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War Measures on Michigan Farms

By J. F. COX

THE call to the colors has come. A rare opportunity for service is before you. As in the days of '61, many of you will feel duty bound to enlist for army service, but under present conditions you who remain on the land can render truly patriotic service. The world is faced with a food shortage. We will have armies to feed, and hungry mouths at home and abroad to satisfy. The farmer who exerts his skill and strength to the utmost extent to produce the greatest possible amount of food can rest assured that he has fulfilled an obligation to his country. Let us so farm this coming season that harvest time will find a patriot in every Michigan potato field, and true heroes harvesting the best possible crops of corn, beans, beets and grain on every acre available.

In view of the urgent necessity for the greatest possible crop production the following practices which will prove effective in increasing yields are suggested:

Treat Your Seed.

All seed oats, barley and wheat should be fanned through a good fanning mill and treated with formaldehyde. The well-known dipping and sprinkling methods are effective, but the new method advised by the Department of Botany, of the Michigan Agricultural College is the most rapid and economical. Apply one pint of forty per cent formaldehyde, which can be secured at nearly all drug stores, to each fifty bushels of grain. The grain to be treated should be built in a pile on the barn floor, layer by layer, formaldehyde being applied to each layer by means of a squirt gun or a small hand pump. The pile should then be covered with tarpaulins or sacks and allowed to stand four hours. It should then be opened and aired and the grain is ready to seed. The smut of oats, stinking smut of wheat, and covered smut of barley, can be effec-



By Using Three and Four-horse Teams Much Man Labor Can be Saved.

tively controlled by this simple method. Apply all available manure to the land. Old straw stacks which are well rotted, accumulations of organic matter around farm buildings and from out-houses should be spread on the land as soon as possible in preparation for crops to follow.

Don't Fail to Fertilize.

Fertilize all small grains, corn, potatoes, beets and beans with acid phosphate. Phosphorus plumps out the grain, increases the yield and hastens the maturity of the crops. It can be bought at comparatively reasonable prices, from \$18 to \$20 or less. Co-

operative arrangements should be made to secure carload lots. Acid phosphate should be applied at the rate of 200 to 300 pounds per acre previous to, or at time of planting. Increases of from eight to fifteen bushels of oats and barley, or six to twelve bushels or more of corn or wheat can be expected from its use under normal conditions.

Plow land as early as possible before planting time so that ample time may be had for the thorough fitting of the land. Weeds can be more effectively killed by frequent use of the harrow and disk before planting than when a crop is on the land. This is an important point to consider with labor

scarce and at a premium. Three or four times as much land can be gone over with a harrow as with a cultivator in a day. If cultivated crops are planted on a well prepared seed bed the labor necessary for later cultivation is greatly lessened.

Reset the Best Yielding Varieties.

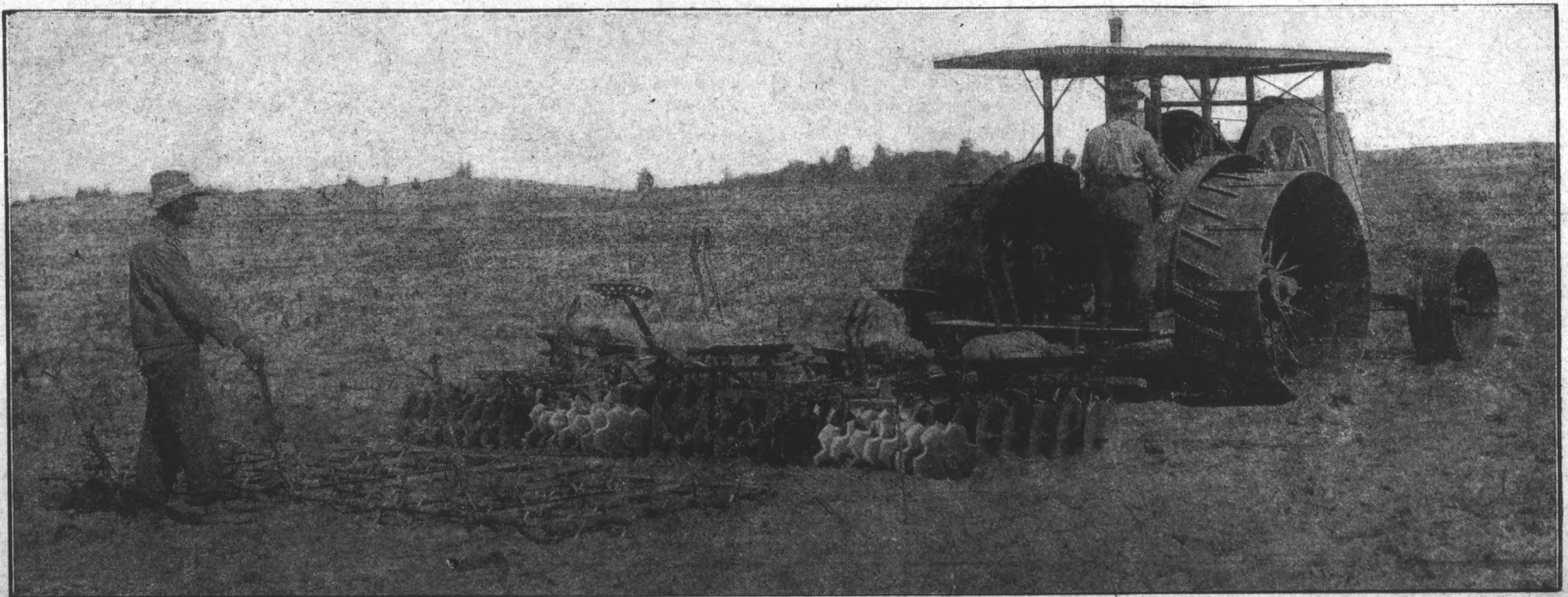
Plant the high-yielding varieties of grains and adapted varieties of corn. Call on your state experiment station at East Lansing for information, if needed, in this regard. The Worthy oats on heavy soils, Alexander on light, the Rosen rye and Red Rock wheat are some outstanding varieties of great merit. Every acre available should be reserved for seed purposes, and ordinary strains put to other uses, until the supply of these varieties far exceeds the seed demand. Other high-yielding strains not mentioned should receive the same attention.

Frequent shallow cultivation should be given so as to kill all weeds possible in fields of corn, potatoes, beans and beets.

Acreage of Grain Should Be Extended.

The utmost endeavor should be made to extend the acreage of grain crops in particular. Corn in the southern half of Michigan will produce more feed for man or live stock on fertile soils than any other crop. Every available acre adapted should go into corn. In the Thumb district and to the south and west of Saginaw Bay the greatest possible acreage of beans and beets should be planted. In the northern part of the lower peninsula and in the upper peninsula potatoes, barley, rye and oats, with wheat on strong soils are the crops to be most generally encouraged.

It is expected of every Michigan farmer that he fully realize the grave food situation facing the country and that he extend his energies to the utmost to produce the most food possible from the acres under his control.



The Tractor Can be Used as a Great Labor Saver in Preparing Soil for the Spring Crops. Use it to the Maximum on your Own and Neighbors' Farms.

