts.

We have two problems in meat supplies: The first is the task of supplying our own soldiers and citizens and helping feed the soldiers and citizens of our allies during the war; and to do this we must furnish larger supplies and must find these supplies for the present largely by reduction in our own consumption and waste.

The second problem is the one which we desire to bring particularly to the attention of the American producer, and that is: After the war, Europe, with diminished animals, and therefore diminished annual production of animal food, will require larger imports of meats during the years of recuperation, and will probably require the actual import of breeding animals. Therefore, in a broad way, the outlook to the American producer from now on and after the war will be, (a) a large demand for animal products; (b) a continuing necessity for meat and dairy animals to convert forage and grains not needed for human consumption into meats and dairy products.

The herds and flocks of the country can only be increased over a period of years, and the foundation for such an increase should be laid at once. Such increase is a national interest, and it must be made to the interest of the American producer.

Owing to the large measure of failure in roughage available in western

An Official Statement Issued Over the Signatures of D. F. Houston, Secretary of Agriculture and Herbert Hoover, Food Administrator.

ranges this year there must be either a reduction in western animals or their redistribution into the central and southern states where there is a larger amount of roughage and concentrates available than ever before. Therefore, if the roughage in the central and southern states is saved in an economical manner and if stocker steers, young cows, heifers and ewe lambs of good quality that will be marketed during the next ninety days from the western sections of the country are redistributed, these animals will have been saved and the foundation will have been laid for a material increase of our herds.

Some sections of our country are stocked to capacity with mother ewes, from which lambs are marketed at from seventy to eighty pounds weight. This is the most economic method of producing mutton, just as "baby beef" is the most economic method of producing beef, and the quality of both these meats is of the best.

What we need is more cows and more ewes producing the 700-pound calf and the seventy-pound lamb. We wish to restore the confidence of the farmer in his industry by convincing him that he will get a fair share of a fair price paid by the consumer and extending to him credit on a reasonable basis so he may be able to equip his farm for handling sheep, hogs and cattle successfully. Only by adopting the foregoing methods and principles can production be stimulated and the consumer protected.

Many of these same cattle will be required to re-stock the ranges from which they are now being moved, when normal range conditions return the coming year. The nearer to these ranges the cattle can be wintered, the more freights will be saved, both coming out and going back, and the less tax upon the railroads.

It is essential for the future welfare of our nation that the supply of all meat animals be increased. This, not only from the standpoint of directly increasing the food supply of the coun-

try, but more live stock on the farm means more fertility in the farm; more fertility means larger grain crops produced at a less cost per bushel; more cheaply produced grain should mean cheaper bread to the consumer as well as more net profit to the farmer. Especially should the energies of the farmer be directed to increasing the sheep stock of the country. Clothing comes next to food as a necessity. Not only does the sheep meet the demand from a food and fertility standpoint, but for its wool for clothing, there is no substitute. Every interest that can make itself felt should advocate and encourage the establishing of flocks of sheep in proportion to size of farms in every section of the country. Every farmer should carry to its yearling form every heifer calf of both dairy and beef breeds and every ewe lamb that promises to have an economic future.

Every effort should be made to bring to maturity every heifer calf or ewe lamb whose breeding will give some assurance that it will convert its feed into either profitable meat or profitable dairy products.

State authorities should take immediate action to control the dogs whose depredations have made sheep raising on the farm so difficult a task.

It is equally desirable to increase hog production in this country by every means possible. The increase in demand for pork products is no less than for cattle and sheep products. In this matter the expansion of existing herds is essential, and a redistribution of hogs from centers of less feed supplies to those of greater resources is necessary. Furthermore, the raising of pigs by suburban populations and the utilization of home garbage and perishables not otherwise useful is of double advantage to the nation.

The law that we are now operating under as to food control is conceived and administered in a desire to maintain remunerative and stimulative returns to the producer and to enable these products to reach the consumer

with only a reasonable profit allowed for services rendered. Therefore, it is the object of the administration to eliminate unnecessary cost between producer and consumer.

An intelligent use of the Department of Agriculture's daily reports of the meat situation and the Department's report of the loading of stock at all shipping points should enable the producer to distribute his shipments to better advantage, thereby assisting in lessening the wide fluctuations in market prices for live stock.

In order that a definite and nationwide campaign to secure these results may be at once undertaken, we have asked the following gentlemen to serve upon a general committee to be known as the United States Live Stock Industry Committee: (The list includes ninety-three men who are influential in live stock circles in all sections of the country. Michigan members of the committee are, C. K. Warren, of Three Oaks; A. G. Wade, White Pigeon, and C. A. Tyler, Detroit).

We have appointed Mr. George M. Rommel and Mr. P. H. Rawl, of the Department of Agriculture and Messrs. Lasater and Pinchot of the Food Administration, to serve on an executive committee to be added to form the general committee. The state agencies, the Department of Agriculture, and the Food Administration, and, we trust, the state agricultural and food institutions, together with state councils of defense, will also co-operate. The county agents of the Department of Agriculture will take orders for cattle, ewes, or ewe lambs, among the small farmers of communities in less than carload lots, and we have arranged with the live stock exchanges to contribute to this mobilization of the nation by buying this stock and seeing to it that it is properly handled while in the yards, free of any charge to the buyer.

This campaign should not be considered to have terminated successfully until the great majority of our farms have their flocks of sheep and a sufficient stock of cattle to consume all roughage now largely wasted.

## Animal Restraint---First Aid to Live Stock

By DR. W. C. FAIR

HOW helpless is the veterinarian when called to render first aid to live stock, unless he has with him a few useful tools or instruments, also some of the common drugs used in every-day practice. If this be true, then the farmer and live stock owner must be at a far greater loss to render first aid to sick and injured animals, unless he is equipped with some tools to work with, and has a few useful stable remedies to give or apply.

### Instruments of Restraint.

Now let us consider for a moment what is required. First, every farmer should know something about the restraint of domestic animals, in order to protect himself against injury when doing minor surgical operations and giving or applying medicine. Besides, every farmer should have at hand a well made, ordinary rope stick twitch. It is made by simply boring a hole one inch from the end of a piece of hard wood, twenty inches or more in length, another smaller hole near the other end for a string. Tie a small rope loop in one end, slip loop over upper lip, tighten fairly snug to attract the animal's attention while you work on him. If you have no assistant, tie end of twitch stick to throat latch and leave it tied until you are through with the operation. You can make a dozen different kinds of twitches, all of which act on the same principle and may be applied to lower lip or ear, but preferably to upper lip. Frequently, I find

it convenient to use a bridle bit, a large iron ring, a triangle, a clevis or a horseshoe, a short piece of wood, iron, or iron pipe to twist and shorten the loop; but, with this kind you need a helper.

### The "War Bridle."

Another simple means of restraint is a "war bridle," which is conveniently made by using a piece of small rope, making a loop that will not slip on neck, passing one end through mouth, the other through the loop; or, use an ordinary neck strap with D ring, attaching a piece of rope to ring, passing it through mouth and back through the ring, then have the assistant tighten rope--this will attract the attention of the animal while you are working on him. There are many different kinds of war bridles used by horse-breakers, but I have mentioned the most simple one. Another very useful means of restraint of the horse is a loop and rope gag which is applied by making a small loop on end of rope, pass rope through mouth, over poll, then end of rope through loop, tighten and tie with one-half hitch; or you may use a rounded piece of leather for mouth with billet on one end and buckle on the other which can be tightened and locked without the aid of an assistant.

Another excellent means of restraint is a piece of strong strap, one and a

half inches wide and eight inches long with a ring on each end and straps attached to each end with buckle and billet. These straps should be long enough to buckle around the hind leg of a horse or cow above the hock joint, or above the knees of a horse. This simple appliance will often prevent the horse from striking you while working on head or fore part of body; also, prevent either horse or cow from kicking you with sufficient force to do any harm. It is often very convenient to make a loop with a hame strap, slipping it over hoof, then hold up foot and buckle strap to surcingle or snugly around fore arm; this holds the foot up and very often prevents horse from striking or kicking. When fore foot is held up by hand, be sure and compel the horse to rest his full weight on the three legs. Don't hold up or support the weight of body, or the horse will then be able to kick you with either hind foot.

It is also very convenient to keep on hand a set of breeding hobbles, which can be made at small cost. Have your harness maker make two straps, one and a quarter inches wide with D ring fastened three inches from buckle, the billet should be long enough to go around the pastern, shin or above hock of horse's leg. Two pieces of rope five feet long can then be spliced to each ring, one into rings

of strap, the other a ring with rope fastened to it. Then pass the rope around neck and fasten it to the ring, which is four or five feet from the hobbles, and tie it so that it can be quickly released. This simple appliance can be quickly adjusted and will often prevent a person from being kicked while stitching wounds or applying medicine to the hind quarters of a horse, or cleaning the sheath of a gelding.

### Methods of Throwing.

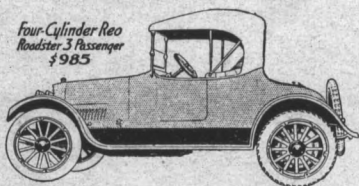
Every farmer should know of a simple and safe method of throwing a horse down. Gleason's method is very simple and all that is required is a halter and rein; also a knee strap to tie up one fore foot, and a piece of rope twelve or fifteen feet long. The left fore foot is strapped up, the rope is attached to right fore pastern, passed up over right shoulder and back. Then you stand at left side, push the horse from you, then he drops on both knees. Let him remain in this position for a few moments--gently pull head to right side towards shoulder, then after a little time horse will lie down on his left side, then keep head suspended, both knees folded. Rarey's one man method of casting a horse is similar to that of Gleason's, but knee strap is applied to right fore leg, and the foot raised against the elbow. A rope is then placed around near (left) fore pastern and another around near (left) hind pastern. The leg ropes are

(Continued on page 185).

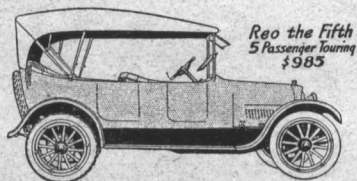


# REO

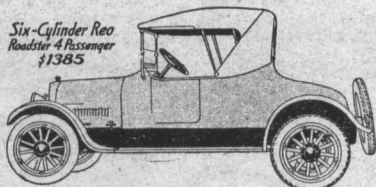
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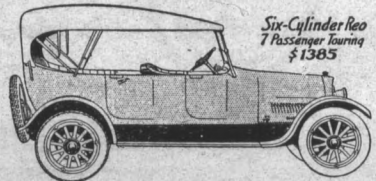
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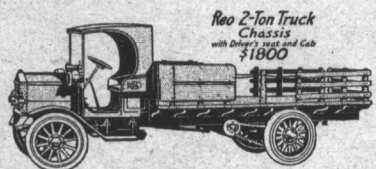
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THE FOUR IS THE ULTIMATE type in that price class. Economy of upkeep, as demonstrated by this Reo model, has done much to prove the superiority and ruggedness and economy of the Four in that class of car where the buyer must count the cost and yet demands the service and the roominess.

THE FOUR ROADSTER is the handsomest model of its type you'll see on the road—at any price. And, for the present, you can get it for \$985 and freight from the factory.

OF THE SIX ROADSTER the same is true, plus the extra luxury it affords the owner at the extra cost—\$1385 f. o. b. Lansing.

THESE TWO ROADSTERS are of similar design and identical construction, and are conceded to be the handsomest cars of the type—price aside.

FOR THE FAMILY that needs a car of greater capacity than five and yet of moderate upkeep, the Reo Six Touring Car—also \$1385 for the present—knows no equal.

NO MATTER WHAT YOU PAY you cannot obtain a 7-passenger car of better design; one that represents sounder engineering; more experience; better materials and workmanship than enter into the making of this Reo Six.

THAT'S A BROAD CLAIM, but we make it unhesitatingly—and you know that the word of Reo passes at par everywhere.

OF THE REO MOTOR TRUCKS the same is true. The 3/4-Ton "Hurry Up" Wagon at \$1,125 (chassis \$1050); and the famous 2-Ton Reo "Heavy Duty" Truck at \$1800—each is the leader in its own class—demand greatly in excess of factory capacity.

BUT THAT IS TRUE of all Reo models, without exception.

THAT'S WHY WE SAY "Reo Quality is Uniform in all Reo Models," the uniform over demand for all Reo models justifies the statement.

ORDER NOW if you'd have your Reo soon. Present prices obtain only from day to day, and are subject to increase without notice.

### Reo Motor Car Company

Lansing, Michigan





Homewood Farm Barns, Property of Wm. Butterworth, Moline, Ill.

## A SOURCE OF REAL SAVING

A great many motorists look upon the tires they use simply as a source of expense.

They consider the purchase of such equipment as just one unprofitable investment after another.

But the Goodyear user looks upon his tires somewhat differently—he sees in them a source of real saving.

For he realizes that tires are necessary to the usefulness of his car, and that the extra service Goodyears give is just so much clear gain.

This extra service that Goodyears give is not fanciful nor speculative, it is very real.

It includes more miles than could safely be expected from other tires—more comfort, and greater freedom from trouble.

It is due to the conditions under which Goodyear Tires are built, and to the materials which go into them.

It is the end to which every energy and impulse of these great factories is spent.

Goodyear users may well look upon their tires as a source of real saving—Goodyear Tires are built to be just that.

They are made to endure, to deliver the highest type of satisfaction under all conditions of service.

They are large of girth and thick of tread, that they may stand the scuff and pummeling of the road without faltering.

They are stout of structure and tough of substance, that they may wear slowly and with stubborn reluctance.

More Goodyear Tires are sold in these United States today than any other brand.

This would not be true if Goodyears offered anything less than conspicuously better value.

And the margin of Goodyear leadership is constantly growing greater.

Which is clear evidence that the better value in Goodyear Tires is consistent and invariable.

Sometime *you* will come to Goodyear Tires—sometime *you* will reap the benefit of the extra service they give.

When *you* do come to them, buy them of the Goodyear Service Station Dealer near *you*.

He is equipped and ready to help *you* get from Goodyear Tires the final mile of service we have built into them.

That is his mission, one he is pledged to fulfill with all the abilities at his command.

Ask this Dealer to tell *you* about Goodyear Tubes—*better* tubes—and what they mean in lowering tire costs.

And ask him to show *you* the Goodyear Tire-Saver Kit, which, as a primary factor in tire conservation, certainly should be in *your* car.



The Goodyear Tire & Rubber Company, Akron, Ohio

GOODYEAR  
AKRON



# Magazine Section

LITERATURE  
POETRY  
HISTORY and  
INFORMATION

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

The FARM BOY  
and GIRL  
SCIENTIFIC and  
MECHANICAL

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

At six o'clock we have first call. We arise from our bunks, cots or beds, whichever it may be, dress and fall in ranks in front of the barracks for reveille at 6:15.

If I fail to be out at reveille I get company punishment, entitled "Kitchen Police," which is to work in the kitchen from 6:15 in the morning to 7:45 at night. The duties are to serve the meals, wash dishes, peel spuds, or such work as needs to be done.

A soldier can commit many small offenses which will make him a member of the "Kitchen Police." These include failing to have a button fastened, throwing a match or a cigar or cigarette on the floor or sidewalk, raising your hand or turning your head while

## A Rookie's Camp Experience (As Told by Himself)

at attention, failing to have your clothes clean, unshined shoes, face unshaved, hair uncut; and by all means we must have our rifles clean.

The lieutenant lines us up every Saturday morning. He starts in at the right of Company No. 1 of front rank. Each man has to bring his piece to inspection arms, that is, to port arms, then grasp the bolt handle, opening the breech. The officer takes the piece from you, first looking through the bore, then at the magazine chamber, examines every screw head and every

little detail. If he finds the rifle with grease, oil, dust or rust he will ask your name, and you are to answer him, telling him your name with a "sir" at the tail end of it. He will tell you to report to the company commander. You report and what you get is a plenty. He gives you a good lecture, ending up with the sweet words, "Three extra Kitchen Police." Your cue then is to smile and say "Yes, sir," and salute him and return to quarters.

After morning roll call we fall out and go to our squad rooms or sleeping

rooms and clean up. Every blanket has to be folded precisely the same way, floor swept, cuspidors cleaned, everything dusted off. If the corporal of the room says to scrub, why, scrub it is, and he says it about three times a week.

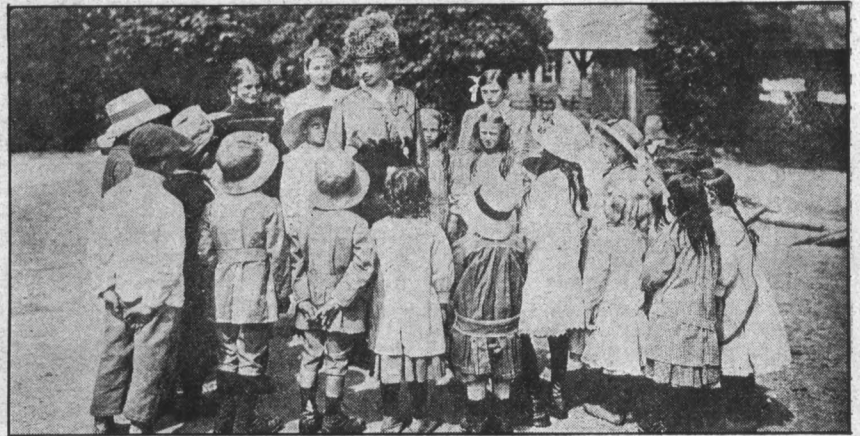
When we get "police up" or cleaned up, the mess sergeant rings the bell for breakfast, and we all make a grand rush for the mess hall, as we have everything good to eat, and it is sure clean. After mess we are called outside to "police up." We find every little piece of paper, cigarette butts, matches—well, everything that is loose around the barracks, and throw it into the trash can.

After spending the rest of the time

## WORLD EVENTS IN PICTURES



China's Modern Army May Become a Factor in the World War.



French Teacher Cares for Her Pupils During the German Occupation.



Secretary of War Distributes Commissions to 1,800 New Officers.



Gen. Scott, of U. S. Army, in Russian Trenches Inspires Slavs to Fight.



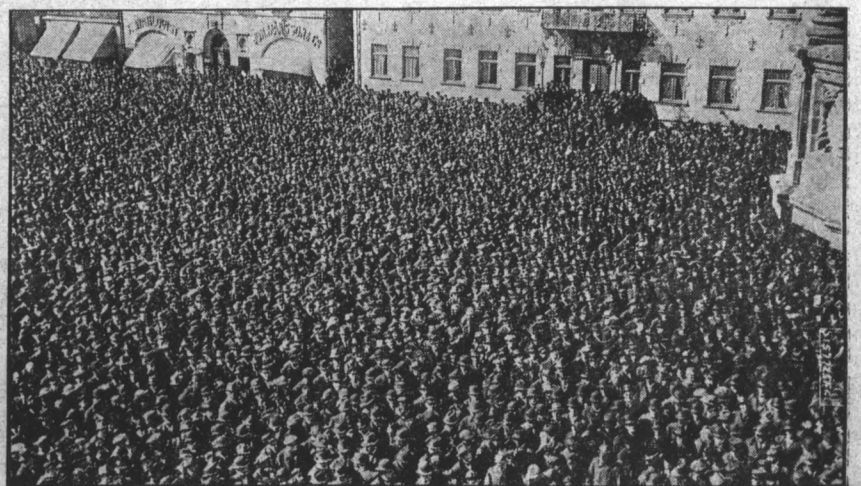
Prophetess Predicts Vienna will Fall on Day King Peter of Serbia Dies.



America's Champion Tennis Player Offers Services to Red Cross.



This is what One of the Big War Tanks Does when it Encounters a Tree.



50,000 People Assembled in Sweden to Protest Against Food Shortage.



until 8:15 in cleaning our "pieces," we have drill call. We fall in before the barracks for artillery drill first, then infantry drill and physical exercises. We execute our drill forty-five minutes and rest fifteen minutes, except in artillery drill in which it lasts one hour and a half.

At 11:30 our day's work is done unless we are on fatigue detail; if so, we are excused from all drills. Fatigue detail means to keep the grounds in good shape while others do the hauling of goods of all kinds, pushing a lawn mower and raking the lawn. They start at 7:45 in the morning, stop at 11:30, resume their work at one o'clock and get off at four. We also have guard detail. Every soldier has his turn at it—nobody is slighted.

Guard mount is also at 11:30. We all have to stand inspection before going on guard. The adjutant gives us the "once over," then we march down to the guard house where we are assigned to our posts. There are three sentinels to each post. No. 1 goes on at noon; No. 2 relieves No. 1 at two o'clock, and No. 3 relieves No. 2 at four o'clock, then for twenty-four hours, two hours on post and four off. When we get off guard we are granted a forty-eight-hour pass.

All soldiers have to stand retreat which we have at 5:30. We all line up for roll call, stand at attention while the flag is lowered and the band plays "Star-Spangled Banner." The flag is raised in the morning at reveille and lowered at 5:30 in the evening.

After retreat we are dismissed and have the privilege to go any place, so we are back in quarters by eleven at night. "Tattoo Call" is at nine o'clock. All lights are out; and if you are late

coming in, you carry your shoes instead of wearing them in quarters. You had better be in bed by "taps call" at eleven unless you are on pass, on guard, or have a special duty.

This is a brief outline of a soldier's daily tasks. Some days we drill and others we are on fatigue. It is just one thing after another.