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DETROIT, APRIL 21, 1917

CURRENT COMMENT.

In another column of this issue will be found a direct appeal from President Wilson to the citizens of the United States in general, and the farmers of the country in particular, to unselfishly discharge their full duty in the nation's crisis. This appeal is in line with the high ideals expressed by President Wilson in his recent message to Congress. Its careful perusal should inspire the reader with a broad sense of his patriotic duty in the country's hour of need.

Late last week a general conference of farmers, bankers, manufacturers and distributors of food stuffs was called by Governor Sleeper for the purpose of considering a stable program of preparedness, particularly as relates to agricultural production in this state. Following a long session of this conference during which the participants expressed their views on related topics, Governor Sleeper appointed a committee to carry out this branch of preparedness work, consisting of the following men: Ex-Governor Fred M. Warner, Farmington; N. P. Hull, Dimondale; W. K. Prudden, Lansing; W. J. Orr, Saginaw; Nathan F. Simpson, Detroit; George W. McCormick, Menominee, and John S. Hagerty, Detroit. This committee met early this week to organize the work placed in their charge, and ere this issue reaches the reader, their work will be well under way.

The burden of the message brought to the capitol by those who participated in the conference was the shortage of labor with which to make a maximum crop on the farms of the state. This problem will be one of those which will be given consideration by the committee, as will the related problems of providing seed for all who may need such aid to insure a maximum acreage of staple crops.

Steps will be taken to place a suitable man in each county to direct the local work under this committee, with a view of making its work of the greatest possible value to the largest possible number of farmers in the state. Full details regarding the plan of work adopted by the committee will be given in the next issue.

Two important conferences were held at St. Louis last week at the call of Secretary of Agriculture Houston. At the first of these agricultural representatives of thirty-two states, including commissioners of agriculture, presidents of agricultural colleges, directors of experiment stations and extension work, deans of col-

leges of agriculture and officials of the United States Department of Agriculture met on April 10-11 and made important recommendations relating to the problems of promoting increased agricultural production and organizing federal and state agencies for effective co-operation.

In this connection special appeal was made to the patriotism of farmers, and a definite program looking toward the increase of cereal and legumes and meat animal products was adopted. Briefly, the important recommendations may be summarized as follows:

An emergency appropriation of \$25,000,000 to be made available immediately for the use of the Secretary of Agriculture to meet the extraordinary needs of agriculture; an urgent call to all farmers to increase production and to housewives to avoid all food waste; the mobilization of over 2,000,000 un-

employed boys between the ages of fifteen and nineteen years for service on the farms and in the production of food supplies and munitions; the enlistment of men unfitted for military service as an officially recognized force for the production of necessities; a complete survey of the food supply; national systematic publicity of food prices; effective control of agencies for the manufacture and handling of foods, and price fixing, if necessary.

On April 12 the representatives of the agricultural press were called in conference by Secretary Houston, over ninety papers with a combined circulation of over eleven million being represented by sixty-three men. After a thorough discussion of the agricultural needs of different sections of the country, the following resolution was adopted:

"With the entrance of the United

An Appeal from the President

"My fellow countrymen: The entrance of our own beloved country into the grim and terrible war for democracy and human rights which has shaken the world creates so many problems of national life and action, which call for immediate consideration and settlement, that I hope you will permit me to address to you a few words of earnest counsel and appeal with regard to them.

"Give Service Without Profit."

"We rapidly are putting our navy upon an effective war footing and are about to create and equip a great army but these are the simplest parts of the great task to which we have addressed ourselves.

"There is not a single selfish element, so far as I can see, in the cause we are fighting for. We are fighting for what we believe and wish to be the rights of mankind and for the future peace and security of the world. To do this great thing, worthily and successfully, we must devote ourselves to the service without regard to profit or material advantage and with an energy and intelligence that will rise to the level of the enterprise itself.

"We must realize to the full how great the task is and how many things, how many kinds and elements of capacity and service and self-sacrifice it involves.

Food Problem First.

"These, then, are the things we must do, and do well, besides fighting—the things without which fighting would be fruitless.

"We must supply abundant food, not only for ourselves and for our armies and our seamen, but for a large part of the nations with whom we have now made common cause, in whose support and by whose sides we shall be fighting.

"We must supply ships by the hundreds to carry to the other side of the sea, submarines or no submarines, abundant materials out of our fields and our mines and our factories, not only to clothe and equip our own forces on land and sea, but also to clothe and support our people for whom the gallant fellows under arms can no longer work, to help clothe and equip the armies with which we are co-operating in Europe, and to keep the looms and manufacturing there in raw material.

"Our Duty to Supply Allies."

"We must supply coal to keep the fires going in the ships at sea and in the furnaces of hundreds of factories across the sea; steel out of which to make arms and ammunition, both here and there, rails for worn-out railways back of those going to pieces; mules, horses, cattle for labor and for military service; everything with which the people of England and France and Italy and Russia have usually supplied themselves, but cannot now afford the men, the materials or the machinery to make.

"It is evident to every thinking man that our industries, on the farms, in the ship yards, in the mines, in the factories, must be made more prolific and more efficient than ever and that they must be more economically managed and better adapted to the particular requirements of our task than they have been.

"The men and the women who devote their thought and their energy to these things will be serving the country and conducting the fight for peace and freedom just as truly and just as effectively as the men on the battlefields or in the trenches.

Special Appeal to Farmers.

"The industrial forces of the country, men and women alike, will be a great national, a great international service army—a notable and honored host engaged in the service of the nation and the world, the efficient friends and saviors of free men everywhere. Thousands, nay hundreds of thousands of men, otherwise liable to military service, will of right and of necessity be excused from that service and assigned to the fundamental, sustaining work of the fields and factories and mines and they will be as much part of the great patriotic forces of the nation as the men under fire.

"I take the liberty, therefore, of addressing this word to the farmers of the country and to all who work on the farms:

"The supreme need of our own nation and of the nations with which we are co-operating is an abundance of supplies, and especially of food stuffs.

Time to Act Now.

"The importance of an adequate food supply, especially for the present year, is superlative. Without abundant food alike for the armies and the peoples now at war, the whole great enterprise upon which we have embarked will break down and fail.

"The world's food reserves are low. Not only during the present emergency, but for some time after peace shall have come, both our own people and a large proportion of the people of Europe must rely upon the harvests in America. Upon the farmers of this country, therefore, in large measure, rests the fate of the war and the fate of the nations. May the nation not count upon them to omit no step that will increase the production of their land or that will bring about the most effectual co-operation in the sale and distribution of their products?

"The time is short. It is of the most imperative importance that everything possible be done and done immediately to make sure of large harvests. I call upon young men and old alike and upon the able-bodied boys of the land to accept and act upon this duty—to turn in hosts to the farms and make certain that no pains and no labor is lacking in this great matter.

(Continued on page 533).

States into the world war farmers of America are laid under the most insistent and inexorable obligation. It is a war of food more than of munitions. Nature has turned a forbidding face on the early harvests of the world. A shortage of more than 50,000,000 bushels of winter wheat at home and a deficiency in all crops abroad sound a trumpet call to farmers to bend every effort to the limit of human intelligence, energy and ingenuity to wring from the earth its maximum yield in all the coming harvests.

"Patriotism and profit should stimulate them. The life of the nation hangs in the balance. The rewards for intelligent farm toil were never so alluring and certain. Every man in his own field must be the judge of methods.

"This appeal coming from publishers and editors of farm journals in session in St. Louis, representing a combined circulation of 11,000,000, seeks to arouse producers to the gravity of the situation, and to enlist in the army most necessary to the nation's defense—the army of farm men, women and children whose devoted and intelligent effort will sustain our fighting forces and bring succor to starving men, women and children and insure inevitably the peace of the world."

Further action of the conference consisted in a resolution suggesting the appointment of an advisory editorial board to be selected from the farm press of the country for the working out of a comprehensive plan for the distribution of information from the Department of Agriculture.

These conferences proved beneficial and inspiring to all who participated in them, and will, we believe, be reflected in the greater efficiency of all agencies who may be able to help promote an increase in agricultural production.

The relator, Mr. Hollis, formerly a sailor, now a well-to-do business

man of Chicago, has been invited by his old friend, Mr. Carrington, to take a cruise with several of New York's leading financiers. Everything is ready and the well-appointed yacht starts on what proved to be a most exciting, but for the yacht, a disastrous journey, on the eve of the breaking out of the great European war. About midnight of the first day out the engines suddenly stop and Mr. Hollis, true to his sailor training, dresses and goes out on deck to learn the trouble. He discovers soon that nothing serious is the matter, but in a walk about the deck he catches sight of a woman, who suddenly disappears from sight. In the morning he relates this observation to his host, who declares upon his word of honor that no woman is aboard. Although certain that his host was perfectly sincere about the matter, Hollis himself, was satisfied that his eyes did not play him false, and what he learned the following night is related in the installment on other pages of this issue, which, with the trying events that followed, makes up one of the most fascinating of stories. Every lover of a good story will enjoy it. Besides, at times like the present when the destiny of nations is in the balance and men everywhere are wondering and brooding and worrying as to what will come next, it is best to keep oneself well in hand and we know of no better way to do this than to lose our thoughts for a few hours each week in an absorbing story. We can then come back to our duties with a clear brain and steady hand, and will be better able to do a maximum of service for our country and our homes.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The Allies continue their drive on the western front. The latest reports indicate that the Germans have been driven from Lens, which is the center of the great French coal fields. The town of Levin has also been taken. The Hindenburg line is now broken between Queant and Arras and the Germans are making a desperate effort to hold that portion of the line south of Queant. On the extreme west the Belgians are advancing toward Dixmude on the North Sea coast. They have already reached the

(Continued on page 528).

Disking Before Plowing

By MELVIN RYDER

HARRY J. LURKINS, a successful and prosperous farmer of Van Buren county, Michigan, and who has grown one of the largest yields of potatoes ever grown in Michigan, averaging 454 bushels of marketable potatoes to the acre for a twenty-five-acre field, says that all ground should be disked before it is plowed.

J. B. Brown, another farmer and a farmers' institute lecturer of Michigan, says that all cover crops or clover over six inches in height should be disked before it is turned under. While this is probably more nearly idealistic than most people advocate, the importance of disking ground before it is plowed is receiving more and more attention from farmers throughout the country.

Ideal seed bed preparation consists in disking, plowing, rolling and then disking and harrowing. Fine, compact seed beds in which there are no holes, facilitate the rise of moisture. A loose mulch on top holds it for the plant and prevents evaporation. The better the seed bed is prepared, the bigger the crop. Clods will not grow crops. Neither will they hold moisture nor facilitate its rise from the deep soil to the surface where the crops are growing. It is poor policy to plow under a large amount of organic matter such as green cover crops, straw, stalks or manure without first disking because such a layer in the bottom of the furrow cuts off the supply of water coming up from the sub-soil.

The growing of cover crops, the plowing under of legumes and the addition of organic matter to the soil is becoming more important each year. Yet hundreds and thousands of farmers frequently do more harm than good by the methods employed in adding organic matter to the soil.

I have been on many farms where heavy applications of organic matter, straw or manure had been turned under, and the crop was, in many cases, a failure because the work was not properly done. In others it was not nearly so good as where no manure was used. I have inspected a great many acres where boys had gone into corn, tomato and potato growing contests. The first thing they did was to haul out a heavy application of manure and turn it under, resulting in a very small yield because the season was dry and the layer of manure in the bottom of the furrow cut off the rise of moisture. One man in southern Michigan said he turned under the heel of an old straw stack on a field from which he expected to get a bumper crop of corn. The result was a crop failure until the second year, when he re-plowed the ground and worked the straw through the soil. We do not want to stop the rise of soil moisture, but we want to stop it as near the surface as possible, and not down at the bottom of the furrow.

The reason we are so interested in the rise of capillary moisture is this: It is not the water that falls during the summer that grows the crops, for ordinarily there is not enough falling. It is the water that falls during the fall, winter and spring, that is stored in the soil and comes up to the surface by capillary attraction, provided the structure of the soil does not stop this rise of moisture. Where the land is first disked, all organic matter will be well mixed through the soil and seed bed. This makes a more efficient factory in which the plant food is manufactured and liberated for the crops. Humus and organic matter well mixed through the soil increases the moisture holding capacity, as every ton of organic matter will hold eight to ten tons of water. It improves the structural condition of the soil, furnishes a better home and food for bacteria, insures a profit from fertilizers

when they are applied. No matter how well suited and fitted the fertilizers are to the soils and crops, if the physical and mechanical condition of the soil is not right, the fertilizers cannot do their best.

There is no use dodging the issue

Michigan's Corn Champion

THE state of Michigan is not one of the corn belt states but it has been proven conclusively this year that large yields of good corn can be grown in at least the southern half of the state, and this by a fifteen-year-old boy.

Floyd Bergey, of Caledonia, Kent county, Michigan, has just been awarded the Junior Corn Growers' Trophy for producing the best all around acre of corn that was grown in the state during the season of nineteen hundred and sixteen. This trophy is offered by the Michigan Bankers' Association to the boy who does the best in the work of raising an acre of corn, his work to be judged on the four-point basis as follows: Quality, quantity, profit and report. The trophy is to be held a year by the winner and should one boy win this trophy three years in succession it is to be given to him permanently. The cup was won last year and the year previous by Charles Morrice, of Clinton county.

It is interesting to note that the championship results that Floyd Bergey has attained this year come as the result of several years' experience in growing corn. Working with a strain of Pickett's Yellow Dent corn last year this boy won second place in the state work. The work of this season shows very clearly what can be accomplished by following scientific principles in seed selection and growing.

The report and story of this boy are worth reading.

Mich. Ag. Col. C. A. SPAULDING.

How I Made my Crop of Corn.

BY FLOYD W. BERGEY.

I enrolled as a club member this year because I had been quite successful other years, also to get more acquainted with agriculture.