There are many different characters around the barracks. Some are jovial good fellows who try to make the best out of it. We find Mr. Crab, who is always beefing and crabbing about something that amounts to nothing, while some jokist gets a laugh on him which makes him sore at himself. He then "digs up," sits around and pouts the rest of the evening.

Our evenings are spent in different ways. Some of the boys go to the movies and that sets 'em back ten cents for a ticket. Others delight in eating sweet stuff, such as ice cream, candies and fruit. They stick around the canteen and fill up on sweets until the canteen clerk yells "everybody out."

Some of the boys enjoy a little jaunt in the moonlight. Sometimes we get to see Marguerite Clark or Mary Pickford on the screen. When such occurs some of the fellows moan like they were having a molar removed from its base. A woman's voice is as soothing to us as paregoric is to an eleven-months-old kid. Their magnetic power is wonderful.

Most of us have sweethearts we correspond with, and it certainly brightens a boy up to get a letter from his "gal" back home. It sets him thinking of the times he has had, and he starts humming, "When Johnny Comes Marching Home."

## An Old-Time Coon Hunt

By GEORGE THOMAS

DID you ever go hunting with the Indian boys, grandpa?" asked Johnnie.

"Many a time," replied grandpa. "Clubfoot Billy came along one chilly November day when I was gathering corn and said: 'Heap fun soon. Injun boys hunt coon. Maybe you go 'long?'"

"How soon?" I asked.

"When moon come up. Take Yellow Leg's coon dog."

"Take gun along, to shoot coon?"

"No, heap dark. Gun spoil hide. Club better. Meet by Cold spring. Bring heap corn-bread, so no be hungry."

"All right," I replied. "I'll meet you on time."

So about eight o'clock I loaded my game bag with corn-bread, put in some salt and matches, then started off. Clubfoot was waiting with four other boys and as soon as I got there we went up the branch, Yellow Leg's coon dog leading the way. He soon took up a scent, gave a little yelp, and away he went. It proved to be a false alarm that took us to a hollow tree. We gathered round, while I lit a match to examine the tree. "No coon," said Billy. "Rabbit." So he took a little limb and split it down the end about an inch, then pushed the stick up in the hollow space and punched around awhile. Pretty soon he twisted the stick around. Then we heard a shrill squeak. The stick was tangled in the rabbit's fur. When Billy pulled the stick out of the hole, the rabbit came with it, squeaking for dear life. Billy gave it a tap on the back of its head and passed it to one of the other boys, who stowed it away under his blanket.

Further along the dog found another scent which ended at a big elm tree. We built a big fire that threw a light all around. It did not take long to locate the coon, in a fork of the tree. Lightfoot, a slim Indian lad, went up the tree to bring Mr. Coon down. That Indian kid knew how to climb, and it

was next to no time until he had the coon away out on the end of a limb, and shook it off. As quick as it struck the ground the dogs jumped onto it, but it fought them off, and I noticed that one of the dogs has an ear split to ribbons. Then one of the boys ran in and gave the animal a quick blow with his club, that ended its troubles. It was about the size of a large cat, of a grayish-brown color, with rings of dirty white around its bushy tail.

We left one boy at the fire and started on again. In a little while we had caught three more fat coons and one 'possum, then we went back to the fire.

The Indian boy had skinned and cleaned the coon and had some big rocks in the fire, getting hot. Then while one dug a hole in which to put the hot stones, another one mixed some clay with water and plastered it thickly over the carcass.

Some of the hot stones were put in the hole, the roast on top, then more hot stones, all of which were covered with a pile of hot coals. There was nothing to do but wait for the feast. Meanwhile the Indian boys began to wrestle. It didn't take long to find out that Lightfoot was the best wrestler in the lot, and just as I expected, Lightfoot said:

"White Charlie 'rassel?' Lightfoot show um how."

I knew a few tricks about wrestling, and in watching them I soon found out that they knew only one hold, the back hold, which consisted in rushing and trying to get their arms around the opponent's body, under the arms, then lift them off the feet and flop them over sideways.

So I nodded my head and slipped off my jacket. Lightfoot had laid his blanket aside long before and had nothing on but a breech-clout. He came rushing at me, shouting loudly, to confuse me. I kept my arms squeezed closely to my sides, and when he threw his arms around me, I had the

(Continued on page 179).

## Ditch the Farm



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Your country needs everything you can raise. Get your farm in shape—chance of a lifetime to make big money the next five years. Here is crop insurance at a low cost.

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See Page 185

Adv.

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## "Contraband" RANDALL PARRISH

### The Intervention of Vera.

McCANN stood in the open passageway leading to the steward's pantry, less than fifteen feet distant, a satirical smile on his lips, as he observed our familiar position. How long he had been there, and what portion of our conversation he had overheard I had no means of knowing, and for the instant I stood speechless, my brain a blank. Not so with Vera. With a laugh, ringing out as naturally as though in full appreciation of some sudden gleam of humor, she withdrew her hands from mine, turned and faced him, executing a mocking curtsy.

"Hardly fair, Mr. McCann," she said, "to steal upon us like that."

"Perhaps not," he answered grimly, "but just now I am privileged to do as I please on board this ship. Answer my question—what is it you think you can do?"

The red blood flushed into the girl's cheeks, but I remained silent, unable to think of any explanation which would meet the requirements.

"Perhaps an answer will be embarrassing."

"Stop the play acting," he burst forth, advancing about the stair rail. "What were you talking about? I want a direct answer."

The girl's long lashes shaded her eyes, but there was not the slightest falter to her voice.

"Captain Hollis," she said softly, almost regretfully, "had asked me if—I thought I could learn to—to like him, and I said I—I thought I could. That—that was all."

McCann stared at the innocent, downcast face as though he half believed the words her lips uttered were deliberate lies; then he laughed mirthlessly.

"I see," he said with sarcasm. "No misfortune along other lines is sufficient to interrupt Mr. Hollis' love-making. My congratulations, Captain, on even this measure of success."

The hot blood flushed my face, not so much at the words as the tone with which they were uttered. They conveyed to me a deliberate insult, tingling with a memory of the purpose he charged me with during our last interview. Then I could laugh at him, conscious that I held the hand of power, but now the situation was reversed, and, unfortunately, the girl, in her effort to hide our real plans, had chosen an explanation which left me helpless to defend myself. I could not deny her confession; I could say nothing which would relieve myself from the impression now firmly implanted in his mind that I was a mere adventurer, planning to get my fingers on the Carrington wealth. I read the truth instantly in McCann's face; he had not quite understood me before, but now he felt convinced that under all the veneer I was his kind; and he instantly felt that he knew how to deal with my case.

"Your congratulations are appreciated for what they are worth," I answered, unable to wholly restrain myself. "But we will let the discussion end here."

"Oh, will we? Well, perhaps you will recall that circumstances have changed since our last talk. I was the prisoner then, and when I ventured to tell you the truth to your face, when I charged you with the purpose of winning the affections of this young woman, hoping thus to reach her father's wealth, you locked me up. But you are no longer captain of this ship—I am; and I will say what I please on board. The first thing I propose doing to tell Miss Carrington who and what you are."

Her eyes flashed over my face, then sought his.

"Do I understand," she asked clearly, "that I have been before a topic of conversation between you? What was the occasion?"

McCann laughed, not in the least embarrassed, and evidently convinced that his position was sufficiently strong to give him a clear advantage.

"Hollis' natural modesty prevents his answering, but as a disinterested party, I will take upon myself to explain. I realize, Miss Carrington, that you are rather prejudiced against me, and I regret very much having lost my self-control in the boat, and thus permitting you to believe me to possess a brutal nature. The truth is, I comprehended from the first the real object of this fellow in seeking your friendship. I even compelled him to acknowledge that your father's money was the main attraction."

I stepped forward, unable longer to restrain the action.

"You dog of a liar," I said fiercely. "I know you are armed, but—"

"Wait, Captain Hollis," and her fingers caught my arm. "This matter involves me, and I wish to hear the facts. Go on, please."

McCann grinned into my face, but kept one hand behind him, gripping his revolver.

"There is not much to tell," he went on, almost jauntily. "I saw exactly how things were going before we left the boat. I knew Hollis' reputation ashore, and determined to warn you of his purpose, but had no opportunity. Besides I felt you had so poor an opinion of me that probably you would not listen."

"You were greatly mistaken, Mr. McCann," she said pleasantly. "I would have gladly received your advice. You were my father's friend."

I could read the man's surprise in his face. The graciousness of her words was a shock, yet his egotism made him instantly her victim.

"You mean you trusted me? That you would have listened?"

"Most assuredly. How could you think otherwise? I knew you were not yourself in the boat, and the treatment to which you were subjected was brutal. I owed my life to you equally with Captain Hollis, and am very grateful. I have never forgotten that you have been a guest in our home, a business associate of my father's. Why should I not have confidence in you?"

I looked at her in amazement, but her eyes never met mine. What did this mean? Was the girl acting a part, was she endeavoring to deceive him, or was she speaking now in deadly earnest? Nothing in her manner, or in the tone of her voice, gave me a clue. She appeared earnest, frank, sincere, and I held silent, realizing that whatever her secret purpose might be, no words of mine would change it. As for McCann, the very expression of his face pictured his delight, his conviction of her sincerity. It was almost too good to be true, yet his was not a nature to doubt his own attractiveness.

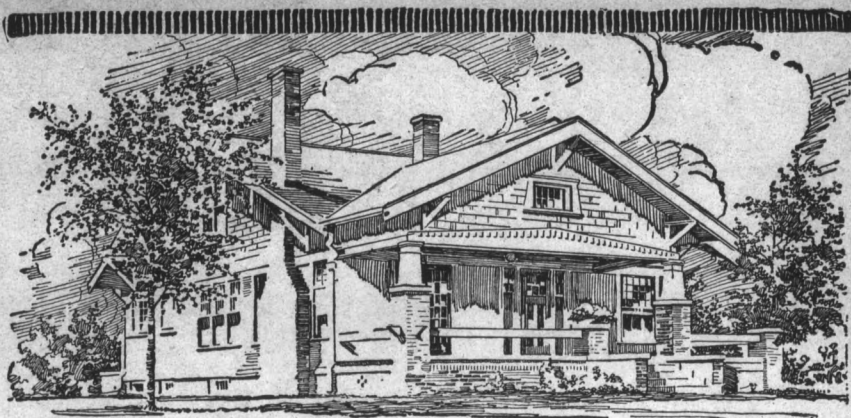
"I—I—you surprise me," he stammered, absolutely forgetting my presence. "I—I assure you I was actuated by the highest motives in all my efforts. My—my duty was to you, and your father. The interest between you and Hollis has not gone so far as to be beyond my power to remedy?"

She smiled.

"Oh, no; I assure you."

He turned, and faced me, the bully in him surging to the surface.

"I will converse with Miss Carrington alone. You were ordered to your stateroom before." (Con. on p. 174).



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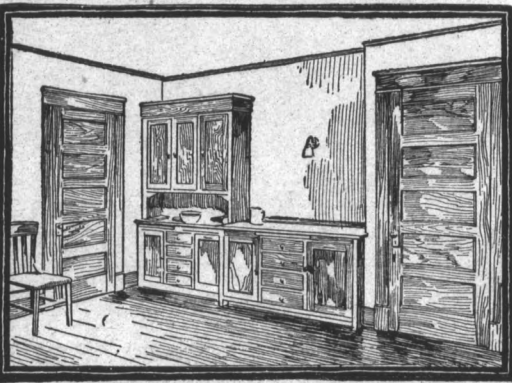
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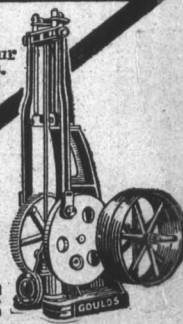
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"One day I was visited by an agent for the Caloric Pipeless Furnace. He told me he could heat my house. I didn't believe him, but when he undertook to explain the principles on which this furnace worked I became interested, and I later ordered one.

"That was one of the best things I ever did, because the comfort we have enjoyed every year since then has more than counterbalanced the low first cost.

"But my neighbors didn't think I was doing a good thing. Several called on me and told me they thought I was foolish to try to heat a large house with one

register. One neighbor said he would make an engagement with me for the first day the temperature was below zero and bring blankets with him to keep our family warm. We invited him to dinner that day and showed him every room in the house warmer than seventy degrees, and the furnace not running at full blast.

"If you will come with me through my home I think I can convince you that the Caloric heats the house very comfortably. Let us start in with the reception hall. It has two big windows, and

the stairway runs up from it, and yet you can see by the thermometer that it is seventy-two degrees warm. All winter this hall has been very comfortable, and I tell you it means something to a man to come in from the cold streets to a house that is warm all the way through.

"Right at the side of the entrance hall is our parlor with three big windows. We have used it all winter without closing the doors, and it has been just as warm as the entrance hall.

"You can look through the doors of the parlor into our living room, where the register is. Our friends told us that the living room would be unbearably hot and the rest of the house cold, but the thermometer tells a different story.

"A door from this living room communicates with the kitchen, and it has another door from the dining room. We have used only a gas range all winter, and the kitchen has been very comfortable. We haven't had anything freeze, and the terror of freezing water pipes that used to be ours is now a thing of the past.

"You can see from the picture of the dining room that it has a big bay window. Before we put in the Caloric this bay window was always cold. Mrs. Plasterer did not dare put her plants in it, and the unlucky one of the family that sat with back to the bay window at meals wanted something more than house clothes. Now it is a favorite place for the cat.

"Now, let's take a look at the upstairs. The room I show you here is a large bed chamber with a big bay window. It faces the northwest, and whenever the wind came from that direction in the winter time my wife and I felt the necessity for more covering; in fact, sometimes we had to get up and go into one of the other rooms. You know our Indiana weather is cutting and our house faces the river, so that when the wind swept up over the ice it seemed to go right through the window panes. Now my wife's taste for flowers can be



OUR FRIENDS SAID THE LIVING ROOM WOULD GET TOO HOT--THE THERMOMETER TELLS A DIFFERENT STORY



THAT BAY WINDOW USED ALWAYS A FAVORITE PLACE FOR



The Original Patented

## THE MONITOR STOVE and RANGE CO.







# My Caloric Pipeless Furnace"



USED ALWAYS TO BE COLD—NOW IT'S THE PLACE FOR THE CAT



Patented Pipeless Furnace

gratified in any room in the house and our bedroom always has some beautiful plants.

"The hallway through the center of the upstairs seems to act as a runway for the heat. We leave the doors of the other bedrooms open and they are very comfortable; in fact, my daughters, who prefer a cold room, close these bedroom doors in the afternoon so that their sleeping chambers will be cool.

"At the far end of the hall is the bathroom. In the long winter nights, with the thermometer way down, this is always comfortable, and we have never had any possibilities of frozen water pipes. I refer to those frozen water pipes again because it was a pretty serious matter when we had two baseburners, a kitchen range and two oil stoves trying to heat the house.

"Then, there is another feature that Mrs. Plasterer says is worth as much to her as anything else. We have a big attic over the whole house, and on rainy days and in cold weather this is where we hang our family washing. We just open the door leading to the attic stairway, and the furnace does the rest. It is so clean that the clothes are never

dusty and never marred by coal smoke as they used to be when we had the stoves.

"Now that I have shown you where we live, let's go down and look at the furnace. I want you to see how little room it takes, and how we can use our cellar. The furnace keeps the temperature just above freezing. This enables me to lay in a nice stock of vegetables and fruits when prices are comparatively low, and to carry them through the winter with the perfect assurance that they will keep well.

"Another thing I like about the furnace is the cleanliness. The ashes and dust in handling the furnace are less than what I used to take from one of my baseburners. Nor have we any trouble with this furnace smoking. So the house is easily kept clean.

"You see I haven't a big coal bin. When I had the two baseburners I used to buy for them and the kitchen range fifteen to eighteen tons of coal, and I want to tell you that it was some job to carry that coal upstairs and to carry the ashes down. Now I reach from the furnace to the coal bin with my shovel and I put the ashes out of the window at the side of the furnace. It isn't any work at all.

"Besides, and this will be good news to the people who are thinking of furnaces, I don't burn as much coal by forty per cent. It is a very unusual winter that would require me to use nine or ten tons of coal. In fact, since the furnace was in, I have never reached that amount.

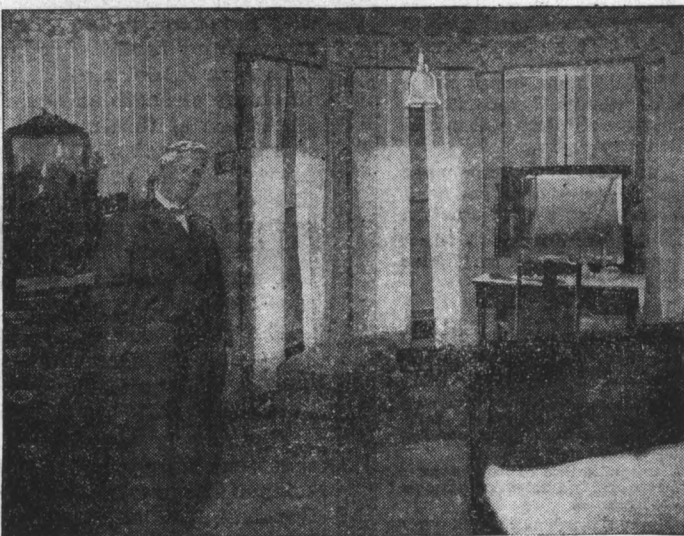
"Then I had another experience. In a building operation I had to remove a lot of piling that had been used to make a platform. The boys were going to burn that

up, but I had a saw and I had this cut into chunks and stored in my cellar. Pretty nearly all of the winter I fired the furnace on this wood, that otherwise would have been wasted, and the fire kept just as well as it did with the coal. In fact we burn all kinds of trash in this furnace.

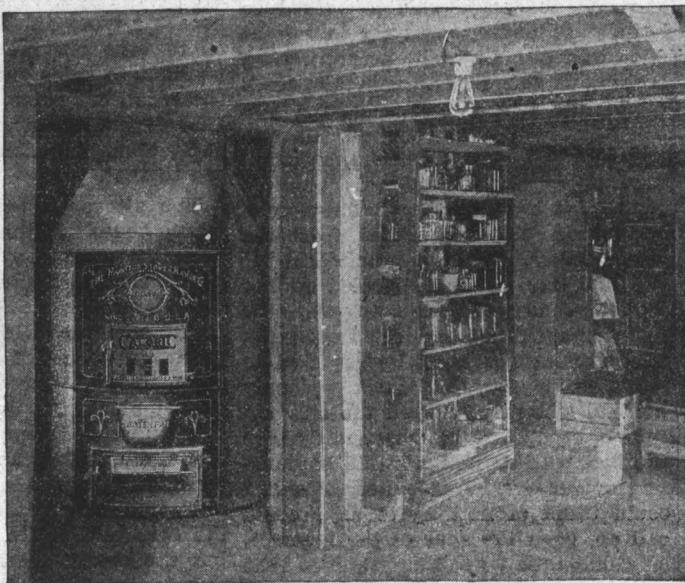
"Do you wonder, then, with my house comfortable at

less than two-thirds of what it used to cost me in money, and less than one-third of what it used to cost me in labor, I am enthusiastic about the Caloric? To my mind it is the one best buy in heating devices, and I wouldn't be without mine for ten times its cost."

Mr. Plasterer is not alone in this opinion of the Caloric Pipeless Furnace. We have hundreds of customers who will tell you stories equally as interesting.



OUR BEDROOM—THIS ONCE COLD BAY WINDOW IS NOW A PLACE FOR FLOWERS



NOW LET'S GO DOWN AND LOOK AT THE FURNACE

You needn't suffer the inconvenience of stove heating another winter. The Caloric can be installed in any house, and the one register will not cut into your walls or make it necessary for you to incur a big bill for redecorating or replacing plaster and woodwork.

Perhaps there is a Caloric dealer in your town. See him. He will show you the furnace, explain to you why it is so successful and tell you about our strong guarantee. If you don't know him, write to us and we will send you our booklet, "Progress," that explains why the Caloric is so superior.

COMPANY

ESTABLISHED 1819  
2029 GEST STREET

CINCINNATI, OHIO







## Even She Had Corns

Until a Little While Ago She Thought Them Unavoidable

If you have corns don't blame yourself too much. Many an old person has had them fifty years.

Yet they have done what you do—pared them and used old-time, useless treatments.

But what folly it is when nowadays about half the world keeps free.

Just try one corn.

Apply a Blue-jay plaster in a jiffy. Then forget it. It will never pain again.

In two days take the plaster off. The corn will disappear. Only one corn in ten needs another application.

The cost is five cents per corn. The trouble is a moment. The results are sure.

You will laugh at the old ways when you try Blue-jay. You will wonder why people ever let corns hurt. Please start tonight. You have suffered long enough.

**BAUER & BLACK**  
Chicago and New York  
Makers of Surgical Dressings, etc.

## Blue-jay

**Stops Pain—Ends Corns**  
25c Packages at Druggists  
Also Blue-jay Bunion Plasters



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THEREFORE  
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Mention the Michigan Farmer when writing Advertisers

### "CONTRABAND."

(Continued on page 169).

"I did not so understand. I was merely told to go below."

"Well, you understand now. Open the door; go in, and close it."