The object of the Boys' Corn Club is to interest the boys in agriculture, and give the boy a chance to manage for himself.

My seed was tested in a box nearly full of sawdust, measured off in squares, each square being numbered and with each ear having a corresponding number.

The acre was mostly loam, although a part of it was rich clay. I planted my corn in checks the tenth day of June. Some said it was too late to plant corn, but I did not have the ground prepared before.

As soon as the corn was planted it was top-dressed with good barnyard manure. Then I harrowed it once

that the reserve food supply of the nation is practically exhausted. Hence it is vitally important as well as profitable, for the farmer to so handle this soil as to get the most profits in the way of largest crops of best quality this year. Disking the land before plowing must continue to receive more and more attention as the soil is the factor that furnishes the plant a home, stores the plant food and in turn manufactures it into such form that the

plant can use it. This means the soil must be well enriched and thoroughly mixed with organic matter and well supplied with plant food. Disking before plowing, the generous and intelligent use of fertilizers, legumes and manure, shallow cultivation, together with the proper planting of disease-free seed of high-yielding strains and intelligent spraying to combat disease and insect attacks will insure farm prosperity.

A PERTINENT SUGGESTION ON ROAD BUILDING.

As the time is now here for working on the public highways, I would like to make a few suggestions. Every farmer is, or should be, interested in good roads, and there being no way of improving our roads without large expenditures of money and labor, the most important question for the farmer to settle is how to obtain the best roads with the least expense in labor and money.

I am paying taxes on a farm of 140 acres, and about \$2,000 in other property. My highway and road repair taxes this were about \$50. This had to be paid in cash, for the reason that about all of our road work was being done through the summer and fall when every farmer was very busy with his farm work. I keep on the farm four or five work horses, but about all of the time from the middle of April to the first of October we need all of our horses to work on the farm, so we can't get any time to work on the road.

If our highway commissioners would grade and prepare the road bed during the spring and summer, and leave the gravel hauling and crushed stone hauling on the road until late fall and winter, I could put a team on the road hauling gravel continuously, when the weather would admit, from September 1 to April 1, which would give me work for a team all winter that would otherwise be idle. I would sooner pay \$75 a year road tax, to be paid in hauling gravel during the winter, than to pay \$40 in cash and have a man and team idle.

Under our present system of hauling gravel in the summer, it takes a large number of teams off the farms that ought to be kept at work on the farms. It also creates a scarcity of farm labor, thus neglecting and greatly reducing the volume of farm crops. As a matter of fact, we may be able to make better roads for the money expended by doing all of the work in the summer. But for the farmers and the consumers generally I believe we had better build, or do a large per cent of our road work in the fall and winter and keep the teams and men at work on the farms during the summer. What do the readers of the Michigan Farmer think about this proposition?

Hillsdale Co. J. A. PALMER.

PREPAREDNESS.

Much of the success attained in farming must be attributed to good generalship. No battle that is considered decisive can be won without preparedness. Within the month previous to seeding, the farmer's campaign for the busy season should have been thought out.

When there is a little bad weather see that all tools are in first-class working order. Are the harrows sharp, the cultivator points ready to bite, and the roller, the drill and other machinery ready for instant service? Perhaps the hay-cutting and the wheat harvest seem a long way in the distance, but you are going to be busy then. Why not now take the opportunity to overhaul the mower, the binder and that side-delivery rake that you took so much trouble to store away? See that all broken and worn parts are renewed, nuts tightened and bearings oiled—ready to start at the word go. Then

with a spike-tooth harrow. This hid the marks of the planter and fooled the crows. The corn came up in about a week and I started cultivating, the first time deep, but each time shallower. It was cultivated four times.

Part of my corn was damaged by a heavy rain on June 28, and this part



The Champion Corn Grower.

never grew quite as well as the other parts. One day I thought of a new plan. The plan was to burn brush piles and put the ashes on the corn. Another time I caught water from the manure pile after a rain and put it on the corn. My corn was not damaged by the drought for we got a rain just as the corn was beginning to set.

The corn was ripe just in time so that I could make an exhibit at the West Michigan State Fair. I won second premium which was a ribbon and seven dollars.

I started to harvest the corn September 30, but did not finish until November 1. As I went to school I did not get along very fast.

In all I had 104.25 bushels of shelled corn, of which seven bushels are seed. The seed is stored in a well ventilated living-room.

At the present time the corn is worth \$118.52. It cost \$32.57 to raise the corn, which gave me a profit of \$85.95. Besides this profit I see what an acre of ground planted to corn will do. It was a great pleasure to me to raise this corn. I advise every boy or girl that has a few moments of time to join the Boys' and Girls, Agricultural Clubs.

Cost of One Acre of Corn.		Number	Cost.
		Hours.	
Plowing, harrowing, spading, manuring and other work of self or team.....	12.30		\$ 4.95
Hoeing acre of corn.....	10.00		1.00
Planting acre of corn (self and team).....	2.00		.20
Cultivating acre of corn (self and team).....	5.00		1.37
Work in gathering acre of corn.....	53.30		6.30
Estimated rent of land.....			5.00
Cost of barnyard manure.....			13.00
Cost of seed corn to plant acre (give actual cost or market price of good seed).....			.75
Total cost of producing acre of corn.....			\$ 32.57
Estimated Value of Corn from Acre.		Bushels.	Value.
Total number of bushels of shelled corn made on your prize acre.....	104.25		\$ 87.52
Number of bushels of seed corn obtained from your prize acre.....	7.00		21.00
The market value per bushel of your common corn at the time you put it in your crib.....			.90
The market value of your seed corn at same time....			3.00
The value of all your corn, both common and seed.....			118.52
The profit on your acre of corn.....			85.95
The cost of producing your corn per bushel.....			\$.303

En-ar-co THE MOTOR OIL FOR NATIONAL USE

Why En-ar-co NATIONAL CARBONLESS Motor Oil Is Better—Why It Costs More—How It Is Made

Steam that escapes through a tea kettle spout, if caught and condensed, would be pure water. Distilled water is manufactured on this same idea, only on a larger scale.



Along the sides and at the bottom of the tea kettle scale is formed and accumulates—the residue that is left over after the passing of the water into steam.

The same principle that manufacturers of distilled water use is carried out in the manufacture of En-ar-co National Carbonless Motor Oil.

Imagine a tea kettle that will hold 25,000 gallons, then you have some idea of an oil still used for this purpose. Into one of these huge oil stills goes the highest selected Crude Oil from which National Carbonless Motor Oil is always refined, where the oil is heated until it forms a vapor. This vapor is then condensed into a liquid distillate (the same as the vapor from a tea kettle spout is condensed), further refined and then filtered. The result is a clear, clean, carbon-free Motor Oil—EN-AR-CO National Carbonless Motor Oil.

Residue oils left over in the still never enter into the manufacture of National Carbonless Motor Oil. Where such residue is used an oil is made of very inferior lubricating properties and can be and is sold at one-half the

price of an oil made as is En-ar-co National Carbonless Motor Oil.