To resist would have been utter foolishness. I could see the gleam of the gun in his hand, and realized that he only required an excuse to use it. More, there was nothing in the expression of the girl's face to inspire me to resistance. She did not even glance toward me, or exhibit the slightest interest. Yet never did I hate, despise the fellow more than at that instant. Every nerve in me throbbed with the desire to reach out and crush him with my hands. Aye, and I would have done it, risking his shot, staking all on my strength and quickness, had I not seen at that moment White appear at the head of the stairs, staring down at us, his hand still gripping the door of the companion. Even as he hesitated, Dade emerged from the steward's pantry laden with dishes. McCann saw them also, and his courage flared up.

"Don't forget, Hollis," and his voice had in it the old harshness, "that you are no longer captain of the Indian Chief. Return to your room."

With hands clinched in impotent rage, not even venturing a reply, I stepped backward. As I crossed the threshold McCann closed the door, and I heard the key turn in the lock. No other sound reached my ears except a smothered laugh, and the rattle of dishes as Dade deposited his load on the table. I waited a moment, bending close to the wood, in the hopes of overhearing some scrap of conversation, but the intervening door was sufficiently solid to shut out all semblance of sound. Trembling still with anger, and dazed by the strange action of the girl, I sank back upon the stool, realizing my utter helplessness. All she had done, and said, appeared so natural it never occurred to me at once that she might be acting a part, seeking in this way to gain McCann's confidence, in order to win from him the information we required. It was only as I sat there in silence, brooding over every detail, that this possible conception began to slowly dawn upon my mind. That she could trust the man in any way was practically impossible, for he had revealed to her his true character in so many ways the memory could not be blotted out. No, her graciousness must be assumed to cloak a purpose; her quick womanly wit had instantly grasped the only avenue of escape. Why, how swiftly that wit had worked in her rapid explanation of our overheard conversation. I could think of nothing to say; could call up, upon the spur of the moment, no combination of circumstances that would make the spoken words sound intelligible. But she had; she had instantly fitted the very phrase which sounded the most suspicious into a remark so extremely natural as to even convince McCann she spoke truly. Strange she should have thought of that; that she should have hit upon the very idea most apt to deceive him. I could hear her voice, soft, hesitating, repeating again the words: "Captain Hollis had asked me if—if I thought I could learn to like him; and I said I thought I could. That—that was all." It was an explanation no man would likely question; even in his suspicion and anger it carried conviction to McCann. And the words—embarrassing words they must have been—were spoken to save me; were uttered for my sake.

As the full knowledge of this truth grew apparent, I was able to view all that had occurred later in a different light. She had simply accepted her one chance; had grasped with womanly intuition the single weapon left at her command. All at once, inspired by sudden confidence, she had determined

to fight out the battle alone. Girl as she was in years, her experience in the world had been that of a woman, and she instinctively realized her power—the power of wealth, of beauty, and of youth. Possibly she was not wholly unaware that McCann exhibited already personal interest in her; if not she certainly felt confident that she could arouse such interest if she made the endeavor. My questioning, my doubt, turned to admiration. It had been beautifully done, deftly accomplished as to deceive even me. Aye! and the method had succeeded with McCann. I recalled the expression of surprise, of gratification, of awakened pride on the man's face. He had no power of resistance left; he was already putting in her hands.

True, but would he remain so? The game she played was a dangerous one; if she ventured too far she would discover the brute lurking in him still. And he had the power, the physical power, to wreak vengeance once he suspected deceit. His money, his education, his force, made him supreme on board! neither Liverpool or White would venture to oppose any plan he might promulgate, and, with their backing, the mutinous crew would be found obedient enough. Indeed, they had gone so far already they must stick together now for mutual safety. And there was no one to help her if she made a single false step—absolutely no one; she was a lamb among wolves. I paced the narrow space, forgetful of all else except this peril which imagination pictured, pausing to listen at the door, and glancing out the open port on the vista of sea and sky. God! how weak, how helpless I was—alone, a prisoner, with no weapon at hand; no knowledge even of where the others on whom I could depend were confined. If I could plan; if I could even hope to act; I was ready enough to perform a man's part; but even this was denied me. Those fellows would never release me again, not for a moment. I would be compelled to take observations, to calculate position, to trace our sailing course on the chart, but not for an instant would I be left again unguarded, either on deck, or in the cabin. McCann would see to that.

The afternoon passed, dragging its weary hours. Nothing happened to relieve the monotony and dread of solitude. No one approached the door of the stateroom, not even to offer me food, and my ears were able to distinguish no sound of movement in the main cabin. Occasionally footsteps passed along the deck overhead, and once or twice I heard the voice of Liverpool sing out some order to the men forward. The sun sank, its rays glinting across the waters, and telling me the ship held to its southwest course, but the ocean, so far as I could see, remained desolate, the horizon unbroken by a gleam of sail, or smudge of smoke. No echo of a cry reached me from any lookout aloft. The vessel proceeded quietly, no effort being made apparently to achieve speed. I judged our rate would not exceed eight knots, and decided there was either a scarcity of men in the stokehole, or else they were conserving fuel to attain greater speed during the hours of darkness. The bright sunlight began to fade into a purple dusk.

### CHAPTER XXVI.

#### A French Man-of-War.

NO food was brought me during the afternoon, nor had I eaten all day, yet my mental state was such I had no consciousness of hunger. The rattle of dishes was about the only sound reaching me from the cabin, making me aware of the passage of time. Thus I could determine when Dade set and cleared the table. The last meal of the day hung on until long after dark, and I had given up all thought of being remembered. The sea without was shrouded in blackness, ex-

cept for the faint glimmer of starlight reflected along the crests of racing billows. Within, I had discovered no means of creating a light, although my eyes were sufficiently accustomed to the dimness to enable me to move about my narrow quarters safely enough. From the sound of his voice, which occasionally reached me through the open port, I was aware that Jim White had charge of the deck above, and the revolutions of the screw indicated a marked increase in speed, probably to twelve knots.

It must have been between eight and nine o'clock when the key turned in the lock of my door, and Liverpool looked in. The light from the swinging lamp in the main cabin flared into my eyes, blinding me, yet I recognized his face, and saw Dade close behind him bearing a tray. Neither man spoke, but Red having assured himself of any presence, stood aside, and motioned the steward to enter. The latter deposited the laden tray on the desk, and backed out silently, every movement showing him thoroughly cowed by his guardian. Realizing that any word from me would only result in insult, I remained silent, and the two disappeared, closing and locking the door behind them. I confess I ate the food with relish, for it was well cooked, and served with some daintiness. After a second cup of coffee I felt much more like myself, rummaging through the captain's chest until I found some tobacco and a pipe, which I at once appropriated to my own use. No one returned for the emptied dishes, and I sat for a long while at the open port smoking, the blue spiral swept away by the rush of air, and my eyes on the starlit waters.

My mind was busy enough, far too busy to permit of sleep, yet my thoughts brought me nowhere. The situation, from my point of view, was absolutely hopeless. No doubt I could break down the door, but this would only create an alarm, and I would emerge into the grip of a dozen men. Even if free there was no possibility of my winning back control of the ship alone and unaided. Every weapon on board was in possession of the mutineers, and they were taking no chances on having their plans overturned. The leaders, at least, realized the desperate situation in which they had placed themselves by lawless action, and would permit no one to stand in the path of their escape. The very grim silence with which food had been given me intensified my feeling that no mercy was contemplated. They would use me; would command my knowledge of navigation; would compel me to guide them to the exact spot chosen—and then! What? The answer was a blank, a silent horror into whose mystery I could not even look.

I had been sailor long enough to accept the ordinary perils of the sea as part of the profession. Moreover, my experience had been such as to make me feel that any form of danger might be encountered along the ocean highway. Nothing was too strange to be true at sea; and so it was not the position in which I found myself; not the possible fate of the Indian Chief, or of her captured officers, which weighed most upon my mind—it was Vera Carrington. If those villains scuttled the ship; if they took to the boats to save themselves, leaving us to drown like rats, what would they do with the girl? Would McCann dare to take her with him? Would he venture leaving her alive to bear witness to his crime? There was but one answer—not unless she was utterly in his power. Either he must ruin her by force, and thus crush her spirit to his will, or else compel her to marry him, and so legally seal her lips. And the man was perfectly capable of taking either course—whichever seemed the easier.

This was the consideration which served partially to arouse me from



coma. I could not continue to sit there waiting for Fate to approach; better far to go forth and meet it in manly fashion. I had a good strong knife in my pocket, and the lock of the door was a common one, the wood surrounding it soft pine. There was nothing in that obstacle to prevent my escape, and if I was discovered at large, my punishment would merely be confinement elsewhere. I had therefore nothing to lose, but everything to gain by the experiment. There was no key in the lock, for I could perceive a gleam of light in the outer cabin, although the opening was not sufficiently large to enable me to observe movement. Nor did my ear at the slight orifice distinguish any sound of occupancy. McCann would scarcely leave the cabin without a guard under the circumstances, but the hour was late, the night had thus far been a quiet one, and it was quite probable the fellow, comfortably situated, was drowsing at his task. Anyhow I would make little noise, and the chance was worth taking.

The labor proved easier than I had supposed. The soft pine yielded easily to the sharp blade, and a very few moments sufficed to cut the lock clear, enabling me to open the door silently and take cautious survey of the main cabin. The table had been hoisted, leaving the entire central space clear, and the swinging lamp was turned so low as to leave all the corners in obscurity. At first I doubted the presence of anyone, and had, indeed, ventured forth before perceiving the form of a man outstretched on the divan surrounding the butt of the mizzen mast. The fellow was asleep, yet restless enough to be dangerous. His face was in the shadow, and I thought it best not to venture close enough to identify him, although the dim light revealed a belt about his waist, and the bulging butt of a revolver. Convinced that my only hope of accomplishment lay in the discovery and release of my fellow prisoners, I crept across the deserted cabin, and entered the passage leading forward. Somewhere amidst these were surely confined. But I was not destined to discover where.

I had taken scarcely a step when the companion door opened, and a man started down the stairs. Crouched in the darkness I saw the sleeping guard, aroused by the noise, spring upright, and as the light fell on his face, I recognized a seaman named Dubois. The man on the stairs paused, gripping the rail, staring down as though momentarily blinded by the light.

"Is that you, Dubois?" he asked in the harsh croak belonging to Jim White.

"Yes, monsieur."

"And you was asleep."

"I lay back to rest, but I was not asleep, monsieur—non, non."

"Well, we won't fight about that now. You're the only Frenchman on board, and we want you on deck. Go on up; I'll stay here. Aye, man, yer better leave the gun."

"Vat iss it, Monsieur White? Why they want me on deck?"

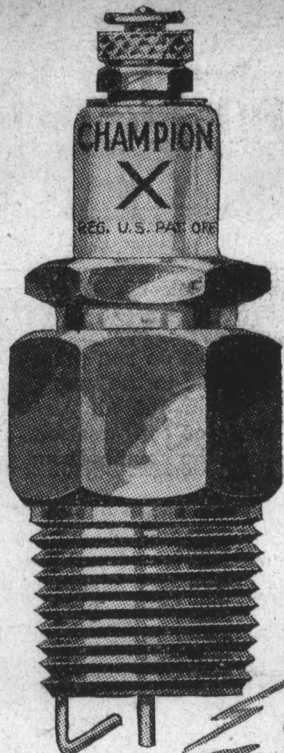
"What's the difference, you frog-eater? But I'll tell yer anyhow. There is a cruiser showing up off our port quarter which has caught sight o' us. She looks Frenchy, and if there is a hail it will be up to you to answer—you are the only one aboard this hooker who talks the lingo like a native—see!"

Dubois stood staring, his lips parted in sudden terror.

"A French warship; eet hail us?"

"Not yet; but they are bound to question us, all right. There! did you hear that? A shot across our bows, politely asking us to heave to; aye! and we are slowing down; come, hurry up on deck with you Frenchy."

"But—but, monsieur, what ees it I can say? I know not ze words, ze—ze explanation." (Continued next week.)



Champion X  
Price 75c

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the DELCO-LIGHT exhibit  
at your State or County Fair

## SAVE MONEY

See Page 185

Adv.

**WANTED** A man and wife to work farm of 80 acres on half shares all equipment furnished. Mrs. A. BROOKS, Northfield Farm, Leland, Michigan

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A variety developed and improved at the Michigan Agriculture College. For list of farmers who have pure seed for sale, write J. W. NICOLSON, East Lansing, Mich.

**Timothy Seed** \$4.00 per bu. High purity and germination. First class in every way. Timothy-Alsike Mixture \$4.50 per bu. Satisfaction or your money back. HENRY FIELD, Shenandoah, Iowa.

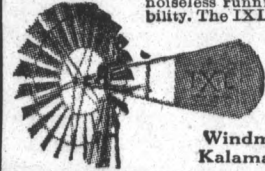
**ROSEN RYE** is practically twice as good a yielder as common Rye. It crossfertilizes so get the pure variety from farmers whose fields have been inspected. For list write, J. W. NICOLSON, East Lansing, Mich.

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Kalamazoo, Mich.

**Michigan Winter Barley** gives promise of being an exceptionally good crop when seeded last of August or first of September. For names of growers write, J. W. NICOLSON, East Lansing, Mich.

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I have 200 acres of good unimproved lands in Gladwin County Mich. in 40 and 80 acre tracts well located that I will sell at \$15 per acre. \$3 per acre down, \$3 per acre each year until paid for with interest at 6%. I have some special bargains at this time on improved farms. U. G. REYNOLDS, Gladwin, Michigan.

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**WANTED** to rent high class fully equipped general stock or dairy farm. Experienced. Agriculture Graduate. Box A. 91, Michigan Farmer, Detroit, Mich.





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The heels, soles and toes are strongly reinforced. The wide elastic, garter-tear-proof tops with the anti-run stitch are knit on to stay. The quality is uniform throughout, sizes correctly marked, and the legs are full length. The feet and toes are smooth, seamless and even. The famous Durham dyes prevent color from fading or turning green after wearing or washing. Sells for 15, 19, 25 and 35 cents the pair.

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## Automobile Warning

Hardly a day passes but what some farmer or business man driving to the city of Detroit leaves his car upon the public streets and it is stolen.

Recently an automobile owner from Dimondale, one from Tuscola County, Holly, Port Huron, and Genesee County have lost valuable cars on the streets of Detroit. Conditions are such that it is extremely careless to leave an automobile upon the public streets of any large city. Locks will not protect and it costs but little to put them in a garage.

Many accidents occur by driving against blinding lights, in a fog, or cloud of dust. Stop at once when you cannot see ahead, always signaling for any car which may be coming behind.

## Better Buy That Buggy NOW

Save \$20 to \$40

I am going to give buggy buyers a chance to buy genuine Split Hickory buggies at prices they will never get again. Material costs are going higher every day — so are buggy prices. But if you are going to need a buggy this fall or next spring, better buy NOW. Just write a postal and get my "After Harvest Cut Price List" and catalog of my famous

### SPLIT HICKORY

Buggies and Harness and see the big bargains I am offering those who buy NOW before the higher prices go into effect. See how I will save you \$20 to \$40 on any of the 150 nifty, snappy styles shown. Next year prices will almost double. I give 30 Days FREE Road Test and 2 Year Guarantee. Split Hickory Vehicles always give satisfaction. Don't delay—send today and get my big money-saving prices.

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# Woman and Her Needs

## At Home and Elsewhere

### "Eyes Have They But They See Not"

THE United States is at war. We have all know that fact in an abstract sort of way ever since last April. We read it in our paper along with the news from the front, what the suffragists are doing and the advertising. Some of us even read it before we did the birth notices and marriage licenses, and yawned and said, "What a shame for President Wilson to go and drag us into it. What difference does it make to us what a lot of kings in Europe are doing? Why couldn't he keep us out of it?"

And then we went on, a lot of us, about our daily business, wondering what color was going to be worn this summer, planning on our usual vacation, grumbling about the increasing cost of living and keeping "business as usual," even if the war was on.

To be sure, a few realized right away what war meant, and either for the sake of their own sons or the other woman's sons they began at once the work of war relief, of eliminating luxuries to give to the sufferers, of rolling bandages, of buying Liberty bonds, and of "buying babies" in far-off Syria. Some began the work for humanity's sake, others because a son or brother enlisted and opened their eyes to grim facts.

Then came the draft and a great many others awoke to the fact that the war is really on. Of course, they had known it in a sort of way, but there was so much to do they hadn't really realized it until the sight of khaki on their own flesh and blood gave them a sort of mental cold shower and woke them up. Then they, too, joined the army at home and began to take an interest in Red Cross work and Hooverism, and knitting.

But we are far from being awakened yet. There are hundreds of us who can not be touched by the draft and who refuse to be touched by the other fellow's troubles. Many are so wrapped about in a cloak of selfishness that the countless appeals to patriotism, the prayers and entreaties for thrift and service, never penetrate.

With all that the daily papers, farm journals and magazines have said about a shortage of food, the necessity of feeding our allies and the almost certainty that the coming winter would see us face to face with "skimping," one would think that every person with human intelligence would be enlisted in the campaign for food saving. Yet just the other day I met a man who laughs at the idea that his family should cut down on their table. He insists on his bacon and eggs for breakfast, his juicy roasts for dinner, and still maintains that no well kept family can get along without at least three desserts for dinner. His answer to your appeal for economy is that he is able to pay for it and so long as he is his family is going to get all there is going. If you remind him that his feasting takes food from someone who needs it he just laughs and seems to think the whole subject of war is a joke.

There are not many like him, I hope, but there are more than there should be. Even one who refuses to "come to the help of the Lord against the mighty" is one too many. But there are enough of them to make the far-seeing uncomfortable. As a matter of fact it looks as if between those who are awake to the situation and those who refuse to open their eyes the blind have the majority vote.

How many people do you personally know who are alive to the war? How many make the war and our part in it their chief topic of conversation, and how many make the neighborhood gossip their theme?

With the actual scene of action so far away it is hard for us to realize the situation. When we see nothing but peace about us we can hardly be expected to visualize war. But war is here, and those who have not yet felt it in one way or another are sure to do so before the end comes. Whether we believe in war or not, now that we are in it it is up to us to do our part whether it is in the kitchen, hospital or camp.

Curbing one's appetite will never get one into the limelight, as would winning a battle. But it is every bit as important at this time. And standing over a hot cook stove canning fruit and vegetables isn't half so picturesque as wearing a nurse's uniform and "cooling fevered brows." But soldiers must eat, and it's far pleasanter to eat than to lie in bed and be nursed. So the cooks seem to have the most important role, after all. DEBORAH.

### CAUSES FOR FAILURE WITH COLD-PACK CANNING.

BY GLADYS SOULE.

Cold-packed products may spoil for a good many reasons, but there are a certain few things that cause ninety per cent of failures when one is trying to preserve vegetables and fruits. What is direction enough for one woman to can successfully, may not necessarily be enough for another to do the job so that the product keeps. Also, vegetables packed in a hot, dry spell do not keep as well, as a usual thing, as those packed just after a rainy spell.

Defective jars and rubbers are probably the most prolific causes of failure. Before a batch of beans or peas are to be put up in cans, the glass jars should be thoroughly gone over and tested to see that there are no outstanding defects. After the cover has been taken off, place the two thumbs together and start each around the can, but in opposite directions. This will detect any irregular pieces of glass that may not have been removed after the cans were molded. Such pieces of glass can be easily removed with an ordinary case knife. One should use the knife well down toward the heel.

To test a can, fill it partly full of water, then put the rubber on and screw the lid down. Invert the can of water on the table and if the seal seems to hold, it is probable that the jar would result in a nice can of product. Glass tops may be adjusted so that there is no knocking by slightly tapping. Turn the cover until a tap does not result in knocking. Then turn the ball around until it is in proper position to clamp the top down at the right point. Zinc covers are often ruined when opening the can. A knife point is inserted under the cover and this bends the lower edge that is depended upon to perfect the seal. There is a device on the market for straightening these bent edges. Unless the bottoms of these zinc tops are perfect, the top should be discarded since nothing but poor stuff will come from its use.

Poor rubbers cause many losses. Red rubbers are usually best, and

thickness is no sign of quality. Can rubbers must stand considerable heat and pressure. This is where the cheap rubbers fall down, since the decay of the rubber goes on all through the winter. It is a very poor brand of economy to use rubbers a second time, for while they may prove successful sometimes, often they do not and when a quart of beans is worth forty cents, there is no occasion for taking a chance of wasting forty cents to save one cent.

The time of processing should be watched carefully and made to correspond with the time required in the time tables that are being followed. A trouble that often creeps in is that the person doing the canning does not know when the water is boiling. There are four stages in heating water, viz.: 1. When the vapor passes off. 2. When the bubbles let go of the bottom and rise to the top. 3. When one can see the currents of water as they circle about the inside of the vessel. 4. When the water "jumps and tries to get out of the container." Water is up to 212 degrees F. in the last stage here mentioned and time should be counted from then on, not before.

More than ninety per cent of the cases of spoiled canned goods may be traced to defective jars, poor rubbers, bent tops, or lack of sufficient sterilization.

### HOW TO CLEAN OLD PARAFFIN.

Paraffin that has become unclean through usage in canning and preserving, may be cleaned and reused. Many times it can be cleaned with a brush in cold water. If this does not remove all the dirt, says a specialist of the United States Department of Agriculture, heat the paraffin to boiling and strain it through two or three thicknesses of cheesecloth placed over a funnel. Or a thin layer of absorbent cotton over one thickness of cheesecloth may be used as a strainer. One straining should be sufficient ordinarily, but if the paraffin still is unclean heat and strain again. Any paraffin lodging in the strainer may be recovered by heating the cloth and pouring off the hot liquid through another strainer.

### HOME QUERIES.

If P. H. will put some sassafras oil on some cotton batting and place it where the ants are, I believe she will soon be rid of them. I and my neighbors have used it successfully.—M. M. B.

Household Editor:—Occasionally on the ivy houseplant white, moldy spots appear, both on the leaves and stem. What is the cause and how should it be treated? What will clean window panes, which seem to have rust of screening eaten into it? If screens are not removed from windows, occasionally it gradually turns brownish and streaked. Strong solutions, like alcohol, gasoline, soda, borax, and scouring is of no avail.—Mrs. G. D.

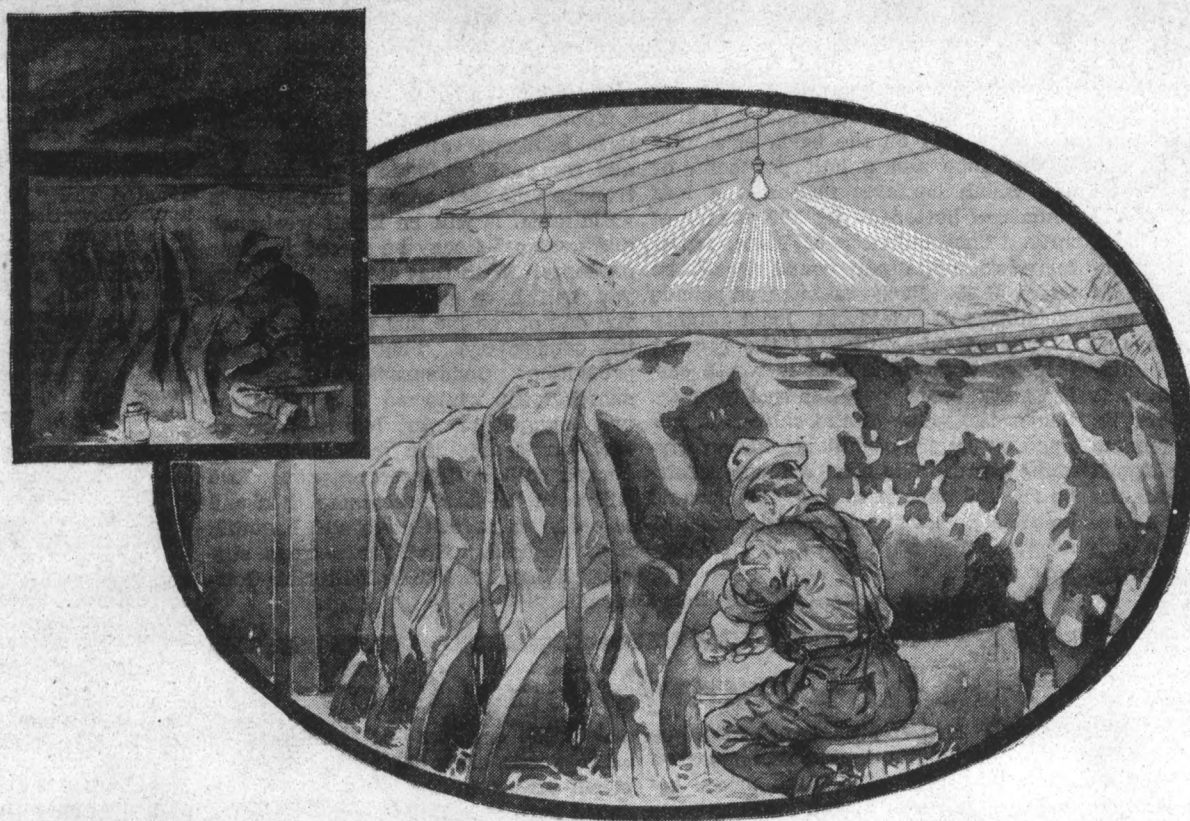
The houseplant is attacked by a mildew which can be controlled by the use of some good fungicide. The damp weather has been the cause of it. A dusting of the plant with flowers of sulphur will probably keep the disease in check. If not, use some prepared Bordeaux, which can be purchased at seed supply houses.

Iron rust is removed by an acid instead of an alkali. Buy a little hydrochloric acid and try this on the stains. If it does not help, write again.



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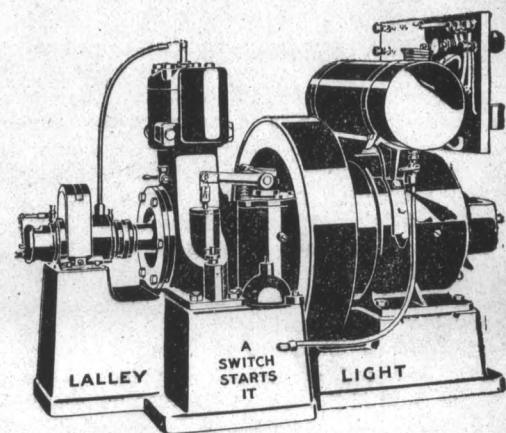
Though among the first--if not the very first--farm electric plants, no experimental problems were left for the farmer to pay for.

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Plant is 27 inches long, 14 inches wide, 21 inches high.

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## Local Creamery vs. Condensary

By W. B. LIVERANCE

THE great war has created abnormal food conditions such as have never been universally experienced before. It is true that during our Civil War the economic conditions as regards foods were somewhat as today, but only in proportion to the immensity of the two wars. This is a world war and very naturally every country, state, province and township that can, is expected to do its share to feed those countries which can not produce sufficient food stuffs for their own maintenance.

Particularly is it true that there is a shortage of "animal feeds," as distinguished from vegetable products. In most European countries, particularly in those countries which are at war, meat and dairy products are not produced in sufficient quantities to satisfy the demand. This is a result of several causes, but principally because of the scarcity of man labor which is necessary to care for stock and to produce the crops which are essential for its maintenance. Great quantities of meats and dairy products are being shipped to Europe at the present time with the result that our own conditions as regards production, handling and distribution of those products, are very abnormal.

Milk, the universal food, is greatly in demand in all the belligerent countries. Not until there was a decreased supply was its value fully appreciated. When a child loses its vivacity and becomes sallow and thin because one food substance is missing, then does the value of that one element become apparent. But milk has been in demand in Europe for the use of armies and adults at home as well as for the children and infants.

The easiest way to transport milk is in condensed form and in tin and cans. Because of that fact there has been an enormous demand from across the sea for condensed milk. Vast stores of condensed milk which were in warehouses before the war, have been depleted through shipment abroad and there has been a constant and growing demand on condensaries to ship more and more. This has resulted in the erection of a large number of milk condensing plants throughout Michigan and in fact throughout the dairy sections of this country.

As a result of the boom in the milk condensing business many of our thriving local creameries are meeting with strong and dangerous competition. In fact, if the war, the cause of the demand for condensed milk, continues much longer, many creameries will be forced to cease operating. That is indeed unfortunate as the patrons of such creameries will learn in years to come.

Many will recall that at the beginning of the war the milk condensing business was at a low ebb. In Wisconsin several plants were obliged to close their doors. One large plant in southern Wisconsin, operated by one of the largest milk corporations in this country, turned its factory temporarily into a creamery. In other places large quantities of milk were sent back to the farmers, the majority of whom were absolutely unprepared to utilize it. As soon as the unnatural demand for the milk began, however, that condition ceased. The demand for condensed milk under normal conditions is comparatively limited. Conditions as they were before the war show plainly that there were then more than enough condensaries to supply the normal demand. With the erection of more and more plants what will the condition be when the great war ceases?

Many farmers have been led to quit patronizing the home creamery because of the apparently higher price offered by the condensary. The writer

knows from actual figures that during the year 1916 condensaries netted the farmers less for their milk than did the well operated local creamery. Even today with condensaries paying \$2.35 per hundred for milk testing four and a half per cent butter-fat, well-operated creameries are giving as good, if not better, returns. For example, we will consider a creamery which paid forty-two cents per pound for butter-fat on its last pay day, and compare the returns from that creamery with those of the condensary, taking the price paid on the basis of a milk testing four and a half per cent, or one which contains four and a half pounds of butter-fat per 100 pounds of milk. That quantity of butter-fat at forty-two cents per pound would be worth \$1.89. Each one hundred pounds of milk will yield at least eighty pounds of skim-milk. At the present price of pork, skim-milk is worth easily sixty cents per hundred pounds, hence, the value of the skim-milk per hundred pounds of milk would be forty-eight cents. The total amount received for 100 pounds of milk then, would be \$1.89 plus forty-eight cents, or \$2.37 as compared with \$2.35, the condensary price.

Year in and year out the home

creamery will yield fully as good, if not better, returns than the condensary. In fact, the returns are much better than will be obtained from the condensary if it has no competition. As a farm boy the writer remembers when milk was refused at the condensary for no other reason than that there was an over-supply. When creamery competition sprang up the condensary was only too glad to get the milk. Even during the past year our agricultural journals have reported meeting after meeting of milk producers who were patronizing condensaries, but were uniting because of unsatisfactory returns from the condensary.

Your creamery is a local institution; it is being operated in your interest and for your protection. If your patronage and that of your neighbors is withdrawn, it will be much weakened and eventually may be forced to close its doors. With that competition gone, you will have no comeback in case you do not receive just treatment from the condensary. This is the general prediction: Condensaries will operate successfully while so many nations are engaged in war, but as soon as the war ceases the market for condensed milk will become poor. You will need the home creamery then and in order to have it alive and booming it is necessary that the patrons support it loyally. (See Editorial Comment).

## The Country's Bean Crop

THE largest bean crop in the history of the country will be grown this year. The high prices being paid for the product, and the prospective demand on account of the war, are responsible for the increased interest taken in the crop by farmers. Among the states in the Union, Michigan shows the largest increase in the number of acres, although several other states show larger percentage increases.

Five states in the Union have more than a hundred thousand acres each devoted to this crop. These states are in the order of their importance—Michigan, California, New York, Colorado and New Mexico. Michigan has 639,000 acres this year, according to the latest federal estimate; California 395,000 acres; New York 210,000 acres; Colorado 170,000 acres, and New Mexico 136,000 acres. The same authority gives the number of acres in Tennessee as 67,000; 45,000 in Idaho; 35,000 in Wisconsin; 27,000 in Nebraska; 25,000 in Maine; 19,000 in Ohio; 17,000 in Arizona, and 10,000 in Vermont.

The kinds of beans grown in these different states is a matter of importance, inasmuch as the great bean of commerce is the white pea-bean. Only six of these states grow fifty or more per cent of this variety and of these six only two are heavy producing states—Michigan and New York. The per cents of the crop of the white pea-bean variety for the different important producing states named are, according to the estimates: Michigan 91 per cent; Wisconsin 90 per cent; New York 79 per cent; Nebraska 65 per cent; Vermont 50 per cent, and Idaho with a crop largely of this kind. Sixty per cent of Maine's crop is of the Red Kidney variety; 82 per cent of Colorado's crop, and 83 per cent of New Mexico's belong to the Pinto type; the soy bean predominates in Ohio and Tennessee, with the percentages at 64 and 60 respectively, while 34 per cent of California's crop is Lima, 22 per cent pea-bean and 44 per cent is divided among many other kinds.

To give the reader a better idea of the position of this state in the production of the pea-bean, a comparison with the total acreage is illuminating. Figuring the percentages and acreages as given, one arrives at a total area devoted to the variety in this country of 974,120 acres, of which 581,490 acres

are in the one state of Michigan. In other words, sixty per cent of the pea-beans grown in the country are produced here in our own state.

### CLIMAX BASKET LAW.

Inquiry has been made as to the requirements of the new state law regarding climax baskets. That the inquirer and our readers may have the entire text before them we are printing it here in full. Those having products to be sold in these containers would do well to read the sections carefully. In some instances the provisions of this measure may work a temporary hardship; however, the law in conjunction with other recently enacted legislation is going to help put the marketing of fruits and vegetables on a much better business basis. Every commercial grower should endeavor to urge not only the standardization of grades but likewise the standardization of containers to the end that a basket of a particular grade of fruit will have a definite meaning in the minds of both buyer and seller. Following is the text referred to:

Section 1. That standards of climax baskets for grapes and other fruits and vegetables shall be the two-quart basket, four-quart basket, and twelve-quart basket, respectively.

(a) The standard two-quart climax basket shall be of the following dimensions: length of bottom piece, nine and one-half inches; width of bottom piece, three and one-half inches; thickness of bottom piece, three-eighths of an inch; height of basket, three and seven-eighths inches, outside measurement; top of basket, length eleven inches and width five inches, outside measurement. Basket to have a cover five by eleven inches, when a cover is used;

(b) The standard four-quart climax basket shall be of the following dimensions: length of bottom piece, twelve inches; width of bottom piece, four and one-half inches; thickness of bottom piece, three-eighths of an inch; height of basket, four and eleven-sixteenths inches, outside measurement; top of basket, length fourteen inches, width six and one-fourth inches, outside measurement. Basket to have cover six and one-fourth inches by fourteen inches, when cover is used.

(c) The standard twelve-quart climax basket shall be of the following dimensions: length of bottom piece, sixteen inches; width of bottom piece, six and one-half inches; thickness of bottom piece, seven-sixteenths of an inch; height of basket, seven and one-sixteenth inches, outside measurement; top of basket, length nineteen

inches, width nine inches, outside measurement. Basket to have cover nine inches by nineteen inches, when cover is used.

Section 2. That the standard basket or other container for small fruits, berries, and vegetables shall be of the following capacities: namely, dry one-half pint, dry pint, dry quart, or multiples of the dry quart.

(a) The dry half pint shall contain sixteen and eight-tenths cubic inches;

(b) The dry pint shall contain thirty-three and six-tenths cubic inches;

(c) The dry quart shall contain sixty-seven and two-tenths cubic inches.

Section 3. That it shall be unlawful to manufacture for shipment, or to sell within the state any climax baskets or other containers for small fruits, berries, or vegetables, whether filled or unfilled, which do not conform to the provisions of this act; and any person guilty of a willful violation of any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not exceeding twenty-five dollars: Provided, That nothing herein contained shall apply to the manufacture, sale, or shipment of climax baskets, baskets, or other containers for small fruits, berries, and vegetables when intended for export to foreign countries when such climax baskets, baskets, or other containers for small fruits, berries, and vegetables accord with the specifications of the foreign purchasers or comply with the law of the country to which shipment is made or to be made.

Section 4. That the examination and test of climax baskets, baskets, or other containers for small fruits, berries, and vegetables, for the purpose of determining whether such baskets or other containers comply with the provisions of this act, shall be made by the Dairy and Food Department, and the Dairy and Food Commissioner shall establish and promulgate rules and regulations allowing such reasonable tolerances and variations as may be found necessary.

Section 5. That it shall be the duty of each prosecuting attorney, to whom satisfactory evidence of any violation of the act is presented, to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the state for the enforcement of the penalties as in such case herein provided.

Section 6. That no dealer shall be prosecuted under the provisions of this act when he can establish a guaranty signed by the manufacturer, wholesaler, jobber, or other party residing within the United States from whom such climax baskets, baskets, or other containers, as defined in this act, were purchased, to the effect that said climax baskets, baskets, or other containers are correct within the meaning of this act. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of climax baskets, baskets, or other containers to such dealer, and in such case said party or parties shall be amenable to the prosecutions, fines, and other penalties which would attach in due course to the dealer under the provisions of this act.

Section 7. That this act shall be in force and effect from and after the first day of November, nineteen hundred seventeen.

### CITY MARKET PROBLEMS.

One of the daily papers of Saginaw, the News, has been investigating the city market there and finds that the investment of about \$60,000 in a place where farm products may pass direct from farm to table is in fact rich picking ground for the hucksters, while the city consumers have no show. The market is called the "Hucksters' Delight." The hucksters come early, watch the growers like hawks as they come in, and then gobble up the good bargains as quick as a wink. "If the farmer is 'easy,'" says the newspaper man, "the peddlers will have him almost believing that he should pay them for taking his goods away. Unless one wishes to buy in large quantities and is willing to get into the scramble with the hucksters he might better stay at home and enjoy his 'beauty' sleep. Sometimes even quantities are not available as hucksters often order a day in advance. Class distinction is sharply drawn. The hucksters are the aristocracy, the growers belong to the middle class and the city consumers are common dugers who take the leavings."

Kent Co.

ALMOND GRIFFEN.



## Save the 1917 Apple Crop

**T**HIS year's apple crop calls for intelligent handling. The latest government reports indicate a crop of about 190,000,000 bushels. That is a little below normal. Good prices are assured for all honestly packed first quality apples, and also for honestly packed selected second grades, which government experts say can be put into storage. When the crop is big it does not pay to store second grades, but this year, despite the fact that we cannot ship our usual 2,000,000 barrels of apples abroad, because shipping space is precious, we should be able to get fair prices for all good apples at home.

Careless packing of poor quality fruit has always been one of the chief causes of market instability and unsatisfactory prices to the growers. This year the whole apple industry is co-operating to remove this market handicap. There has never been an apple year such as this one is going to be. Growers have never been able to get together and engage and finance a national educational campaign among consumers to increase apple consumption. This year the situation makes it necessary for the United States government, through the food administration, to conduct a consumer's campaign of publicity on behalf of the apple. This campaign will begin while the crop is being sent to market, and will probably continue until the last apple is eaten up late next spring. So the grower has three great incentives for grading, packing and storing this crop with especial care.

First. It is a good crop and calls for care.

Second. The government will encourage apple eating and apple storage and will discourage apple speculation that raises the price abnormally.

Third. We must eat up at home more than two million barrels of apples which would ordinarily be exported.

To get the best of the crop to the market in prime condition it must be picked carefully at the time of maturity and promptly cooled in temporary storage, and then skillfully graded and packed. Second grade fruit should not go into barrels or boxes. If it cannot be marketed in bulk in nearby consuming centers, then it should be worked up into by-products along with the culls.

There has been a gratifying improvement in apple marketing the past two or three years. Western apples are boxed to strictly honest standards by the great co-operative growers' organizations in Washington, Oregon, California, Idaho and Colorado. The eastern barrel apple has also been wonderfully improved in New York and other states. Because apples are honestly packed and give the best possible value for the money there is an increase in the consumer demand. Retail merchants who were formerly almost afraid to buy apples in barrels, because they were not sure of getting marketable values for their money, are now buying freely and in confidence. This good work makes it possible for the government to go further and encourage the use of apples as a war time food measure.

Because the bulk of the crop will be picked by volunteer workers this year, and put into common storage until the grower can find time to grade and pack, there will be an opportunity to give closer personal attention to the grading and packing than might be the case if the crop were handled as in peace times. For the grower who desires instructions in apple packing the Department of Agriculture at Washington has information in bulletin form, for pickers and packers that will be furnished free.

Winter apples may be kept in the

storage room in the basement of the house, in outdoor storage cellars, or in banks or pits. Conditions suitable for the keeping of potatoes answer fairly well for apples. They demand cool temperatures; in fact, they may be kept near the freezing point, without injury.

## Corn Prices

**T**HAT the unprecedentedly high price of corn is not due to abnormal holding of supplies by farmers is the belief of the U. S. Department of Agriculture. Investigations disclosed that farmers are holding only enough corn to insure their seed supply for next spring and to protect their live stock feeding interests until the production of a sufficient supply from the present crop is assured; and that the stocks in their hands are much lower than normally.

Among the conditions making for high corn prices, are shortage of the 1916 crop and the carry-over from 1915, increased exports, increase in the general level of prices, and the increased numbers of live stock on the farms. The 1916 corn crop, it is pointed out, was 400,000,000 bushels short of the 1915 crop, and stocks on farms on March 1, 1917, were 300,000,000 bushels short of the stocks on farms on the same date the preceding year. The exports of corn in the year ended June 30, 1917, were approximately seventy per cent greater than in the preceding year and about seven times greater than in the year ended June 30, 1914, the year preceding the war. The general level of prices, it is pointed out, has increased greatly during the last year, especially as regards food stuffs. Live stock in the United States has increased about three million head in the past three years, statistics of the department show, and so has helped to increase the demand for corn for feeding purposes.

## AN OLD-TIME COON HUNT.

(Continued from page 170).  
under hold. He was taller than me so he lifted me clear off the ground and tried to throw me sideways, but I landed on my feet and stuck right to him. Then he tried it again. As soon as I struck on my feet the second time, I wound my left leg around him, threw my weight against him and over he went on his back, with me on top of him.

We were right up again and the next time I purposely let him get the under hold, but before he could lift me up, I slipped my right hand on his right shoulder and by pushing my arm against his throat, shut off his wind, and forced him over on his back. Then he had enough.

The rest of the Indian boys refused to wrestle with me after that, so I put on my coat and got ready for the feast.

They raked the fire aside and lifted the stones from the roast coon and fished him out. The clay was peeled off, leaving the roasted meat nice and brown. It didn't take long to pull it to pieces and divide it around. Then I divided the corn-bread and each one took a piece. We salted the meat as we ate it, and I tell you it tasted mighty fine after our long tramp.

When we had finished eating we laid down around the fire and went to sleep. The next thing I knew it was broad daylight and I lit out for home carrying one of the coons on a stick over my shoulder.

"I just wish there were coons around here now," said Johnnie. "I'd like to climb up a tree after one."

"It's a long time since I tasted coon meat," replied grandpa. "But there's no chance for any more now."