A Motor Oil loaded with residue will break under heat and fail to perform its function. The residue and deposit which becomes incandescent, causes pre-ignition under heavy duty and finally, after continued use, coke-like carbon forms. Just as scale is formed in the tea kettle.



Suppose you catch and condense escaping vapor from the tea kettle spout? You have pure water. Place this distilled water in a brand new tea kettle and reboil it; you will find little if any scale in tea kettle No. 2. The same experiment applies to En-ar-co National Carbonless Motor Oil.

National Carbonless Motor Oil, distilled into a vapor, is further refined and then filtered—leaves no carbon, and lubricates most efficiently.

A juicy sirloin steak costs more than chuck steak. Wool is more serviceable than cotton. Gold jewelry gives satisfaction long after some Christmas brands have turned green. Quality in anything costs more than the low grade article—in En-ar-co National Carbonless Motor Oil you get quality in manufacture, service and efficiency in use—full value.

You should use En-ar-co National Carbonless Motor Oil for economical and perfect lubrication.

Other En-ar-co Products

White Rose Gasoline. Always uniform. Every drop is continuous power. Pure, dry, carbon-free.

En-ar-co Tractor Oil. Especially made for modern tractors. Proper body to lubricate most efficiently—saves cash in machinery depreciation.

National Light Oil. Bright, clear light for lamps. No smoke, odor, charred wick or chimney. Uniform heat for incubators and brooders. Best for oil heaters and all purposes for which the best burning oil is required.

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Sweeten Your Soil

Soil becomes acid after cropping.

Organisms cannot live in acid soil.

Legumes depend on the growth of organisms.

Vigor in your crops depends on organisms.

Acid in your soil is neutralized by lime.

You should use Solvay Pulverized Limestone.

The Solvay Process Co.,
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SOLVAY
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is powdered as fine as flour. Solvay guarantees that 95% passes through 50-mesh screen. Practically every particle dissolves quickly into the earth—every particle works to sweeten the soil and to create maximum fertility.

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perhaps the harness has been neglected. If repairs are advisable, do not delay in having them done. Have the leather well oiled and the collars all cleaned.

In these days when farm help is so scarce and high-priced, it is good business to consider the class of machinery you purchase. Are your implements of the old-fashioned, narrow type—regular time consumers? Would it not be practical to trade them to a dealer for wider and more convenient ones? When you are being pushed, in a few weeks, to get that heavy clay into crop before a three days' rain stops operations for a week, you will be impressed by the difference. It will spell dollars to you then.

Canada.

J. H. McKENNEY.

WHIFFLETREES THAT WORK AS AN EVENER.

The device here described is one to be used when it is desirable to work a team tandem, one ahead of the other, instead of abreast in the ordinary way.

It is quite often very desirable to work a team in some narrow place, such as plowing out the bottom of some narrow ditch where it is too heavy draft for one horse and not room enough for two to work abreast. This includes such work as plowing out vineyard, or berry bushes, or up close to trees or fences, etc.

The device consists of two very plain cheaply constructed whiffletrees placed one above the other and clamped within a common U clevis, only being wide enough to go over the two. There should be a heavy washer about half an inch thick between the whiffletrees to prevent the rubbing of one on



the other. The lead horse is provided with rope extension traces to reach back on either side the rear horse to the double whiffletrees behind shown in the accompanying cut.

The whiffletrees are not bored exactly in the center but three-quarters of an inch toward the opposite end of the lower one. Thus the end hooks do not play exactly over each other.

Neither horse is hitched to a single whiffletree as in the ordinary way. But the rear horse is hitched to the shorter ends of both whiffletrees. And the rope traces from the head horse to the longer ends of each. This gives the lead horse a trifle advantage as the rear horse has an up lift as well as a closer draft. Now, as the horses will never work exactly even these whiffletrees will work back and forth like a pair of shears, evening the draft at all times.

In plowing orchards or close along fences, etc., we found it very desirable that the team walk in the furrow. This can be done by simply reversing the draft clevis of the plow where it has been arranged for three or four horses, or by bolting a heavy piece of hardwood across the draft clevis of the plow and letting it extend out partially over the furrow and bracing this back to the plow beam with chain or heavy wire.

We took a plow that was pretty well worn out and simply sprung the beam over to the right until the draft came right. In springing a plow beam one should never make the plow fast and force the beam over, but rather lay the plow down and with a powerful lever spring the beam as desired.

Now as the team walks in the furrow one can plow up very much closer under trees. Along the fences, with our rig, we could peel the last inch of sod away from a fence post. Of course this is not desirable, ordinarily,

If desired the rear horse can be tied to either side of the lead horse and the

lead horse governed by light rope lines. Care should be used that the whiffletree hooks are not too large and bungling, or too big knots in the rope hitch, as they might catch together as the whiffletrees play back and forth and thus cause annoyance.

We feel quite sure that a pair of ordinary whiffletrees could be used in this way, provided the rear hitch could be adjusted just right and a little way apart. However, we have never tried this as we made ours for the purpose. We know the principle will work.

Bay Co.

L. W. OVIATT.

FARM NOTES.

Corn or Potatoes on Thin Land.

I have a piece of land that has been run for years without clover or manure. This land is quite sandy and contains practically no humus. Now, if I apply 12 good loads of manure and from 400 to 600 lbs. of 1-9-1 fertilizer to the acre, which would be the most profitable crop for me to raise, corn or potatoes? I raised corn on similar land last year that went 60 crates to the acre, with manure with no commercial fertilizer. Would this ground hold moisture sufficient to grow a good crop of potatoes?

Montcalm Co.

R. E.

It is, of course, impossible to tell which of two crops will be most profitable in any year. From the standpoint of probable yield, however, if the corn can be used to good advantage in feeding live stock, with the proposed dressing of manure and fertilizer, it is probable that a comparatively better yield of corn would be secured on this land than of potatoes. At least, there would be less chance of a crop failure. Then if the corn can be fed out on the farm to advantage, the permanent benefit to the farm's fertility would be greater.

Under favorable conditions a fair crop of potatoes could be grown with liberal fertilization, such as is proposed in a normal year, but under drouth conditions such as prevailed last season over a large section of the state, such an outcome would not be dependable.

Varying the Crop Rotation.

My seeding with grain last year was a failure. It did not catch. Would you recommend manuring and plowing the stubble for potatoes this year? Would it do for beans where potatoes grew last year? It was a big growth of clover, also manured, plowed under and potatoes planted. I want to reserve an old meadow to plow under for corn this year and will also have to plow last year's potato and corn ground for oats this year?

Lapeer Co.

M. A. C.

Where the clover seeding fails in the crop rotation, there is nothing left to do but to vary the crop rotation in some manner. Local conditions will of necessity determine very largely as to what variation or substitution may be made. Suitable ground well manured should grow a good crop of potatoes, although not as good as a good clover sod similarly treated. In this event, however, the land should be reseeded as soon as possible, and the best plan of accomplishing this would be to sow the potato ground to oats next year, using a comparatively light seeding of oats, and sowing the clover with same so as to insure a catch if possible. Similarly, beans could be planted after potatoes which were well fertilized last year as described.

Ordinarily, it is not a good plan to plant beans on fallow ground. This was a common mistake among Michigan farmers in the early history of bean growing in this state. The succession of two cultivated crops tends to rapidly deplete the humus in the soil. This result would not be as marked however, in growing beans after a late planted crop like potatoes, as where grown after corn which requires a much longer growing season. In case this plan is adopted, it would be advisable to sow the bean ground to wheat this fall and seed to clover in this crop.

Please mention the Michigan Farmer when you are writing to advertisers and you will do us a favor

Crop and Fertilizer Questions

Planting Beans After Beans.

Last year I had ten acres to beans, after the beans were harvested I was unable to get a fall crop on the same ground. It has laid bare all winter. Do you think I would be safe in putting it to beans this year; if so, what kind of fertilizer would you advise? I have no barnyard manure. Last year's beans were fine. The soil is gravelly, with some sand. There was quite a bit of clover and rye turned under last year. The soil is not very strong. I would like to plant to beans again if I can get a fair crop, but would like some advice.

Hillsdale Co.

M. E. H.

We all know it isn't the best farm practice to grow the same crop on the same field two or more years in succession. A rotation of crops helps to keep the humus content of the soil up to normal. Most of the soil is apt to be deficient in vegetable matter and where we grow beans more than one year in succession we certainly do deplete the organic contents of the soil, but crop after crop of beans or corn or potatoes can be grown on land without injury if the vegetable matter is supplied in some other way than by sods or the roots of grasses. The thing to do is not to neglect it. Professor Roberts, of Cornell University, grew corn ten years in succession on the same field and the tenth year the crop was better than the first, but he applied a good dressing of stable manure every year. This kept up the organic matter in the soil.

In my judgment there would be nothing serious in planting this field to beans again. It would be nice, of course, if you could put stable manure on the land but in as much as you turned down clover and rye before, it will do no particular harm to plant beans again, even without stable manure, provided you handle the soil properly afterwards.

As clover and rye were turned down, this field probably has sufficient nitrogen to grow another good crop of beans and undoubtedly there is sufficient potash, so I would recommend simply an application of acid phosphate. Phosphorus is what you need to grow beans, say 200 pounds per acre.

Plowing Sandy Loam.

I have a piece of sandy loam on which I put five loads of farm dressing and plowed last fall. Would it make it better if I again put dressing on it and plowed this spring, or only drag the dressing in thoroughly instead of plowing a second time?

Shiawassee Co.

N.L.

If the manure is not so coarse that it will interfere with tillage tools, I would top-dress and not plow. We can plow sandy land too much. Sandy land wants rolling and packing quite as much as it wants plowing. It is just the opposite of clay land. Clay must be plowed and loosened up thoroughly to get the air and water into it, but sandy land allows air and water to pass through it too freely. Fill the sandy land with organic matter and it fills in between the coarse particles of soil and makes it more compact, helps it hold moisture better, etc. With clay the organic matter presses the particles of fine clay apart and in this way improves its physical condition.

Just recently I heard a very observing farmer say that he was from now on going to disk his sandy soil more and plow less. I think he is wise.

Of course, if the manure is coarse, it would be plowed down to get it out of the way.

Does Fertilizer Lose its Value by Being Stored?

Is fertilizer that has been stored up in a dry shed for two years as good as fresh fertilizer?

Emmet Co.

C. D. E.

If fertilizer is stored in a dry place it will retain its value as a plant food practically indefinitely. The only way that its plant food value can be destroyed would be to have the fertilizer

get wet and ferment. If fermentation would take place, then the ammonia would be lost, or some of it.

Sometimes fertilizer cakes in the bags when it is stored a long time. Usually this can be easily pulverized by pounding the bag with the back of a barn shovel which will thoroughly pulverize it. If all the lumps are not pulverized in this way, it can be emptied on the barn floor and with very little trouble pulverized so that it will operate in a drill.

Sometimes, in the production of acid phosphate they don't get just the right proportion of sulphuric acid with the raw rock and a little free sulphuric acid is left. This is liable to injure the bags so that sometimes the bags are absolutely worthless, but this doesn't indicate that the fertilizer isn't of any value for it has not in any way injured its value.

Fertilizer for Beans and Potatoes.

I have a field of sand land, clay subsoil, that has been pastured for several years, before being cleared. It is a June grass sod. I plowed it for corn, followed with beans, then to wheat and seeded to June clover and this last season made one cutting. Now I want to put this field into potatoes and beans, and want to use a fertilizer best adapted to the soil and crop, and want to know what brand of fertilizer to use and how much per acre, and how to apply. Would say that I have covered this land this winter with a good coat of well rotted manure. As I will have to buy potato and bean seed, please tell me what kind for early potatoes would you prefer, how to cut the seed, depth to plant, manner of preparing, planting and caring for the crop, and the time of planting.

Gratiot Co.

M. J. W.

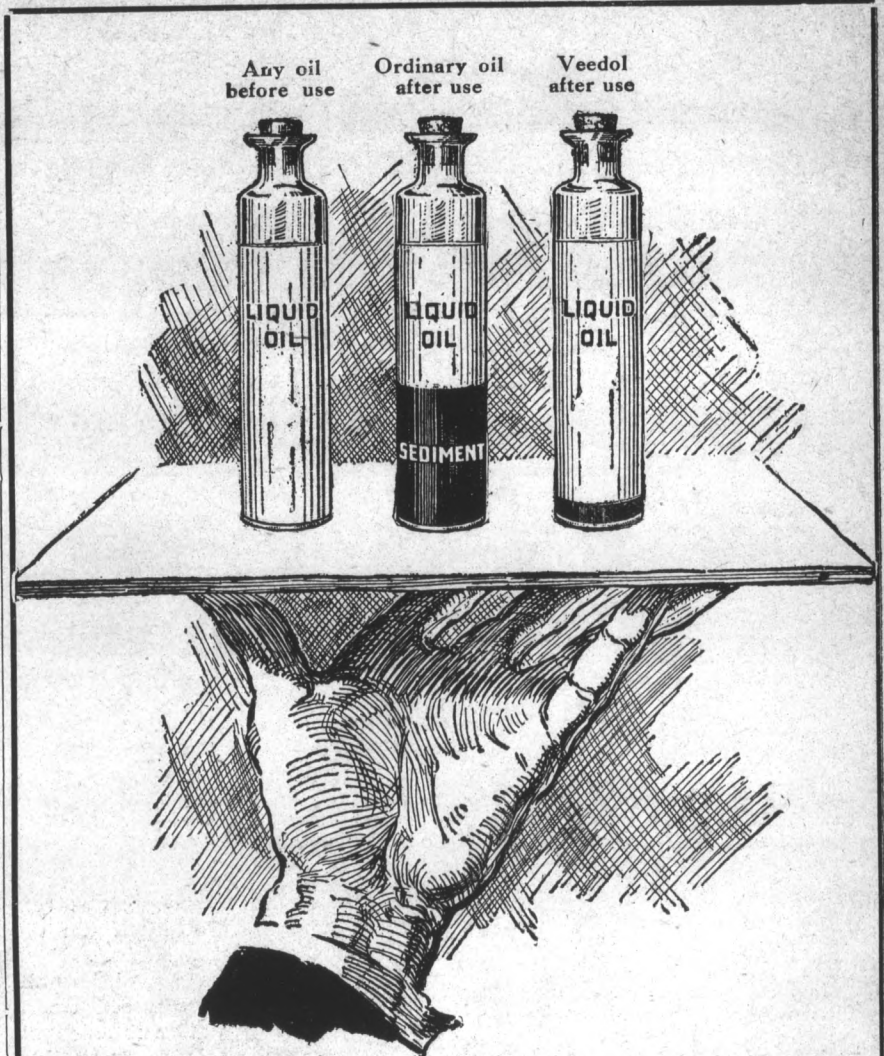
This land is new and has been handled according to the best farm practices. The heavy June grass sod in the first place, and now a good clover sod turned down, will certainly furnish a sufficient amount of nitrogen so that this element need not be considered in a fertilizer for either beans or potatoes. A clay subsoil would indicate an abundance of potash in this soil, and at the present price of potash, I would not consider its purchase advisable for either crop.