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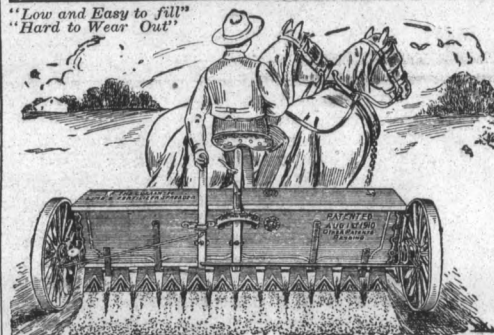
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See Page 185

Adv.



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# Markets.

## GRAINS AND SEEDS.

August 28, 1917.

**Wheat.**—Transactions in the wheat market the past week have been very small, as the trade has been waiting for the government to set the price on this year's crop. Buyers are merely taking sufficient quantities to satisfy their wants from day to day. The mills are working full time to supply the current demand, but are doing nothing toward putting in stores of flour. After the price has been fixed under the authority of the food control measure, it is expected that there will be a large movement of the grain. Reports on yields would justify the recent estimates. One year ago No. 2 red wheat sold on the local market at \$1.45½ per bushel. Last week's Detroit quotations were:

	No. 2 Red.	No. 1 White.
Wednesday .....	2.15	2.10
Thursday .....	2.15	2.10
Friday .....	2.15	2.10
Saturday .....	2.15	2.10
Monday .....	2.15	2.10
Tuesday .....	2.15	2.10

**Corn.**—The corn market is active. Prices here have worked higher the past week, while on Monday the Chicago market suffered a decline which was credited to the sale of a large block of October shipment by a Tennessee concern. The demand for the cereal is active and fairly large quantities are being sold. The new crop is improving and it now seems that the only danger is the likelihood of frosts before the grain has matured. Should these hold off, the American farmers will be able to market a large crop. One year ago No. 3 corn sold at Detroit for 88½¢ per bushel. Last week's local quotations were:

	No. 3 Mixed.	No. 3 Yellow.
Wednesday .....	1.81	1.82
Thursday .....	1.84	1.85
Friday .....	1.85	1.86
Saturday .....	1.89	1.90
Monday .....	1.94	1.95
Tuesday .....	1.96	1.98

Chicago.—December \$1.08 per bu; May \$1.05½.

**Oats.**—The interest taken in this grain by exporters has given the market support and a firm tone with prices holding strong. The cereal is being marketed quite freely, although in some sections farmers are too busy to deliver the grain. The visible supply decreased 951,000 bushels, against an increase of 5,821,000 bushels for the corresponding week of 1916. A year ago standard oats were quoted at 49¢ per bushel. Last week's Detroit quotations were:

	No. 3 Standard.	No. 3 White.
Wednesday .....	56	55
Thursday .....	56	55
Friday .....	56½	55½
Saturday .....	57½	56½
Monday .....	57	56
Tuesday .....	57½	56½

Chicago.—Sept. 53½¢; Dec. 53½¢.

**Rye.**—Exporters are in the market for rye, which has stimulated trading and maintained prices despite the harvesting of a good crop. Cash No. 2 is quoted at Detroit at \$1.75; Sept. \$1.72.

**Beans.**—This market is dull with the price steady at the recent decline. Cash beans are quoted at \$7.25; October \$6.50. A dull market prevails at Chicago, where offerings are small. Michigan pea beans, hand-picked, are quoted there at \$7.50@7.75; red kidneys \$5.75@6.

**Seeds.**—Prime red clover \$12; October \$13; alsike \$11.50; timothy \$3.90.

## FLOUR AND FEEDS.

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

**Feed.**—In 100-lb. sacks, jobbing lots are: Bran \$40; standard middlings \$45; fine middlings \$52; cracked corn \$75; coarse corn meal \$73; corn and oat chop \$60 per ton.

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

**Pittsburg.**—No. 1 timothy \$19.25@19.50 per ton; No. 2 timothy \$17@18; No. 1 light mixed \$16.75@17.25; No. 1 clover mixed \$15.50@16; No. 1 clover \$16@16.50.

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

## DAIRY AND POULTRY PRODUCTS.

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

**Elgin.**—Market firmer. Price based on sales 41¢.

**Chicago.**—There is a good trade in all grades and market is kept cleaned up quite closely. Demand is mainly to supply current wants. Creamery extras are quoted at 41½¢; extra firsts 41¢; firsts 39@40¼¢; packing stock 34@34½¢.

**Eggs.**—Offerings are falling short of requirements. Fresh firsts were quoted at 36@38¢.

**Chicago.**—Market has advanced for good stock. Fresh Michigan firsts in new cases sell for 36@37¢.

**Poultry.**—Market is firm. Spring chickens 27@28¢; Leghorns 23@25¢; hens 24@26¢; ducks 23@24¢; geese 16@17¢; spring geese 18¢.

**Chicago.**—The receipts are considerably larger, but the market held up well, considering the large supply. Fowls sell from 21@22¢; spring chickens 23¢; ducks 21¢; geese 14¢; spring geese 16¢.

## FRUITS AND VEGETABLES.

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

**Chicago.**—Currants \$1.50@1.75; blueberries \$3@3.50 per 16-qt. case; pears, Michigan Clapp's Favorite \$1.75@2 per case of six baskets; peaches \$1.25@2 per bushel for Elbertas; plums, Michigan 75¢@1 per 16-qt. case.

**Apples.**—At Detroit Harvest apples are quoted at \$5.75@6.50 per bbl. At Chicago Michigan Duchess sell for 75¢ @1 per bushel, or \$3.50@3.75 per bbl; Astrians 75@90¢ per bushel.

**Potatoes.**—Potatoes held steady and there is not the expected volume of receipts. Michigan-grown \$1.75 per bu. At Chicago home-grown potatoes sell for \$1.15@1.20 per bushel.

## WOOL.

Trading has been a little quiet the past week. Contracts with the government have not been completed. Prices rule firm, although the western producers have sold practically all of their clip, the eastern farmers are still holding on to a portion of their stock. In Boston fleeces sold last week at from 55@85¢ per pound with the trading on a small scale.

## GRAND RAPIDS.

Local millers are waiting for definite information from the government as to the price to be paid for wheat under the Hoover food control measure. They understand that the price will be \$2.10. The price here this week is \$2. Oats are off a little, being quoted at 70¢. Corn is \$1.90; rye and barley \$1.50. Beans are on a \$6.50 basis to farmers. Eggs are up one cent and are now quoted at 35¢, and creamery butter is one cent higher.

## DETROIT EASTERN MARKET.

The variety of stuff offered is smaller than for this date in former years, but the quantity is large and buyers showed up in such good numbers that growers are able to sell at good prices. Tomatoes are now selling around \$2.50 for good stock; potatoes \$1.60; beets \$1.90; carrots \$1.80; cabbage 40 @45¢; good apples \$2; cucumbers 75¢ and up, depending on size—picklers around 30¢ per hundred; string beans \$2.25; eggs 50¢.

## LIVE STOCK MARKETS.

August 27, 1917.

### Buffalo.

Receipts here today as follows: Cattle 238 cars; hogs 30 d. d.; sheep 12 d. d.; calves 1500 head.

With 238 cars of cattle here today the run consisted mostly of medium and common grades. There were no strictly corn-fed cattle here, the best landing up to \$13.25, but there were very few cattle good enough to go to New York and there were too many of the medium cattle for the trade. The market opened very slow and the bulk of the medium steers sold 25@50¢ lower, in some cases more. What few strictly good cows were here sold steady and the medium cows and commoner grades were slow and 10@25¢ lower. There was a good demand for all feeders and stock heifers and they sold fully steady to a shade stronger. There was a good demand for all grades of bulls and they sold strong. We look for a fair run of cattle here next Monday and a good trade on the best grades, but a slow market on all the medium and common kinds, as they are coming quite plentiful.

Receipts of hogs were rather light today, demand just fair and the general market about steady with Saturday's best time, bulk of the sales at \$17.50@17.60, with a few selected heavy weights up to \$17.85; pigs and lights \$16@16.50; roughs \$16@16.25; stags \$13@14. Everything sold and the outlook is strong for next few days.

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

Lambs \$15@16; yearlings \$12.50@14; cull to common \$11@15; wethers \$10@10.75; ewes \$9.50@10.25; bucks \$7@8; best calves \$16@16.25; common and light \$13.50@15.50; heavy \$12@15; grassers \$6@8.50.

### Chicago.

August 27, 1917.

### Cattle. Hogs. Sheep.

Receipts today..26,000 14,000 9,000  
Same day 1916..12,868 36,277 17,722  
Last week.....59,085 66,106 57,153  
Same wk 1916..65,152 132,307 101,658  
Shipments from here last week embraced 12,643 cattle, 7,947 hogs and 15,017 sheep, comparing with 9,046 cattle, 15,915 hogs and 7,751 sheep a week earlier. Hogs received averaged 230 pounds.

Fat cattle were active today and averaged around 25¢ higher, while prime beefs sold 50@75¢ higher, with few here. The best steers sold at \$16@16.30, among the sales being 18 head of steers averaging around 1200 lbs. at \$16 and two loads of yearlings averaging about 900 lbs. at \$15.50. Hogs sold as much as 25¢ higher on a meager supply, the top being \$17.65. The best range feeding lambs brought \$16.90@17, the top being 25¢ higher.

Cattle made fresh high records for the best class of fairly heavy corn-fed lots and for prime little yearlings last week, these forming too small a portion of the offerings, while they were in strong demand. Prior to last week \$15 was the top price, with few selling near that figure, but last Wednesday there was quite a long list of sales at \$15, while the best beefs with much weight brought \$15.25 and \$15.50, with a sale of 49 prime yearlings averaging from 895 to 929 lbs. at \$15.10. Sixty-seven steers averaging 1364 lbs. brought \$15.50 and 68 head averaging but 1288 lbs. brought \$15.25. Cattle coming under the head of choice sold at \$14.50 and upward, with a good class purchased at \$13.50@14.45, a medium class at \$12@13.45, fair to pretty good light weight killers at \$9.50 and upward, and sales all the way down to \$7.25@8.50 for scattering lots of inferior little steers. Choice yearlings were higher than ever, selling at \$14.50@15.10, with sales down to \$10@11 for the commoner grades of these cattle. The general cattle market started off on Monday with receipts of 31,207 head and general reductions of 25@50¢, except for fat lots, the packers refusing to buy except on their own terms. By Wednesday, everything sold far higher, advances ranging from 25 @75¢ above the low spot on Monday. Steers selling at \$13.50@15 were 50¢ higher; the \$11.75@13.45 kinds were 60@75¢ higher, and the cheaper grades were 25¢ higher. Western range cattle were in moderate supply and in demand at \$7@13, going mostly around \$9@10.35, few going above \$11. Native cows and heifers sold for the butcher trade at \$6.80@10.50 for the former and at \$6@12.50 for the latter, with cutters at \$5.70@6.75, canners at \$5.10@5.65 and bulls at \$5.50@10. Calves were boomed to \$14.75@16 for light vealers, heavies selling around \$6@11. Stockers sold fairly at \$6.50@8.75 and feeders at \$7.75@9.75, declining and then advancing.

Highly spectacular hog markets were experienced last week, with advances of as much as 50¢@1 per 100 lbs. in a single day, accompanied with lively buying, the receipts being inadequate, according to the statements of buyers. Later on the demand flattened out badly, and prices started to decline as rapidly as they had advanced before, it being understood that certain packing interests had disposed of large holdings of provisions at higher prices. Quality of the offerings was nothing to brag about, and choice corn-fed lots sold readily at a good premium. Shippers took a fair share of the hogs, although decidedly fewer than a week earlier. After prime hogs had advanced to \$20, the highest price ever paid, prices broke to \$15.65@17.40, few going above \$17.25, while pigs brought \$11@14.75.

Lambs were urgently sought after last week by feeders, who paid higher prices than killers were willing to, the best feeders from the ranges going at \$16.75 per 100 lbs. Owing to the big feeder demand, there was a wide difference in prices between natives and range lambs. Lamb supplies were only moderate, and supplies of yearlings and sheep were very small. Shippers made much larger purchases than a

week earlier, and most native lambs advanced 50@75¢, while range lambs moved up 25¢. Native sheep were strong to 25¢ higher, and some range yearlings advanced 50¢, while prime breeding ewes sold \$1 higher. Prices closed as follows: Lambs \$11.25@16.90; feeding lambs \$16@16.75; yearlings \$10@13.25; wethers \$9.50@11.50; ewes \$4.50@10; breeding ewes \$9@16; bucks \$7@8.

Horses were in meager supply and in poor demand last week at mostly unchanged prices, the principal activity being in horses for the British army. It was stated that the army inspectors were more rigid than heretofore in making examinations. Inferior to good farm chunks were salable at \$60@150, drafters at \$185@265 and desirable drivers at \$125@200.

## LIVE STOCK NEWS.

Owing to the enormous underproduction of sheep in the United States, prices for lambs, yearlings, wethers and ewes are far higher than in past years, with offerings on the markets of the country far too small to meet trade requirements. As for feeding lambs from the distant range country, they are outselling the best killing lambs much of the time, country buyers of these taking away many flocks that the packers would be glad to get. Most of the feeding lambs offered on the Chicago market average in weight around 60 pounds, while the demand is mainly for feeders weighing not more than 55 pounds. There is also a lively demand for breeding ewes, and prime yearlings of this class are high sellers, most sheepmen refusing to part with their ewe lambs. A year ago the best lambs were selling for \$11.25; two years ago for \$8.85, and six years ago for \$7.

A fine large barley crop in Tama county, Iowa, comes in handy this year, as many farmers have sold their corn and will utilize their new crop of barley for feeding their hogs. Barley is especially good for feeding to young shoats, when mixed with oats. The barley crop of that region is running from forty to eighty bushels to the acre, and the oat crop runs from fifty to one hundred bushels. A few cases of hog cholera have caused farmers to vaccinate their hogs.

Victor Scott, of Linn county, Ill., widely known as a successful stock feeder, was in the Chicago market recently with a shipment of 106 head of mixed Shorthorn steers which averaged 1360 pounds and brought \$14.25 per 100 pounds. They were fed corn on pasture. They were wintered on shock corn and hay, with a little corn up to February, when they were put on one-third of a feed of corn. After the first of June the cattle were, while on grass, fed corn in self-feeders. Mr. Scott has 300 hogs which are being fed, and he plans to lay in more cattle, as he has still 01,000 bushels of corn left in his cribs. Live stock in that locality is about all marketed. Corn is late, but is coming along well, and a late frost is all that seems needed to make a good crop.

A report made by the Cudahy Packing Company has been compiled for the federal trade commission. It says the beef requirements of the United States annually are not less than fourteen million head, and adds: "If, in addition to the present method and supplies, each of the 6,000,000 farms of the United States would produce even a few head of finished live stock of good grade annually, the entire meat industry would be stabilized and the future supply assured."

The federal administration is regulating the distribution of food and prices, having started with wheat, and later on the food commission will take up other foods. Controller Hoover warns the people that the world faces a meat famine as well as an inadequate food supply and he cites figures showing that cattle, hog and sheep supplies are dwindling rapidly under the extraordinary requirements brought about by war conditions and the enforced European curtailment of crops and live stock, while live stock supplies in the allied countries are likely to be wiped out entirely. Mr. Hoover makes the prediction that fabulously high prices are going to prevail for all descriptions of meats, both in the United States and Europe, during the remainder of the war, as well as for many years thereafter. He adds that these high prices will take in important animal products, such as lard, butter, cheese, fats, oils (wool and leather), and he advocates government control of our meat exports. Meanwhile strong efforts are being made to stimulate the wheat area, as well as the acreage of other grains and vegetables, and attempts are going to be made to grow a billion bushels of wheat next year. Whether it is possible to materially increase our grain and other farm products depends very much on the ability of farmers to ob-



tain sufficient farm workers, their present scarcity and the high wages demanded being serious obstacles. In some parts of the United States extensive drafting of farmer boys for the army promises to cut down much needed farm labor.

The sensational boom in hog prices has taken most people by surprise, but the last crop of hogs was hurried on the market so prematurely, because of the scarcity and dearth of corn in many farming districts, that comparatively few matured hogs are left. What the future may bring forth is a matter of speculation, but normal prices now seem to be a long way off. That there is a real shortage of hogs ready for marketing is an indisputable fact, and probably the only thing that can cause any further considerable break in prices is lessened consumption of fresh and cured hog products. These are selling extremely high, having shared in the advances in the raw material. Hogs moving marketward are largely ordinary in quality, being grassy, and evidently most of them have not been pampered with corn. This results in an extremely wide spread in prices, with a much larger demand for prime medium weight and light hogs for shipment to eastern packing points than a few weeks ago, these offerings selling at a liberal premium. Late Chicago receipts have averaged in weight 235 lbs., the same average as a year ago. The average was 248 lbs. two years ago, 243 lbs. three years ago and 235 lbs. four years ago. Stocks of provisions held in western warehouses are quite large. Unfortunately, many farmers were tempted into marketing their brood sows months ago by the high prices prevailing, and now they wish they had them back, realizing their value at a time when it is extremely important to materially increase the hog supply.

Because of the predominance of grassy cattle in the markets of the country, including such important primary markets as Chicago and Kansas City, such offerings are quick to sell off sharply on days of liberal receipts, while the meager offerings of choice corn-fed cattle, whether heavy steers or fat little yearlings, are bringing higher prices than were ever paid before in the history of the cattle industry. On some days of late poorly-fattened steers, cows, heifers and bulls have declined from 25 to 50 cents per 100 lbs., the packers holding off and refusing to make purchases except on their own terms. Nearly all of the choice, well-bred cattle in feeding districts have been marketed, and there is no telling where the advance in prices for such stock will end. Of course, it was the scarcity and dearth of corn that caused their early marketing. The demand for stockers and feeders this summer has been poor as a rule, although at times of late there has been good buying. There are many farmers who are disposed to move slowly in loading up with cattle for finishing, preferring to wait and see how the corn crop turns out; but if it proves a big crop, it is certain that owners of feeding cattle will be slow in disposing of them, while much higher prices for well-bred stock cattle may be expected.

#### ADDITIONAL VETERINARY.

**Unhealthy Skin.**—I have a sow that had twelve pigs; since then a few of them have died from what seems to be a diseased condition of their skin. The first symptom is a darkened condition of the skin about nose, neck and shoulders and changed to a brown color. There are a few black scabs on head and the eyes are some sore. Six of the pigs are in fairly good condition, but two of them are diseased. H. R., Howard, City, Mich.—Apply one part oxide of zinc and nine parts of vaseline to sore parts of skin three times a week, and they will get well.

**Grubs in Skin.**—What is the cause of grubs in cattle and is there any way to prevent this ailment, and do horses and sheep have this same grub? Old Subscriber., Owosso, Mich.—This grub is the larvae of a fly called Hypoderma Lineata whose larva in the skin of cattle are commonly known as warbles, and are occasionally found in little sacks beneath the skin of horses. Sheep as a rule are not troubled with them. In districts where they exist the grub should be pressed out of the skin during the winter and destroyed. They develop from the egg of the ox gad-fly. The eggs are deposited on the legs, licked off and remain in the mouth for a time, then make their way into the cellular tissue beneath the skin of the back and usually remain there until spring. These grubs annoy cattle and they damage the hide by boring holes in it. Wiping the legs and parts of the body where the flies deposit their eggs, with kerosene occasionally will pretty much prevent cattle from having them.

#### THIS IS THE LAST EDITION.

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

#### DETROIT LIVE STOCK MARKET.

##### Thursday's Market.

August 29, 1917.  
Cattle.

Receipts 2860. Market closed 15¢ 25c lower than last week. There were several good lots in the receipts.

Best heavy steers \$10@11.25; best handy weight butcher steers \$8.50@9.50; mixed steers and heifers \$8@9; handy light butchers \$7@8; light butchers \$6.50@7.50; best cows \$7.25@8; butcher cows \$6.50@7; common cows \$5.50@6; canners \$4.50@5.25; best heavy bulls \$7.50@8; bologna bulls \$6.50@7; stock bulls \$5.50@6; feeders \$7.50@8.50; stockers \$6@7.50; milkers and springers \$4@9.5.

Bishop, B. & H. sold Parker, W. & Co. 20 steers av 1033 at \$11.25, 8 do av 944 at \$9; to Breitenbeck 20 do av 810 at \$8; to Hammond, S. & Co. 30 do av 624 at \$7.20; to Walk 20 butchers av 522 at \$6.35, 10 do av 547 at \$6.25; to Sullivan P. Co. 2 cows av 960 at \$6.25, 3 steers av 1110 at \$10.25, 2 do av 590 at \$6, 9 butchers av 866 at \$7.50, 10 do av 768 at \$7.40, 2 cows av 995 at \$6; to Mich. B. Co. 3 bulls av 1050 at \$7.50, 1 do wgh 1450 at \$7.50, 2 steers av 900 at \$8, 8 do av 915 at \$9, 25 do av 1000 at \$9.50, 16 do av 850 at \$8.85, 12 do av 776 at \$8, 11 do av 980 at \$9.50, 6 cows av 1640 at \$7.75, 1 bull wgh 1120 at \$7.50, 2 cows av 1060 at \$7.50, 9 steers av 902 at \$9; to Burnfeldt 4 cows av 1167 at \$8; to Ratner 5 steers av 780 at \$7.50, 4 do av 732 at \$7.40, 1 bull wgh 1170 at \$8; to Parker, W. & Co. 5 steers av 1020 at \$9, 27 do av 700 at \$7.20, 8 do av 750 at \$7.25, 6 do av 655 at \$6.75; to Mich. B. Co. 4 bulls av 955 at \$6; to Sullivan P. Co. 17 steers av 994 at \$9, 10 do av 788 at \$8.50, 3 do av 783 at \$7; to Fineman 9 butchers av 670 at \$6.25.