I am positive that for beans on this ground nothing is needed except added phosphorus in the form of acid phosphate. Phosphorus hastens maturity and stimulates the development of pods and beans and I believe that an application of about 200 pounds of acid phosphate with a favorable season would assure a splendid crop of beans on this soil.

A potash fertilizer is usually considered necessary for potatoes on a rather light sandy soil. This is undoubtedly true, yet a sandy loam with a heavy clay subsoil ought to furnish sufficient potash for a good potato crop and I believe it will. This soil, however, is quite apt to be deficient in available phosphorus and I would recommend acid phosphate for potatoes in this instance. It might pay you to use a complete fertilizer with one or two per cent of potash but potash is so high that I dislike to recommend it at all.

There are several good varieties of early potatoes—the Early Ohio, the Early Rose, or the Irish Cobbler. As potatoes are very high it will pay this year to cut them pretty close and yet few will want to cut as close as one eye. It is sufficient, however, under proper conditions. I would say cut the potatoes so that there will be no more than two eyes in each hill, that is working it down pretty carefully. The ground wants to be prepared for early potatoes, just as early as possible. The seed bed should be deep and mellow. The potatoes should be planted three or four inches deep. Before the plants are above the ground, the land should be harrowed with a fine, slanting tooth harrow to destroy all weeds.

COLON C. LILLIE.



Scientist finds way to save friction in gasoline engines

60c to make test will save you over \$50 a year

The greatest cause of friction in your automobile or tractor engine is sediment in the oil.

The center bottle shows the amount of black sediment in ordinary automobile oil after 500 miles of use.

Sediment is caused by heat. The temperature of any engine ranges from 200° to 1000°. This terrific heat breaks down all ordinary oil, causing sediment and friction.

Damage is permanent

Oil that contains a large amount of sediment causes friction and wear. That is because the sediment takes the place of the liquid oil. Then the metal to metal surfaces are pressed into each other and the microscopic teeth grab and cut.

Damage caused in this way cannot be repaired. Sooner or later you must throw away the worn parts and buy new ones.

How scientist saves friction

Mr. F. E. Faulkner, of the Platt & Washburn Refining Company, has discovered a way to eliminate almost all sediment and save friction.

Notice the sediment test illustrated above. It shows 50% of sediment in ordinary oil, as against 5% or 6% in Veedol—over seven times as much in the ordinary oil as in Veedol!

This is the best test of a lubricant's efficiency. It is used and endorsed by the U. S. Bureau of Standards.

Veedol is unlike ordinary oil because it is made by the Faulkner Process. This new discovery, used exclusively by this company, gives Veedol its remarkable heat-resisting and wear-resisting properties.

Veedol resists heat—does not evaporate rapidly—does not carbonize if your motor is in good condition—and reduces sediment 86%. This means that by using Veedol, you will save friction and wear, and greatly reduce your operating expenses.

60c to make test will save you over \$50 a year

For 60c more than the cost of ordinary oil, you can buy five gallons of Veedol—enough to run 2,000 to 5,000 miles. So you can easily compare operating costs.

Make the test as follows: Clean out the crank case of your engine. Fill it with kerosene. Run your motor 30 seconds under its own power. Draw out all kerosene and refill with Veedol. Then make a test run over a familiar road, including steep hills and straight, level stretches.

Since sediment is the greatest cause of friction, when you eliminate 86% of the sediment, you save wear and expense.

The road test will prove this. You will find that your motor has acquired new pick-up and hill-climbing ability. It will have less vibration and will give greater gasoline mileage. That is due to the saving of friction.

Users of Veedol find that these savings average from \$50 to \$115 a year.

Veedol is the ideal lubricant for all gasoline engines—automobile, motor boat, tractor and stationary engines. One test will prove to you the efficiency of this wonderful heat-resisting lubricant.

Buy Veedol Today

Over 12,000 dealers sell Veedol. Each dealer has a Veedol Lubrication Chart which specifies the correct grade of Veedol for your car or tractor for both Summer and Winter use. If you cannot get Veedol, write for name of dealer who can supply you. Buy a can of Veedol today—begin now to get full efficiency from your car.

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For washing your car try Keal, the new soap.



It Beats Out the Grain

THE big cylinder throws straw, chaff and grain against the "Man Behind the Gun." 90 percent of the grain is forced out here. The straw goes over; then shakers beat out remaining grain. The farmer saves more of his grain—the thresherman makes more profits. Hire or buy a

Red River Special

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If you are a thresherman, write and learn why Red River Special owners get the big money-making runs. Red River Special outfits are built to thresh fast and well. Speed up your run—get in more good jobs—please more customers—make a bigger income. Save the farmer his thresh bill by saving his grain and time.

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Builders Exclusively of Red River Special
Threshers, Wind Stackers, Feeders, Steam
Traction Engines and Oil-Gas Tractors
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A Handy Barrel Sprayer

Pump handle swings the agitator. Automatic brush cleans intake strainer. Includes 32 gal. barrel, handles and steel wheels 3" wide. Surprisingly easy to operate.

We also make bucket, knapsack, traction and gasoline engine rigs.

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EARLY CABBAGE Brussels Sprouts, Tomato and Celery plants, 12c doz., 15c per 100. Pepper, Cauliflower and Egg plants, 20c doz., 25c per 100. Asparagus, 25c doz., \$1.25 per 100. Parsnips, Cornflower Cosmos, Gladiolus bulbs, 25c doz. Lots more. Ask for list. Ward, Plant Specialist, Hillsdale, Mich.

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Seed Corn Pride of Michigan. Germination guaranteed better than 98%. Sudan grass Michigan grown. H. L. Cole, Palmyra, Mich.

When writing to advertisers please mention The Michigan Farmer.

Overcoming Off Years In the Orchard

THIS is an important problem. The grower who finds a solution will be in a position to obtain the high prices when lean years come. Ability to supply his trade regularly is no less essential to a successful business. To lose customers during a season of scarcity mean that, to a large extent, new ones must be found when he again has fruit to dispose of.