Sandel, S., B. & G. sold Newton P. Co. 2 bulls av 1225 at \$7.50, 2 do av 1210 at \$7.50, 1 do wgh 1150 at \$8.25, 2 heifers av 685 at \$7, 3 do av 813 at \$8; to Applebaum 13 do av 622 at \$6.35; to Kamman B. Co. 23 do av 980 at \$9.10; to Benz 5 feeders av 748 at \$7.25, 5 stockers av 530 at \$6.75; to Thompson 5 steers av 826 at \$7.75; to Cohen 3 cows av 970 at \$6.50; to Goose 8 butchers av 763 at \$6.90; to Thompson 16 steers av 1062 at \$9.25, 6 do av 870 at \$8, 1 cow wgh 1100 at \$7; to Mindick Co. 2 do av 1235 at \$7.75, 1 do wgh 1230 at \$6.50, 1 do wgh 1100 at \$7.25; to Newton P. Co. 1 steer wgh 990 at \$9.50, 4 do av 892 at \$7.75, 2 cows av 725 at \$6, 2 heifers av 675 at \$5.35, 6 cows av 891 at \$6.85; to Sullivan P. Co. 5 butchers av 794 at \$7; to Hammond, S. & Co. 26 do av 840 at \$8.75; to Thompson 31 steers av 890 at \$9, 8 do av 635 at \$7.85, 12 do av 970 at \$9.25; to Rattkowsky 8 do av 531 at \$6.60; to Benz 7 stockers av 680 at \$7.50; to Mich. B. Co. 3 steers av 810 at \$9.25, 9 do av 951 at \$7.50, 6 do av 611 at \$6.50; to Mason B. Co. 9 do av 922 at \$8.25.

##### Veal Calves.

Receipts 567. Market steady. Best \$15.50@16; others \$7@14.

Sandel, S., B. & G. sold Sullivan P. Co. 5 av 160 at \$14.75; to Thompson 2 av 185 at \$12, 4 av 155 at \$15.75, 1 wgh 180 at \$15.75, 3 av 165 at \$15.50, 2 av 230 at \$11, 8 av 135 at \$15.85; to Nagle P. Co. 2 av 200 at \$11, 4 av 155 at \$15; to Sullivan P. Co. 8 av 150 at \$15.50, 5 av 160 at \$15.50; to Parker, W. & Co. 4 av 145 at \$11, 6 av 130 at \$14.75, 2 av 145 at \$14.50.

McMullen, K. & J. sold Shapiro 6 av 190 at \$15, 4 av 135 at \$15, 1 wgh 190 at \$15.75; to Ratner 1 wgh 160 at \$15, 2 av 180 at \$15.50; to Mich. B. Co. 9 av 160 at \$15.75; to Parker, W. & Co. 3 av 180 at \$15.50, 3 av 155 at \$15, 25 av 170 at \$15.

Erwin, S. & J. sold Thompson 2 av 175 at \$16, 18 av 170 at \$16, 4 av 185 at \$15.25, 3 av 155 at \$15.25; to Mich. B. Co. 5 av 185 at \$14; to Sullivan P. Co. 5 av 140 at \$15; to Thompson 4 av 185 at \$16.

##### Sheep and Lambs.

Receipts 3156. Market is steady at Tuesday's close. Best lambs \$15.25@15.50; fair lambs \$13.50@14; light to common lambs \$12@13; fair to good sheep \$8.50@9; culls and common \$5.50@7.

McMullen, K. & J. sold Swift & Co. 105 lambs av 80 at \$15; to Pontiac P. Co. 14 do av 70 at \$15, 16 sheep av 120 at \$8; to Coe 42 lambs av 55 at \$13.25.

Erwin, S. & J. sold Sullivan P. Co. 45 lambs av 72 at \$14.25, 5 do av 50 at \$12, 42 do av 73 at \$15.50; to Coe 25 do av 52 at \$13; to Hammond, S. & Co. 12 do av 75 at \$15.25.

##### Hogs.

Receipts 1126. Pigs steady; others 25c higher. Hogs \$17.25@18.25; pigs \$15@15.50.

## Gombault's Caustic Balsam

The Worlds Greatest and Surest

Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS I

#### SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER,  
WIND PUFFS,  
THRUSH,  
DIPHTHERIA,  
SKIN DISEASES,  
RINGBONE,  
PINK EYE,  
SWEENEY,  
BONY TUMORS,  
LAMENESS FROM  
SPAVIN,  
QUARTER CRACKS,  
SCRATCHES,  
POLL EVIL,  
PARASITES.

#### REMOVES

BUNCHES or  
BLEMISHES,  
SPLINTS,  
CAPPED HOCK,  
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard  
VETERINARY REMEDY

Always Reliable. Sure in Results.



None genuine without the signature of  
The Lawrence-Williams Co.  
Sole Importers & Proprietors for the U.S. & CANADA. CLEVELAND, OH.

#### CAUSTIC BALSAM IS THE BEST

Your Gombault's Caustic Balsam is the best liniment I know of. I have bought four bottles for my neighbors, and two for myself. I have cured a sweened horse with the Balsam. —Louis Miller, Sharon, Wis.

#### GOMBALTS CAUSTIC BALSAM IS EXCELLENT.

Having read an advertisement in Wisconsin Agriculturist about your Gombault's Caustic Balsam, I have tried some of it and think it excellent. —J. M. Woradowsky, Big Flats, Wis.

Sole Agents for the United States and Canada.  
**The Lawrence-Williams Co.**  
TORONTO, ONT. CLEVELAND, OHIO.

## WANTED

We are in the market for

Railroad Ties  
Piling and Lumber

also

Standing Timber

Write, call on or phone

**McCANDLESS BROTHERS**

DETROIT, MICH.

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## SMUTENE KILLS SMUT

Smut on oats, rye, barley, etc. ruins both quality and quantity—kills profits. Prevent smut by using Smutene. Does the work every time. Saves you dollars. ½ pt. bottle, enough for 20 bu. of seed, 60c. Pint bottle, enough for 40 bu. of seed, \$1.00. Get Smutene from your dealer or direct from us.

Dr. Lape's Medicated Salt kills worms in horses, cattle, hogs, sheep. Great conditioner. Stock puts on more flesh with no more feed. 25 lbs., \$1.50; 50 lbs., \$2.50; 100 lbs., \$4.00.

Dr. Lape's Poultry Tonic prevents disease—increases laying. 1½ lb. pkg. 25c; 5 lb. 75c; 10 lb. pkg. \$1.00.

Dr. Lape's Lice Killer prevents and kills lice on big or little chickens, 1 lb. can 25c. Sore neck on horses relieved quickly with Dr. Lape's Neverfale Healing Powder. Price 50c.

Dr. Lape's Fly and Insect Destroyer drives pests away from cows. Contented cows give more milk. 1 gal. \$1.00.

Try Dr. Lape's Remedies and be convinced. All are guaranteed. Money back if not satisfactory. Ask your dealer. Order direct from us if not at your dealer's.

**Dr. Lape Veterinary Co., Inc.**  
Adrain, Mich.

## Important Announcement

See Page 185

Adv.



**HAY EGGS**

Ship To The Old Reliable House  
**Daniel McCaffrey's Sons,**  
623-625 Wabash Bldg., Pittsburgh Pa.

**FRUIT**  
We want your entire crop. Write for rubber stamp. The E. L. Richmond Co., Detroit, Michigan.



## POULTRY.

## Homestead Farms

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

## 300 Laying Yearling White Leghorn Hens

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

## Yearling Hens

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

## Yearling Cocks and Cockerels

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

## Geese and Ducks

50 fine Young White Pekin Ducks.  
30 Young Toulouse Geese.

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

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

We are now making plans for a more extensive sale of Day-Old Chicks next Spring.

HOMESTEAD FARMS, Bloomingdale, Mich.

## 2000 - Pullets - 2000

## "200 Egg" Pedigree White Leghorns

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

MICHIGAN POULTRY FARM, Lansing, Michigan

"Michigan's Largest Poultry Farm"

## Yearling Hens For Breeders

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

JOHN'S big beautiful hen-hatched Barred Rocks, good layers. Breeding pens (5 birds) \$10 to \$20. Eggs \$30, \$2.50; 100, \$7. Circulars. Photo. John Norton, Clare, Mich.

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

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

**Ferris White Leghorns**

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

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

**Fowlers Buff Rocks.** Eggs one half price for bal. of season. \$1.75 for 15; \$1.50 for 30; \$2.00 for 50; \$3.50 for 100. R. B. FOWLER, Hartford, Mich.

**Buff Leghorns.** August sale 25 hens one dollar each. 16 two dollar hens and cock bird for \$20.00. Dr. William A. Smith, Petersburg, Mich.

**Laybitt S. C. W. Leghorns** Large, great layers. Pure breeding hens now. Everfresh Egg Farm, Ionia, Mich.

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

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

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

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

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

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

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

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

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

**S. C. W. Leghorns.** April Hatched. Standard Bred each. White Line Poultry Farm, Hillsdale, Mich.

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

## DOGS

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

When writing to advertisers please mention the Michigan Farmer.

## A Practical Two Story Chicken House

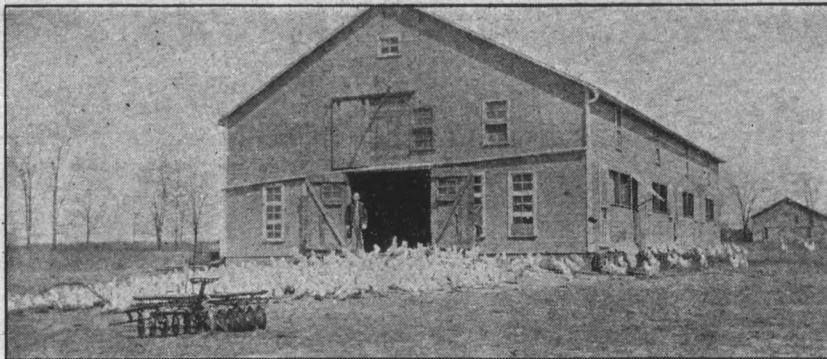
MANY failures in the poultry business have been due to improper construction of houses; not giving the proper attention to labor-saving devices, fundamental principles of construction, and cost per bird, etc.

As a poultryman, I have traveled and worked on several large plants, and had good opportunities to observe different houses, and have designed a house in which I have tried to use the many points taught by experience and observation. After one year's use, we

do not get the direct heat from the roof. The birds like to go upstairs on the runways. Principles of construction are: Sunlight can hit all parts of the main floor at the same time during the day. Can be ventilated and kept cooler than the average house, as we have sliding doors of the east and west ends, and adjustable curtains in the Cornell front on the south side.

## House is Cool.

We do not get the direct heat from the roof. During the 100 degree weather of last summer it was very cool, and



A Convenient House for 100 Hens.

thought enough of it to build another of the same type.

I will describe the building carefully so that others may be able to remodel their present house, basement barn, or some outbuilding so as to have a house of this type at little expense.

The house has a capacity of 1000 birds and cost \$1,400 complete. It is two stories high and 35x70 feet in size, the first floor being used as a scratching pen, with a roosting room 18 feet wide on the second floor, and remainder of loft for storage.

## Economical to Build.

Cost of construction on most farms is \$2.00 per bird, and up, while with this house it is only \$1.40. We also have a large storage room which does away with the expense of a building for feed and litter. Also have a watering system of cistern with leader pipes from roof, with practically no expense for maintenance.

One man can easily take care of two of these houses in winter, and three in summer. Can feed, water and gather eggs in half an hour, or two hours daily for chores. Three hours per week for cleaning droppings; litter can be removed, spread on field, and replaced with new in one day by two men and a team.

Features which enable us to do this are: House being wide, work is centrally located, which saves steps, and is done quicker than in a long narrow house. Nests are along the north side, and have springs on doors, making it unnecessary for a man to stop to close door.

Water is handy in cistern. We located it on the inside in new house so as to help in filling in foundation. Grain is kept on the second floor in bins with chutes to main floor.

## The Roosting Room.

We can drive through this building with team, thus making it unnecessary to handle litter twice. Also have trap doors in floors of storage and roosting room.

Roosting room is 18x70 feet, and is seven feet high. Have three sets of roosts, four perches wide, the entire length of room, with two aisles between, to avoid crowding, and enable us to handle the birds conveniently. Have eight windows, and ventilator entire length in rear.

We use sash with cleats as wind-buffers for windows to open against, so as to admit light, and avoid draft.

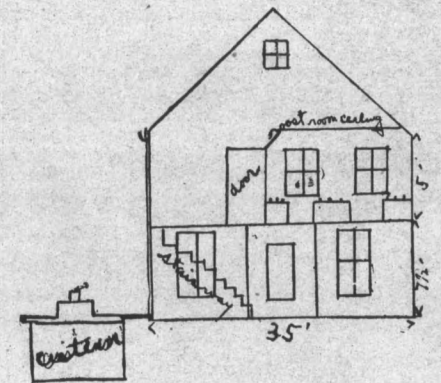
We have found the room to work nicely, especially in zero weather, when we keep the birds up there, feeding them in the litter, until the main floor warms up.

In hot weather the room is cooler than the ordinary shed roof house, as

the birds laid twenty per cent more than those in our Wood's semi-monitor type house.

We have two large dry mash hoppers holding half a ton each, and wet mash troughs hinged between posts.

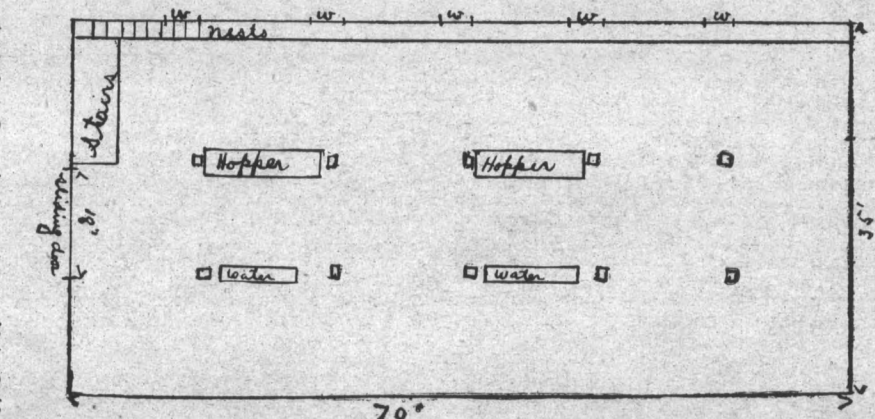
We use sand on the first floor and shredded cornstalks for litter. We ma-



End View of House.

chine husk and shred the stalks blowing them up in the loft. We like the stalks better than straw as they do not break up so quickly or mat, and are not so dusty. We feed the corn on the cob, making the hens shell it.

The birds are happy, contented, and lay well. We did not get them housed before December and the averaged 120



Ground Plan of Coop.

eggs to September. They have full range in cultivated fields.

Ingham Co.

FRANK DUBOIS.

## PURCHASING BREEDING STOCK.

In purchasing new blood for the farm flock or establishing a flock of pure-bred birds the fall season is the right time. This year feed is high and breeders are selling many birds that they might keep in other seasons. The price of poultry is very good and the prospects for continued high prices will not insure any saving to the poultry breeder who waits to purchase breeding stock instead of doing it now.

Many fine flocks are established from sittings of eggs purchased in the spring, but eggs will probably be higher than usual next spring. Frequently a pen of fine birds can be purchased for the price of a few sittings of eggs and the cost of keeping them over winter will be much less than their value in the spring and the farmer will then have the mature breeding stock as well as the eggs they will produce during the early spring breeding season and afterward.

Many farm flocks suffer from careless inbreeding and the birds would be much more profitable if a few vigorous cockerels were added to the flock. They must be purchased in the fall. With the high prices prevailing for feed, experienced breeders will not hold a surplus of cockerels over winter unless they are fairly sure of receiving high prices for them in the spring. Strong vigorous birds can be purchased now at a reasonable price and they will be a profitable investment.

The large poultry farms cull wisely and extensively and usually offer many birds for sale in the fall. A few of their surplus birds can be purchased to advantage for establishing a flock but some judgment is necessary in buying such birds. A large flock of culls will never be very profitable and unless the buyer is a good estimator of poultry values he should not attempt to purchase large flocks of any breeder's surplus. It pays better to buy a few birds of quality and pay a fair price for them. The original flock can then be bred in the spring and increased to a large flock in a few years. It is almost impossible for the farmer to build up a fine flock of birds in one, or even two years. Quality birds are not sold at utility prices in flocks of hundreds but they can be picked up in small numbers and large flocks can be produced on the home farm.

Ingham Co.

R. G. KIRBY.

## A DROPSICAL TROUBLE.

What is the cause of the swelling of the heads of hens? It shows first under the bill, like a watery sack on front of neck, enlarging until it swells the ear lobes and around the eyes and hen is unable to open her mouth to pick up her food. Otherwise, the hens seem bright-eyed and lively, the droppings are normal. I feed sour milk in the morning and wheat at night, while through the day they run in clover. Also, we find several very dark egg yolks in fresh eggs, which I have never seen the like of before. What would be the cause of it?

Emmet Co.

Mrs. V. H.

The disease your hens have is ap-

parently a new one and the poultry experts know little of it. It is a disease which has quite seriously attacked ducks this year and from appearances I judge that it is of a dropsical nature.

The dark yolked eggs are the result of a sudden change of feed to feed that contains considerable sulphur. Probably you have given your hens access to rape or some plant of the cabbage family. Another cause of such eggs is ovarian trouble, but usually in such cases the yolk is nearly black. If the trouble is ovarian it rarely pays to treat the hen, but a change of feed will correct the trouble if the feed is the cause.



## Farmers' Clubs

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

### Associational Motto:

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

### IMPROVING THE CLUB'S BUSINESS OPPORTUNITIES.

While there is no question but that the Farmers' Clubs of Michigan have been most successful from the standpoint of a social organization, they have not improved the business opportunities which have laid right at hand in very many instances. These business opportunities are better at the present time than ever before. With agriculture more profitable than at any previous time within the memory of the present generation, and with the difficulties encountered in the successful conduct of the business correspondingly great, the opportunity offered for community business co-operation through the medium of such an organization as the local Farmers' Club is correspondingly great.

The Farmers' Club offers an excellent unit for the formation of co-operative organizations, such as live stock shippers' associations which have been very successful in various parts of the state, and which have been promoted by one or two Clubs in the state among the farmers of their localities. The Farmers' Club is also a suitable unit for the securing and trying of pure-bred seed by the members, and the conducting of demonstrations which will be of business value to the members. In this connection the county agent should be called upon for assistance as may be needed.

There could be no better agency than the Farmers' Club for promotion work in the organization of a Farm Loan Association through which members might secure the advantages of federal rural credit. Important drainage operations could also be promoted through the same agency. In fact, there are hundreds of ways in which the local Farmers' Club can become one of great business value to its members, and there should be a general effort toward the development of these local organizations along this line.

Oakland Co. A. R. FARMER.

### CENTRAL MICHIGAN FARMERS' CLUB RALLY.

The rally of the Farmers' Clubs of Central Michigan was held at the Agricultural College on Wednesday, August 15. While there was a fairly good attendance of Club members within driving distance, the crowd was not as large as at the first of these meetings held last year, owing to conflicting dates of other Club events.

The meeting was held on the College picnic ground, and addresses were delivered in the afternoon by Hon. James N. McBride, State Market Director and Hon. Jason Woodman, long identified with the work of farm organizations in this state. Altogether the meeting was voted a successful and beneficial event by those who participated in it.

### CLUB DISCUSSIONS.

**Young People's Day.**—The regular August meeting of the Howell Farmers' Club was held August 2 at the home of Mr. and Mrs. Howard Reed. This was Young People's Day, and the young people of the Club furnished the major part of the program. The exercises were opened by the Club singing "The Star Spangled Banner," after which a number of literary and musical numbers were rendered, the subjects having a patriotic trend. The question box was the main feature of the program, eight questions being discussed, many of them pertaining to phases of the war. Following the completion of the program the Club adjourned to meet the first Thursday in September at a place to be designated later.—Mrs. R. R. Smith, Cor. Sec.

## Grange.

### STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.  
Overseer—C. H. Bramble, Tecumseh.  
Lecturer—Dora H. Stockman, Lansing.  
Secretary—Jennie Buell, Ann Arbor.  
Treasurer—Frank Coward, Bronson.  
Executive Committee.—Jas. Helme, Adrian; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby; Wm. H. Welsh, Sault Ste Marie; N. P. Hull, Dimondale; Burr Lincoln, Harbor Beach.

### FREDONIA GRANGE, No. 1.

This Grange, organized by Mr. Kelley and A. S. Moss, April 16, 1868, at Fredonia, Chautauqua county, New York, was the first in the world whose members paid initiation fees; it was in fact, the real foundation of the Order. There were fifteen charter members: A. S. Moss, U. E. Dodge, D. Fairbanks, H. Stiles, W. McKinstry and son, Louis McKinstry, W. H. Stephens, A. P. Bond, Wm. Risley, M. S. Woodford, J. J. Parker, T. S. Hubbard, J. F. Wellman, N. G. Butts, and Ira Porter. The original charter of Fredonia Grange and the minutes of the meetings from April 16, 1868, are still in the possession of the Grange.

On December 16, 1868, the first class of women (twenty-one members) was instructed in the degree work. Thus the Grange was probably the first organization to receive women into membership on equal terms with men, and it has always stood for their equality.

Fredonia Grange has had its ups and downs; at the time of its formation the country was sparsely settled, the roads were poor, and it was difficult to maintain interest in Grange work among the farmers. So it happened that many of its early members were merchants and people of various occupations. Grange development was so wide-spread and rapid that it attracted to its membership politicians and business men who had axes to grind. For this reason during its early years Fredonia Grange barely held its own, and at one time nearly surrendered its charter.

But in 1878, Ira Porter, J. J. Parker, U. E. Dodge, and Louis McKinstry, four of the charter members, made a united effort to awaken the interest of the farmers of the surrounding country and gradually brought them into closer touch with the people of the village. By selecting officers of vim our Grange has since grown to an active membership of nearly 700.

A few years ago it was foreseen that it would soon be impossible to rent any place in Fredonia suitable for the accommodation of our average attendance, and a lot on Main street was bought for \$2,000. The Grange had enough to pay for it in full, and raised upwards of \$1,600 more, mostly by the help of the younger members in providing entertainments such as amateur plays, literary programs and competitive exhibits at the county fairs. Personal canvas of the members resulted in \$3,400 pledged in sums ranging from \$1 to \$100. This gave a guarantee fund of \$5,400 cash with which to start the building. The contract was let in parts, thereby saving \$600 under the bids submitted for the job as a whole. The total cost of the hall, including the lot, was above \$13,000. To make up the amount lacking, the trustees were authorized to place a non-interest bearing mortgage of \$6,500 on the property as security, for an issue of certificates of indebtedness, having a face value ranging from \$50 to \$500 and bearing five per cent interest. These certificates were oversubscribed by the members and are payable at the option of the Grange. The Grange leases the building to outside orders and for various social functions, thus deriving revenue to help liquidate the indebtedness.

The hall is near the trolley station, and is surrounded by valuable business property. It has an overground basement which, with one story, gives it a very comfortable appearance. The building is brick, forty feet wide and ninety feet long, on a sixty-foot lot. The basement contains dining-hall, kitchen and men's parlor. On dedication day, January 8, 1916, over 600 people were fed quickly with minimum labor. The upper floor contains the assembly hall, ante-room, cupboards for regalia, and ladies' parlor. The parlor was furnished in a very tasteful and comfortable manner by Mrs. R. W. Wright in memory of her father, U. E. Dodge, the first master of Fredonia range. Hon. John Leo Sullivan, a former member of the assembly, donated 100 volumes of agricultural books.

# TRY ONE in YOUR Ford



Select No. 1 cylinder in any Ford as the one that bears the brunt of possible fouling—

The one that is up against the annoying and costly flooding with oil—

Put a SPLITDORF Plug in it as a TEST—

You'll want SPLITDORF Plugs in the other cylinders too, when you see the difference in the firing and when you realize how the imported India ruby mica core overcomes all trouble through cracked porcelains.

\$1 each, wherever motor accessories are sold.

SPLITDORF ELECTRICAL CO., Newark, N. J.

## SPLITDORF

### SPARK PLUGS

## Feed the Fighters! Harvest the Crops!

## Win the War! Save the Yields!

On the battlefields of France and Flanders the United States boys and the Canadian boys are fighting side by side to win for the World the freedom that Prussianism would destroy.

While doing this they must be fed and every ounce of muscle that can be requisitioned must go into use to save this year's crop. A short harvest period requires the combined forces of the two countries in team work, such as the soldier boys in France and Flanders are demonstrating.

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

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

### Help Your Canadian Neighbors When Your Own Crop is Harvested Canada wants 40,000 Harvest Hands to take care of its 13 Million Acre Wheat Field

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

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

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

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

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

# APOLLO ROOFING



Fireproof, weatherproof, strong, rigid, durable—specially adapted to the construction of farm buildings. Formed from APOLLO-KEYSTONE Copper Steel Galvanized Sheets.

APOLLO-KEYSTONE Sheets are the most satisfactory, rust-resistant sheets obtainable for Roofing, Siding, Culverts, Tanks, Silos, Cisterns and all exposed sheet metal work. Look for the Keystone added below regular Apollo brand—it indicates that Keystone Copper Steel is used. Demand the genuine—accept no substitute. Sold by weight by leading dealers. Our free booklet "Better Buildings" contains building plans and valuable information. Send for copy today.

AMERICAN SHEET AND TIN PLATE COMPANY, Frick Building, Pittsburgh, Pa.

6 1/2 to 10%  
on your money

See Page 185

Adv.

**SEED WHEAT BULLETIN FREE**

Valuable information about New and Tested varieties—Kharkov—Harvest Queen—Fultz, etc.—Timothy, Alfalfa, Clover and all field and grass seeds. Gives valuable planting instructions. Describes heaviest producing varieties—how best crops are grown. Gives money-making ideas about fall planting. Read it before you buy. No charge. Write today.

AMERICAN MUTUAL SEED CO., Dept. 1131 Chicago

We want to Buy **BARLEY** Send us Samples

YOUNG-RANDOLPH SEED CO., Owosso, Mich.

**CLOVER SEED**

SEND US SAMPLES FOR OUR BIDS.

YOUNG-RANDOLPH SEED CO., Owosso, Mich.

**WE WANT VETCH.** SEND US SAMPLES

YOUNG-RANDOLPH SEED CO., Owosso, Mich.

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

**FOR SALE** Winter Barley \$2.00 per bu. F. O. B. sacks 25cts. extra.

W. H. KNICKERBOCKER, East Lansing, Mich.





## GET YOUR DE LAVAL NOW

It will pay for itself by spring, and there was never greater reason to save every ounce of butterfat and half-hour of time and labor.

Moreover, if labor and material costs continue to increase, your De Laval must cost you more later on. Buy it now and it will save its own cost in a few months, at present cream and butter prices.

See the nearest De Laval agent right away and let him show you what the De Laval will save for you. If you do not know the De Laval agent, write direct for any desired information.

**The De Laval Separator Co.**  
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With less labor, at lower cost and at one operation, you can paint your stables, dairy buildings, poultry and hog houses, cellars, etc., a clear, snow white—make them lighter, clean, attractive and thoroughly sanitary—put them in shape to pass the most rigid inspection of health boards or milk companies. Instead of using white wash and some kind of disinfectant, use

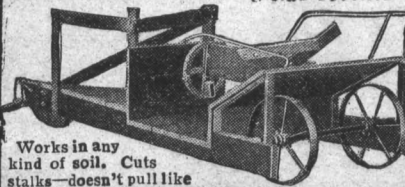
**CARBOLA**  
The Disinfecting White Paint

A finely powdered, mineral pigment combined with a germicide 20 times stronger than carbolic acid but not poisonous or caustic. Positively kills lice, mites, ticks, fly eggs and is a preventive of contagious diseases that affect poultry and livestock. Ready as soon as mixed with water to apply with brush or sprayer. Has no odor to taint milk. Will not blister, scale or peel. One pound makes a gallon of paint that covers 250 square feet. Get some today and have it ready when wanted. Will not spoil by standing.

10 lbs. (10 gals.), \$1.00 and postage.  
20 lbs. (20 gals.), \$2.00 delivered.  
50 lbs. (50 gals.), \$4.00 delivered.  
Trial package that covers 250 square feet and booklet for 25 cents postpaid. Get it from your dealer or Carbola Chemical Company 7 East 42nd St., Dept. X, New York City

## The PERFECT CORN HARVESTER

Sold Direct \$19.50 JUST THE THING for SHOCK or SILO CUTTING



Works in any kind of soil. Cuts stalks—doesn't pull like other cutters. Absolutely no danger. Cuts Four to Seven Acres a Day with one man and one horse. Here is what one farmer says: Hillsdale, Mich., Nov. 4, 1916. Your harvester is perfectly safe for horse and man, which is worth the price of the machine. If I had not had the harvester it would have cost me almost the price of it for hired help. George H. Todd.

**SOLD DIRECT TO THE FARMER**  
Send for booklet and circulars telling all about this labor-saving machine; also containing testimonials of many users. Send for this circular matter today.  
**LOVE MANUFACTURING COMPANY**  
Dept. 11 Lincoln, Illinois

Always mention the Michigan Farmer when writing to advertisers.

## A Truck for Carrying Milk

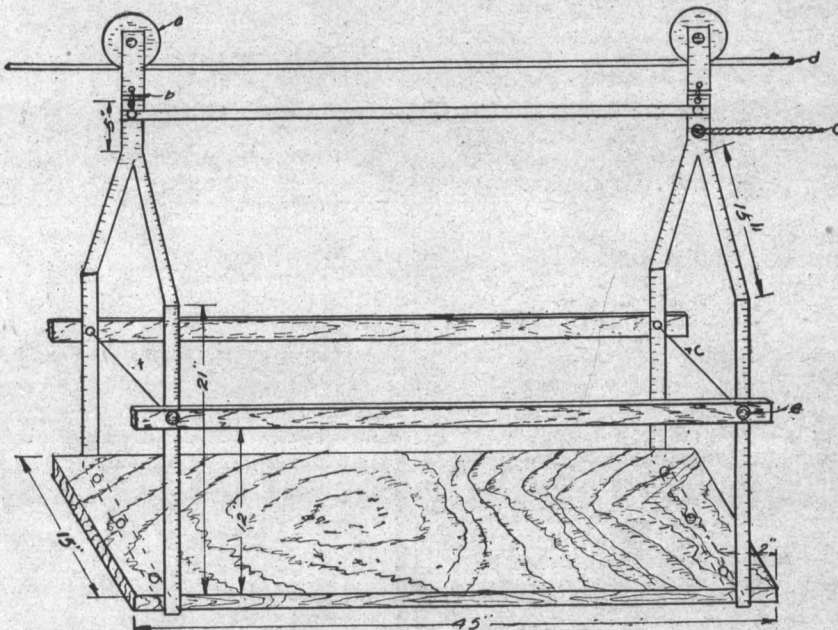
ON a dairy farm in western Pennsylvania which is operated by a friend of mine, one of the most difficult chores which had to be performed was the carrying of the milk from the barn to the milk-house. The dairy herd was quite large, and produced from seventy to eighty gallons of milk a day. Moreover, there was considerable slope to the path which led from the barn to the milk-house, and this was usually covered with ice in the winter. This made the path dangerous to walk over, especially when one was carrying a load of milk. So the owner of the farm constructed a truck, which ran on pulleys along a cable stretched between the barn and milk-house, to carry the milk between these points.

### Of Simple Construction.

The truck itself was simply constructed. It had for a bottom a piece of hard wood board fifteen inches wide and forty-five inches long. This was fastened in two stirrup-shaped iron

slings between barn and milk-house. The cable was provided with a turnbuckle, so that it might be tightened when occasion demanded. On the farm on which this truck is in operation there is a slope of about three feet in a hundred, so that the loaded truck runs along the cable unaided. A quarter-inch rope is attached to the truck through the hole provided for it in one of the slings, and passes over a pulley to an iron spool in the barn. This is provided with a handle so that the rope may be wound in, thus drawing the truck back. It also has a brake so that the speed of the loaded truck in its descent may be regulated. This particular iron spool was obtained from an old oil well. Probably something which would answer the purpose equally well, such as a spool on which fencing wire is wound, could be obtained on any farm.

The truck was drawn up to a door in the barn, and the cans were placed on the truck from inside the barn. At



A Convenient Truck for Carrying Milk. The Cable is Stretched from the Barn to the Milk-house.

slings which were made by the blacksmith. These slings were each made from strips of strap iron an inch wide and eight and one-half feet long. Eight inches from the middle of each piece the iron was bent at right angles. Twenty-one inches from these angles, the strips were again bent inward at an angle of about thirty degrees, so that they met. The ends were then welded together, the weld being about five inches long. Through this weld on each sling, a hole was drilled which received a sister-hook attaching the slings to pulleys. Just below this hole a strip of iron was welded to both slings, so that they were held forty-one inches apart. Immediately below the place where this piece was attached, another hole was drilled in one of the slings. The purpose of this hole was to receive a rope, to which reference will be made later. In the horizontal part of each sling, three holes were drilled to receive the bolts holding the bottom in place. The heads of these bolts were sunk into the wood, so as not to puncture the bottoms of the cans placed on the truck. Also, one foot above the right angles in each sling, holes were drilled, and pieces of inch board, two inches wide by forty-five inches long, were bolted between the slings. The purpose of these boards was to give added strength to the truck and hold cans in place. A piece of wire fastened across one end of the truck was all that was needed to keep the cans from falling from that end of the truck. At the end at which cans are placed on the truck and removed therefrom, a rope was found to be more convenient for holding the cans in place. The pulleys ran on a cable extend-

the other end it ran past the door of the milk-house, where it was stopped by means of the rope. Thus, it was found most convenient to have two persons help in the sending down of the milk. One at the barn loaded the cans on the truck, regulated the speed in its passage to the milk-house, and wound in the rope, thus bringing the truck back. The other person was stationed at the milk-house to remove the cans from the truck. The truck was designed to carry three five-gallon cans, but it could be made larger if so desired by merely increasing the length of the bottom of the truck. The slope given to the cable in this case was more than was necessary. Consequently, the truck could be used even if the slope were considerably less. If necessary, a spool could be placed at each end of the cable, and the truck drawn both ways.

This truck certainly proved a labor-saver on this particular farm, and will on any farm where similar conditions are found. The entire cost of construction and materials will not exceed five dollars, and the truck will remain serviceable for an indefinite length of time.

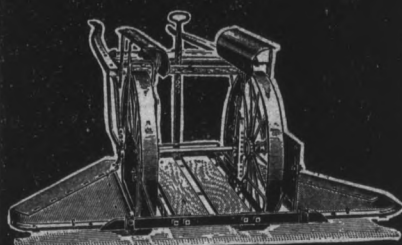
Ingham Co.

H. V. JORDAN.

NATIONAL DAIRY SHOW.

Held as it is in the center of a great live stock breeding and agricultural section, the National Dairy Show, with more cattle, more demonstration, more exhibits, more entertainment than ever before insures the most valuable National Show ever held. The place is Columbus, Ohio, and the time October 18-27, 1917.

## CUT YOUR CORN WITH



## AKRON SULKY CORN CUTTER

The old way requires considerable help and takes a long time. The AKRON SULKY CORN CUTTER saves time, money, and much labor; is absolutely safe; inexpensive; efficient; light draft; only one horse required; saves twine; cuts one or two rows at a time; adjustable for height of cut. We want you to know more about our Corn Cutter, but this space is too small for that, so we have published an illustrated booklet containing full description and testimonials which we will mail free to all interested readers of this paper. Send us a postal card request at once and you will receive this booklet by return mail. We will also tell you what dealer in your neighborhood handles our Corn Cutter, so you can go and see this complete machine. Write now. Right now.

**THE AKRON CULTIVATOR Co.**  
AKRON, OHIO.



## It's Natural for a Hog to Wallow

Here's a good thing to do: Provide a wallow close to the feeding grounds to which add Dr. Hess Dip and Disinfectant. As the hogs pass back and forth from the wallow to the feed trough, the DIP will kill the lice and cleanse the skin, while the DRIP will destroy the disease germs and the worms that pollute the ground. That will mean a clean, healthy skin, freedom from lice, a safeguard against disease and larger, better porkers.

**Dr. HESS & CLARK**  
Ashland Ohio

## DR. HESS DIP and DISINFECTANT

## Red Rock

The wheat that is making Michigan famous. Hardest and biggest yielder of all Winter Wheat.

## Rosen Rye

Yields 50 to 75 per cent more than common Rye, 45 bushels per acre this year.

## Giant Darwin Tulips

The finest of all spring blooming bulbs, also Narcissus, Hyacinths, Lilies, Crocus, etc. Must be planted in the fall. Write for Isbell's Fall Catalogue, it's free.

**S. M. ISBELL & CO.**  
Box A, Jackson, Mich.

## WITTE

"Kero-Oil" Engines

Immediate Shipment—All Styles—2 to 22 H.P.—No Waiting—Big Factory—Big Output—Prices most favorable. Write for my terms and prices—Cash, Payments or No Money Down.—ED. H. WITTE, Pres.  
**WITTE ENGINE WORKS**  
2192 Oakland Ave., Kansas City, Mo.  
2192 Empire Bldg., Pittsburg, Pa.

I Save  
You \$15  
to \$200



ANIMAL RESTRAINT—FIRST AID  
TO LIVE STOCK.

(Continued from page 166).  
then passed through a ring attached to a surcingle and carried over back. The operator of course stands on the off (right) side against the horse. The head is drawn around to the opposite side by means of a halter rein, then the operator pulls the ropes and the horse goes down quickly, then he can be tied. Wounds on hind quarters of a horse can frequently be safely stitched by backing the animal against a stall partition.

## Restraint of Cattle.

The ox, is extremely susceptible to pain, hence the necessity of prompt and efficient restraint in order to protect the operator against personal injuries as a result of kicking as well as goring. A very useful cattle tool is the nose clamp with rope, or if an assistant will place one hand on horn and thumb and finger in nostrils, an ox can usually be controlled. The restraint of one hind leg can sometimes be accomplished by passing tail between hind legs and held by the assistant around the leg which you aim to control. A surcingle buckled tightly around flank of cow, will very often cause her to stand quietly and allow you to handle her. A hock twitch is also a very useful tool, so is the knee strap. The breeding hobbles can very often be used to good advantage in restraining an ox. In order to cast an ox, secure a piece of rope thirty-five or forty feet long to the horns, pass it along upper part of neck and half hitch around base of neck; also around chest and flank; place a nose clamp on nose, then the assistant pulls on rope, and the animal will soon lie down.

## Holding a Hog.

In order to work on the hog with safety, especially if the animal is aged or large, they should be restrained and there are many mechanical devices for doing it. A novel method is to lay a barrel on its side, place some feed in the bottom, the hog walks in after the feed, then the barrel can be set on end and the hog caught in this way. Or a loop can be placed on hind leg conveniently. The Champion hog holder is a mechanical device, made of metal and one man can hold a very large hog. A young pig can be suspended in the air either wholly or partially by hand, and an older hog is easily cast and readily tied. A very convenient method is to pass a rope with loop on it, around body back of fore legs, then suspend fore quarters in the air. Another method is to pass a loop around upper jaw, back of the tusks and tie hog to post. A shy hog can be snared by baiting one part of slip loop, when he bites the bait, pull rope and loop tightens around the upper jaw back of the tusks, then tie him to post or tree.

## Useful Veterinary Instruments.

It always pays a farmer to keep on hand useful veterinary instruments and a few stable remedies, in order that he may intelligently render first aid to injured and sick live stock. A suitable place should be made to keep these supplies in, then when needed they can easily be found. In many localities there is no veterinarian available and if so, it may be impossible for him to respond promptly to your call; hence, the necessity of being equipped to do emergency work yourself. In the kit of supplies, you should have needles of different sizes for stitching wounds, also silk or linen or other sewing material of different weight. You should also have a syringe that holds not less than one ounce that can be operated with one hand; this instrument is suitable for giving medicine and injecting wounds. You should also own a fountain syringe which you will find to be extremely useful in washing out vagina or rectum, or irrigating wounds. Every

(Continued on page 187).

# Studebaker

Prices of all cars  
advance September 15th

The FOUR Touring Car \$985 to \$1050  
will be increased from

The SIX Touring Car \$1250 to \$1385  
will be increased from

THE costs of materials and labor used in the manufacture of automobiles have been, and are, steadily increasing.

Studebaker uses only the highest grade materials throughout their car, including chrome-nickel and vanadium steels, genuine hand-buffed leather and other materials of the highest quality.

A year ago Studebaker made huge purchases and placed long-term contracts for materials, making it possible to continue the present low prices while other manufacturers of cars in the Studebaker class have already advanced their prices.

But the popular demand for Studebaker cars is rapidly exhausting the materials purchased at old prices, and therefore, prices of all models will have to be increased on September 15th.

It is an invariable Studebaker policy to subordinate price to quality—quality must always be maintained.

You will probably never have another opportunity to buy, for so little money, such a powerful, durable, accessible, roomy and comfortable car.

Every Studebaker car is guaranteed for a full year from date of purchase.

## BUY NOW---SAVE MONEY

## Four-Cylinder Models

	Present Prices	Prices Sept. 15
Roadster	\$ 985	\$1025
Touring Car	985	1050
Every-Weather Car	1185	1250

All prices f. o. b. Detroit

## STUDEBAKER

Detroit, Mich. South Bend, Ind. Walkerville, Ont.

Address all correspondence to South Bend

## Six-Cylinder Models

	Present Prices	Prices Sept. 15
Roadster	\$1250	\$1335
Touring Car	1250	1385
Touring Sedan	1700	1850
Coupe	1750	1850
Limousine	2600	2750

All prices f. o. b. Detroit

You need that silo now. Can that field of corn in a Saginaw Silo. Just secured additional material and can ship your order promptly. Write or wire for latest prices on Saginaw Leader and Saginaw Steel-built Silos.

Address Dept. 170.

The McClure Co.

Saginaw, Mich. Cairo, Ill.

FERRETS. Both colors. Write for price list.  
HUGH KEPHART, Dowagiac, Michigan.

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

Mich. Winier Barley: recleaned seed for sale, \$4.00 per cwt.  
GEO. McMULLEN, R. 5, Grand Ledge, Mich.

## BREEDERS' DIRECTORY.

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

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

Flanders Farm, Orchard Lake, Mich.

## CATTLE.

## Aberdeen-Angus

Herd established in 1900. Trojan—Ericas and Black birds only. Bulls in service: Black Brandon 208932 Enos of Woodgate 191382. Also breeders of Percheron and Saddle Horses.  
WOODCOTE STOCK FARM, Ionia, Mich.

ANGUS CLOVERLY STOCK RANCH. Bulls, Cows and Heifers for sale.  
GEO. HATHAWAY & SON, Ovid, Mich.

CHOICE Angus Bulls for sale. Have several well bred, excellent type Angus Bulls at reasonable prices. M. L. Smith, Glenwood Farm, Addison, Mich.

## Registered Guernseys

Stock always for sale. May Rose Strain—Herd Tuberculin tested annually. Never had a reactor—no abortion. J. M. WILLIAMS, North Adams, Mich.

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

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

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

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

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

REG. HOLSTEINS: Herd headed by Albina Bonte R. Butler Boy No. 93124. Dam's record at 6 yrs. butter 28.53 lbs. milk 619.4. Yearly record at 2 1/2 yrs. butter 802 lbs. milk 1362 lbs. W. B. READER, Howell, Mich.

PURE bred Holstein Bull born July 15, 1917, not eligible to record, 15-16 white, a good one. \$35 crated & delivered anywhere in state. Newton Barnhart, St. Johns, Mich.

Additional Stock Ads on Page 186



# MATTHEWS

## AUTOMATIC

### LIGHT AND POWER PLANT

Here is the kind of an Electric Light and Power Plant you have been looking for—one that is **Perfectly Automatic**—that requires no attention except to occasionally supply gas, water and oil. It furnishes an abundance of bright white **Light** for the home, barn, and all farm buildings. **Power** for pumping water, operating Cream Separator, grindstone, milking machines, washing machines, vacuum cleaners, churns and all **electrical household devices**. It is always ready for use. **Starts itself**, and **Stops itself** by simply turning the current on or off from any point about the premises.

## Built in Several Sizes—All Guaranteed

### 35, 50, 100, 250 Lights—Suitable for Any Farm

Note the sturdy and rugged construction of the Matthews Plant. It is built to last and give daily service year-in and year-out. A plant you can put more dependence upon than you could on city electric service.

### Standard Equipment

Matthews plants are standard thruout. Have **Matthews Four-Cycle Water-Cooled Engine** direct connected (No Belts) to **General Electric Generator** of a capacity in each size to provide for ample overload. **Schebler Carburetor** and **Wells Automatic Switch-board**—the heart of the plant. **Willard**

**Storage Batteries** used exclusively, giving owners of the Matthews the advantage of **Willard Service Stations** established thruout the world. And **Stewart Vacuum System** for raising gasoline.

### Easy to Install—Low Up-keep

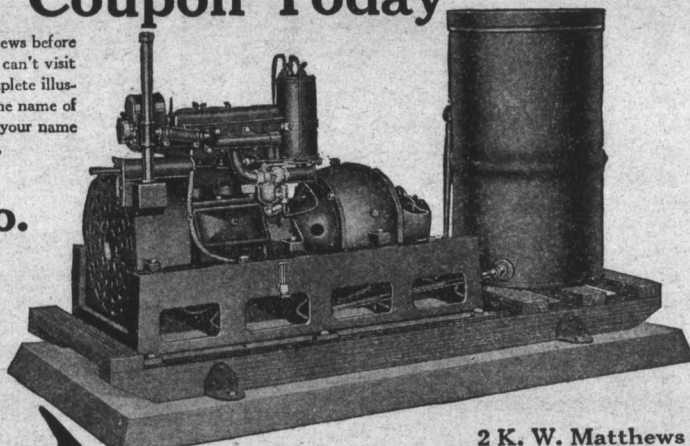
Anyone can install this plant in basement, garage or barn by simply following our directions. The initial cost is low. Besides the cost for plant, the wiring of buildings is about the only outlay. The cost of operating is far less than city electric service. There is no expense but to keep the batteries charged, which is done automatically, without any attention whatever.

## See It at the Fair or Send Coupon Today

Exhibited at  
**Michigan State Fair,**  
**Detroit**  
**Aug. 31 - Sept. 9**

**Matthews Engineering Co.**  
Sandusky, Ohio

Representatives Wanted in Every County. Matthews plants and Matthews Sales Contract offer exceptional business opportunities to dealers and special representatives. Write for particulars or ask about it at Our State Fair Exhibit.



2 K. W. Matthews  
Shown Without Switch Board and Batteries.

### MAIL TODAY

Matthews Engineering Co.,  
Sandusky, Ohio M. F.

Gentlemen:—Please send me particulars, catalog, etc., of the Matthews Electric Light and Power Plants.

Name.....

Address.....

( ) If a dealer, mark (X) here.

## HOLSTEIN BULLS

6 to 10 months old.

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

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

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

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

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

## HOLSTEINS

Do you appreciate the value a Herd Sire would be to your herd, if from tested Dams of over 20 lbs. butter 7 days and 16 to 20 thousand pounds milk in 10 months.

We have two young bulls for sale old enough for service October of this year, whose dams made the above records.

These calves are offered at \$75 each. Their dams will be re-tested this winter and we certainly expect them to make 30 lbs. butter in 7 days. You cannot lose on them. They are the best of dairy type. All stock guaranteed as represented.

**SWIGARTDALE FARM**  
PETERSBURG, MICHIGAN

## CLUNY STOCK FARM

100 REGISTERED HOLSTEINS 100

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

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

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

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

## WINNWOOD HERD

### REGISTERED HOLSTEINS

Holton, Mich.

Reference: Old State Bank, Fremont, Mich.

**Flint Maplecrest Boy** sire in service  
His sire is Maplecrest Korndyke Hengerveld, his 3 Nearest Dams each over 30 lbs. of butter in 7 days. His dam and grand dam both made over 123 lbs. of butter in 1 year. It is the yearly cow we are looking for to deliver the goods. Flint Maplecrest Boy's Dam is Gluck Vasser Bell, 30.57 lbs. of butter in 7 days and 120 lbs. in 30 days. Her butter fat test is 5.27. This looks about right to the man who goes to the creamery. We have Bull Calves from 2 weeks to 8 months old for sale at dairy farmers' prices all out of A. R. O. Heifers. Write & tell us the kind of a bull you want.

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

### OAK LEAF FARM

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

### 842 Lbs. BUTTER

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

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

## I Always Have Holsteins To Sell

If wanting Registered cattle write me your wants before placing your order elsewhere.

**L. E. CONNELL, Fayette, Ohio**

**WOULD** You want a bull from a 30 lb. dam and a 30-30 lb. sire for \$100? Can't be did, but we have one for \$600, also one from a 27.58 lb. heifer for \$260, and one from a daughter of Pontiac Aagie Korndyke for \$260. Good ones as low as \$80. All from World Record Sire.

**LONG BEACH FARM, Augusta, Michigan.**

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

### Butter Fat Counts

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

**3 Holstein Heifers** 30.21 lbs. sire. Their dams of 35 lb. cow, bred to 4 brother to 30 lb. 4 yr. old. Terms if wanted. M. L. McLAULIN, Redford, Michigan.

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

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

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

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

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

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

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

## HEREFORDS

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

Wanted Fifty head high grade Hereford heifers—Calves or yearlings. Kindly specify breeding and price, W. E. MOSS, 710 Union Trust Bldg., Detroit.

### The All-Around Jersey

is the farmer's cow. She's his friend and pride—the beautiful, gentle, ever-paying milk machine that lifts the mortgage, builds up the fertility of the farm, and puts the whole business on a sound, paying, permanent basis. She adapts herself to all climates and all feeds and does not need fancy care. She matures early and lives long. And she's so sleek, clean cut and handsome, as to be the family pet and pride. She produces well and sells well. Learn about her in our fine, free book, "About Jersey Cattle." Write for it now.

**THE AMERICAN JERSEY CATTLE CLUB**  
346 West 23d St., N. Y. City

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

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

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

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

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

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

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

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

**S. T. Clair County Jersey Cattle Club.** We have for sale Bulls old enough for service and Bull calves, from best strains of Jersey Cattle. Majesty's, Noble of Oaklands, Combination's Premier, etc. Write for Pedigrees, price and particulars. Fred A. Brennan, Sec. Capac, Mich.

## Shorthorn Cattle of both Sex for Sale

**W. W. KNAPP, Howell, Michigan.**

FOR Sale—Reg. Short Horn Bulls by Maxwalton F. Monarch 2nd, a son of Ayondale, from 1 to 3 mos. old. John Schmidt, Reed City, R. No. 5, Michigan.

## Bidwell Shorthorns

"For Beef and Milk"

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

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

## Francisco Farm Shorthorns

### Big Type Poland Chinas

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

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

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

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

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

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

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

## Cattle For Sale

Loads feeders and two loads yearling steers. Also can show you any number 1, 2 and 3 years old from 600 to 1200 lbs. Isaac Shanstun, Fairfield, Iowa, R. 8.

**FOR SALE** Registered Brown Swiss bulls old enough for service. **LAMB BROS., Springport, Mich.**



(Continued from page 185).

dairyman should keep on hand a few milking tubes, teat plugs and a teat expander. The farmer should also own a male and female catheter for horses, and also an ecraseur, or an emasculator for castrating animals. Keep on hand a clinch cutter and pinchers for removing horse shoes; also a knife for cutting hoofs, and a float for filing the teeth. Every dairyman should own a milk fever outfit, in order to be ready to promptly apply the air treatment, if necessary. He should also own a cattle trocar and canula for puncturing cattle for bad cases of bloat. Remember a much smaller trocar and canula should be used when puncturing horses or sheep for bloat. A probang is another instrument that cattlemen should own, handy to use in case of choke.

**First Aid Operations.**

Animals on the farm are continually being wounded and the first step to take in the care of a wound is to promptly explore the parts with a view of ascertaining if there is a foreign body, then arrest the hemorrhage to prevent waste of blood. This can very often be done by twisting the blood vessel or tying it, or by compression. The wound should then be washed with an antiseptic solution of some kind; however, remember it is important that the wound have proper drainage. Therefore, it may be necessary to do a little cutting before drainage is obtained. A wound that pockets seldom heals quickly. Small wounds about the head and neck should first be cleaned, peroxide of hydrogen applied (stitching material dipped in same), then edges of wound brought together with stitches as evenly as possible, and paint the edges of wound with tincture iodine, or apply equal parts oxide of zinc and boric acid, or any other reliable commercial dusting powder. Never stitch a wound unless you believe it necessary to hold the tissues together.

**The Medicine Chest.**

Your medicine chest should contain coal tar disinfectant, carbolic acid, aromatic spirits of ammonia, tincture of iodine, rectified oil of turpentine, raw linseed oil, Glauber's salts, epsom salts, cooking soda, borax, boric acid, salicylic acid, ginger, gentian, charcoal, powdered copperas, sugar of lead, tannic acid, castor oil, olive oil, etc. In a future letter the writer will tell how these different drugs can be best given or applied as home remedies.

**LIVE STOCK NEWS.**

Never in the long history of the live stock trade of the United States did cattle and hogs sell anywhere near so high on the Chicago market as they have sold of late, previous high records being exceeded every week. In short, it has been a thing of daily occurrence quite recently for hogs to make further gains of 25 cents per hundred pounds, with an advance of from 75 cents to \$1.15 in the course of a week. A year ago, when hogs were selling for \$9.75@10.70, prices were regarded as extremely high, while two years ago sales were made at an extreme range of \$6@7.80. Cattle advances, too, have been sharp and lively, although most of the time they have hardly kept an even pace with the remarkable boom in hogs. A year ago the top for cattle stood at \$10.85, which was regarded as extremely high, while six years ago the best beefs brought \$8.10. In cattle, as well as in hogs, much the greater advance has taken place in the better class of corn-fed offerings; but the rise in prices for the ordinary kinds of swine has been far larger than the advance in common cattle. Lambs, yearlings, and sheep are selling at far higher prices than in any former year, although the lamb market is lower than earlier in the season, when the early lambs were beginning to move to market. A year ago prime lambs were selling for \$11.50 and two years ago for \$9.50, while six years ago the best lambs were purchased for \$7.25. Corresponding changes have taken place in prices for yearlings and different descriptions of sheep.

**Veterinary.**

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

**Sore Neck.**—We have a horse troubled with sore neck and for several weeks we have been applying home remedies without producing satisfactory results. H. S., Fenton, Mich.—Paint sore occasionally with tincture iodine and apply equal parts of oxide of zinc and boric acid. Perhaps it is needless for me to say that it is impossible to heal a sore shoulder or neck if the horse is worked in a bad-fitting collar.

**Infected Navel.**—I bought two young Guernsey calves of a Wisconsin dealer and put them in stall together; they commenced to suck each other at once and before I was aware, one had caused the navel of the other to open and discharge. The calf, from this cause or some other, of which I am unaware, is doing poorly, looks stunted, has poor appetite, coat looks rough, but am feeding plenty of oil meal and skim-milk. The navel on the other calf has healed and it is thriving nicely; both calves are in orchard on grass. E. J. S., Owosso, Mich.—Apply equal parts oxide of zinc, powdered alum and boric acid to sore navel twice a day. Give calf a teaspoonful of tincture gentian, and a teaspoonful of tincture cinchona at a dose as a drench in either a pint of water or with its skim-milk.

**Barren Cow.**—I had a valuable Jersey cow that appeared to be partially in heat most of last summer, but failed to get with calf and I beefed her. A daughter of hers, now nine years old, has commenced to show exactly the same symptoms. She appears to be coming in heat, but refuses service; although so far as I can tell she is in good health. What can be done for a case of this kind? E. L., Scotts, Mich.—You should have her examined by a competent Vet. and ascertain if possible the cause of her not breeding. The writer is inclined to believe that she suffers from a cystic condition of the ovaries, and if they can be successfully crushed by your Vet. she might perhaps come in heat normally and get with calf. Giving her drugs will have practically no good effect, especially if she is in a healthy condition.

**Pica—Licking Disease.**—I wish you would tell me what to do for cows that pick up sticks and bones when running in the yard, as I am afraid they will get a sliver or wire nail in their stomach. F. A. P., Avoca, Mich.—The first work that you do should be to clean up your cow yard and free it from all such tempting morsels as you mention. Giving your cows some medicine will not prevent her making these little mistakes that are likely to cause her death. Feeding an unbalanced ration is doubtless the most common cause of this ailment. I advise you to turn your cattle out on pasture and keep them out of your yard until these foreign bodies are gathered. Keeping your cattle in good pasture that is high and dry, and preventing their eating food which is spoiled, will benefit them very much. Give her a teaspoonful of air-slaked lime, a teaspoonful of salt, 1 oz. of ground gentian and 1 oz. of powdered charcoal at a dose in feed twice a day.

**Swollen Glands—Chronic Cough.**—I have a horse with a swelling in throat which is about the size of a man's fist; besides, this horse has been troubled with a chronic cough for a long time. Whenever exposed to storms, he seems to take cold, then commences to cough and discharge white mucus from nostrils. H. C. B., Cedar Springs, Mich.—Clip hair off bunch, paint with tincture iodine two or three times a week. Mix together one part of air-slaked lime, four parts powdered licorice, four parts ginger and give him a tablespoonful in damp feed two or three times a day. Perhaps if you give your horse better care and a better quality of food, he would be a whole lot better. The care and feeding will have more to do with his recovery, than giving him drugs.

**Wart.**—what can be done for a mole on side of a horse's head? This bunch is about the size of a marble and is easily irritated; the bridle chafes it. A. Y., Chelsea, Mich.—Cut it out, then apply equal parts boric acid and tannic acid twice a day.

**Rheumatism.**—I have a cow that is troubled with rheumatism, affecting one shoulder, but so far as I can tell she is in a healthy condition. A. C., Melvin, Mich.—Give her 2 drs. of sodium salicylate at a dose in feed two or three times a day until she recovers. Apply equal parts turpentine, aqua ammonia and olive oil to shoulder three times a week.

**Michigan Live Stock Insurance Company**

Home Office: Graebner Bldg., Saginaw, W. S., Michigan  
Executive Office: 319 Widdicomb Bldg., Grand Rapids, Michigan

This Company is backed by more than 500 of the best live stock farmers of the state, and we have more than \$100,000 deposited with the State Treasurer as a guarantee of the Company's responsibility. We insure all live stock—horses, cattle, sheep and hogs against death from any cause. We issue individual and blanket policies covering any and all conditions—herd policies, feeding policies, shipping policies, 30 day foaling policies, etc. We want a local agent to represent us in every community in Michigan. We want every farmer in the State of Michigan to insure his live stock with us. We will give you a square deal. Write for information.

Colon C. Lillie, Pres. and Supt. of Agts.  
Harmon J. Wells, Secty. and Gen. Mgr.

**Jerseys and Duroc Jerseys**

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

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

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

**HOGS.****Durocs and Victorias**

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

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

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

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

**Duroc Jerseys**

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

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

**Duroc Spring Boars** sired by Orion Cherry American Col. One year old sow by Cherry King's Rival due to farrow Nov. 1st. farrowed 15 pigs last May raising 12. NEWTON BARNHART, St. Johns, Mich.

**Choice Duroc Spring Gilts**

\$35 each Reg. and delivered. J. R. HICKS, St. Johns, Mich.

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

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

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


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

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

**Durocs,** Good Spring pigs by Defender's Cherry King at reasonable prices E. E. Calkins, R. D. 6, Ann Arbor, Michigan.

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

**Raise Chester Whites**  
Like This  
the original big producers



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

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

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

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

**O. I. C.** An extra fine lot of last spring pigs, either sex and not akin, from good, growthy stock. Farm 1/4 mile west of depot. Otto B. Schulze, Nashville, Mich.

**BOARS**

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

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

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

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

**O. I. C'S.** Spring pigs and Reg. Holstein heifers from 5 to 15 months old. CLOVER LEAF STOCK FARM, R. 1, Monroe, Mich.

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

**O. I. C'S.** Gilts bred for Aug. and Sept. farrow. Also a few choice spring farrowed boar pigs. Geo. P. Andrews, Dansville, Mich.

**BIG TYPE POLAND CHINAS**

For Sale from the CHAMPTON and GRAND CHAMPION and other GREAT HERD BOARS and big STRETCHY SOWS of very best breeding and individuality.

HILLCREST FARM, F. B. Lay, Mgr. Kalamazoo, Mich.

**"War is"**

So is starvation, every one should do their bit. You can raise more pork on less feed if you breed Butler's big type Poland Chinas. Sows bred for fall farrow. Boars ready for service. J. C. BUTLER, Portland, Michigan, Bel' Phone

**Large Type P. C.**

Fall pigs and bred gilts all sold. Nothing for sale at present. W. E. LIVINGSTON, Parma, Mich.

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

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

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

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

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

**Big Type Poland Chinas** Sept. farrow, either sex, sired by Jumbo Wood, 800 lb. hog. A. A. WOOD & SON, Saline, Michigan

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

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

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

**Fullblood Yorkshire** pigs (not eligible), farrowed Aug. 21. Four weeks old, \$4 each; afterward, price varies. G. P. Rasmussen, Trufant, Mich.

**SHEEP**

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

**Standard Delaine Rams**

Big fellows with splendid heads, Legs and fleeces. O. R. PARSONS, Saline, Mich.

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

**For Shropshire Yearlings** or Lamb Rams and Ewes, write or call on ARMSTRONG BROS., R. 3, Fowlerville, Michigan.

**Shropshire Ram Lambs,** registered. Woolled from nose to toes. A. E. BACON & SON, Sheridan, Mich.

**OAKDALE STOCK FARM.** Shorthorn Cattle and Shropshire Sheep. Stock for sale. W. J. Lessiter, Belding, Mich.

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

**Western Ewes**—Several hundred good grade ewes, two year olds and yearlings. A few registered rams. Barnard Sheep Ranch, R. 5, Clare, Mich.

**R A M S:** Rambouillets and Hampshire for sale. A. A. WOOD & SON, Saline, Mich.

**HORSES**

**For Sale Reg. Black Percheron Stallion Colt** Weighing 1900 pounds at 24 mos. old Sired by a Stallion Weighing 2700 pounds well bred and priced to sell. M. A. Bray Est., Okemos (Ingham Co.) Mich.

**SHETLAND PONIES**

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

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

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

**Spanish Jack** For sale Spanish Jack seven years old good size. E. J. ALDRICH, Tekonsha, Mich.





## In Doing Your Bit

for this great United States, you soldiers of the soil should not forget that the national health—your health—must be conserved to the utmost.

Rest and recreation are as vital as work if we are to do our best. And what better rest and recreation can one have than an hour's exhilarating spin in the cool of the evening, along country roads, banked with their fields of golden grain.

Economy is also a requisite of the times—economy in your automobile tires as well as in other things.

So naturally you will equip your car with tires that mean the greatest economy—United States 'Usco' Tread Tires—or their equally famous brother, the 'Chain' Treads,

—tires of the greatest resiliency—tires that give the greatest absorption to the shock of the road, thereby lengthening the life of the delicate mechanism of your engine,

—tires that give the greatest mileage at the lowest final cost,

—tires from which you will get the greatest anti-skid comfort, the greatest rest and relaxation from tire troubles while on the road, as well as the greatest economy.

Ask your dealer to show you the complete line of *United States Tires*—one for every need of price and use—today.

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'Nobby' 'Chain' 'Usco' 'Royal Cord' 'Plain'  
A tire for every need of price and use

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