It is my experience that annual fruit crops are possible, in fact, are eminently practicable if the proper methods are followed. In the first place, in propagating my trees I would select buds and cions from stock of regular bearing habits. Every orchardist knows that he has some trees which bear more regularly than others of the same variety. But instead of depending on these trees which have some sort of reputation, the average grower goes to the nurseryman. From him he will almost invariably get cions cut from blocks of young trees which have never fruited, and of whose productivity and pedigree nothing is known. This mode of obtaining cions is followed year after year, and the young trees from such a source has a long line of ancestors which never fruited prior to being propagated from. Is there any wonder that it cannot be depended upon to produce fruit regularly? I believe the time has come when we want a pedigree with our trees. Live stock breeders have long attached the utmost importance to this subject. Now we have pedigreed farm seed. By all means let us have pedigreed trees. The principle of variation is as great in the fruit bud as in seeds or live stock. Why not take advantage of it?

Cultivation Should Start Early.

Cultivation should begin early in the season, before the feeding rootlets have been thrown out. These are produced and die each year, the same as the leaves, and if injured the tree is deprived of more or less nourishment. This soil stirring we continue until the first or second week in July. Thus nature is assisted by surrounding the tree early in the season by conditions favorable to new growth, and later in the season by conditions favorable to the transformation of the leaf bud. It is essential that both of these func-

tions be performed by the tree in one year if it is to yield annual crops. We must have new buds, for when a bud blossoms it dies, and we must have the fruit bud or it cannot blossom. Nature usually takes two years to complete the cycle, hence the off year. It is the work of the skilled orchardist to complete it in one year.

Spraying should be thoroughly and persistently done, not only to protect the fruit from insects and diseases, but to protect the foliage and keep it in good condition as late in the season as possible. All plant food is elaborated in the leaves, and it is that produced in the latter part of the season, in excess of what is required for immediate use, which transforms the leaf bud into the fruit bud. This transformation continues only just so late as there is a healthy foliage on the trees.

In the general work of caring for an orchard there are many little things that will aid materially in regular tree bearing. It is well known that many varieties of all our fruits are self-sterile. Plant trees which bloom at the same time and will fertilize each other side by side. Picking, if carelessly done, may destroy the chances of a yield the following year. When the twigs are broken off with the fruit two years' crop is picked in one. Who has not seen the ground carpeted with small fruiting twigs under a tree that has been carelessly picked?

Pruning should be done while the tree is dormant, and should be light and moderate, so as not to seriously disturb the intimate balance between the roots and the leaf surface. Mature regularly, and according to the needs of each individual tree. In some cases a liberal application will prove beneficial, in others, similar treatment would prevent fruiting.

If we are to have trees bearing annual crops of fruit, it is reasonable that the operations indicated be performed regularly. Different localities, soils and seasons may require some modification of these methods. It is not so much new systems as an intelligent and thoughtful application of what we already know or is within easy reach, that will afford the real remedy for off years in the orchard.

Canada.

J. H. McKENNEY.

RICH GARDENS NEED LIME.

Stable manure is used to a great extent in enriching gardens, and when this is done the soil is very apt to become somewhat acid. Where the soil is not naturally strongly impregnated with lime and heavy applications of manure are made repeatedly it is almost sure to be quite acid. Many crops will thrive in such a soil, but there are some that will not stand an acid soil at all. No legumes will do well in an acid soil, even if but slightly acid.

Lime is the one remedy used for acid soils, and it is very easily applied. Ground limestone, air-slaked lime, or water-slaked lime, or lump lime can be used. A peck of quicklime will be about right for a square rod of garden, and double the amount of slaked lime or of ground limestone will give about the same results. The ground stone or the slaked lime can be scattered easily, but the quicklime will have to be piled in small piles and allowed to slake before it can be distributed. In slaking with water do not use much, just enough so the stone will slake quickly and will make a dry powder when through.

Commercial fertilizers can be used on soil that has been well limed, but they should not be applied at the same time or with the lime. Lime has a tendency to immediately release the food elements, and they are wasted. While this is a detriment when used with

commercial fertilizers, it is one of the greatest points of value in lime applications to ordinary soils, for the lime acts in the same way on the stored but unavailable elements in the soil. It tends to make them available at once. While lime is not a fertilizer in itself it is often thought to be when plants show such marked growth after its application, due to the lime's action on the elements already in the soil but not in a condition to be used by the plants.

L. H. COBB.

TROUBLE DEPARTMENT.

Cutworms.

Is there anything to prevent cutworms from cutting onions off? Would a timothy sod be liable to contain cutworms if plowed this spring for onions?

D. L. L.

A common remedy for the cutworm is poisoned bran mash, which is made as follows: One quart of bran, one teaspoonful Paris Green and one tablespoon of molasses.

Mix the Paris Green and bran when dry. After they are thoroughly mixed, add sufficient water to moisten slightly, after which add the molasses. This should be scattered around the plants, but care should be taken to keep poultry from the ground on which it is to be used.

Timothy sod may have cutworms in it, but usually they are more prevalent in soil which is loose and easily worked. Undoubtedly the plowing and preparing of this sod before planting would do much toward destroying whatever cutworms would be in it.

As for onions, the ground should be very thoroughly prepared before it is planted. It is preferable under most all circumstances to plow the ground in the fall.

Hen Manure for Garden Purposes.

In what way, and in what proportion can hen manure be best used on a garden?

St. Clair Co.

W. H. W.

A common way of using hen manure for garden purposes is to mix it with an equal amount of dry earth, crush it, and then spread it by hand. The amount necessary of course depends upon the condition of the garden soil. A liberal application spread broadcast however, will be beneficial in most all cases.

Usually the dust is applied on the dropping boards in the coop, as it helps to keep the coop sanitary, and absorbs the moisture, also prevents the nitrogen in the manure from escaping.

For a complete fertilizer containing hen manure, the following is good: Four hundred pounds of hen manure, pounds muriate of potash, 150 pounds 200 pounds of dissolved bone, 100 of plaster and 100 pounds of nitrate of soda.

At present you would probably have some difficulty in getting the muriate of potash and nitrate of soda, and therefore 300 pounds of dissolved bone and 150 pounds of plaster added to the manure would be the best combination under present circumstances.

Onion Maggot.

In raising onions I have been troubled with grubs eating them when they are about three weeks old. They start from the bottom and eat up through the center of the plant. Could you tell me what causes these small grubs and whether there is anything I could put in the ground before planting the seed to do away with them?

N. B.

The grub which attacks your onions is the onion maggot, which is probably the most serious pest of the onion.

The eggs of this insect are laid on the tops and the grub works its way down into the bulb. Practical means of control are wanting. On small patches the use of carbolic acid emulsion has proved efficient. Liberal amounts of tobacco dust spread along the rows has proven a fairly good deterrent.

The most practical way of ridding the onions of this pest is to make the new planting as far removed from the old one as possible.



Scientific facts prove the drug, caffeine, in coffee is harmful to many, while the pure food-drink—

POSTUM

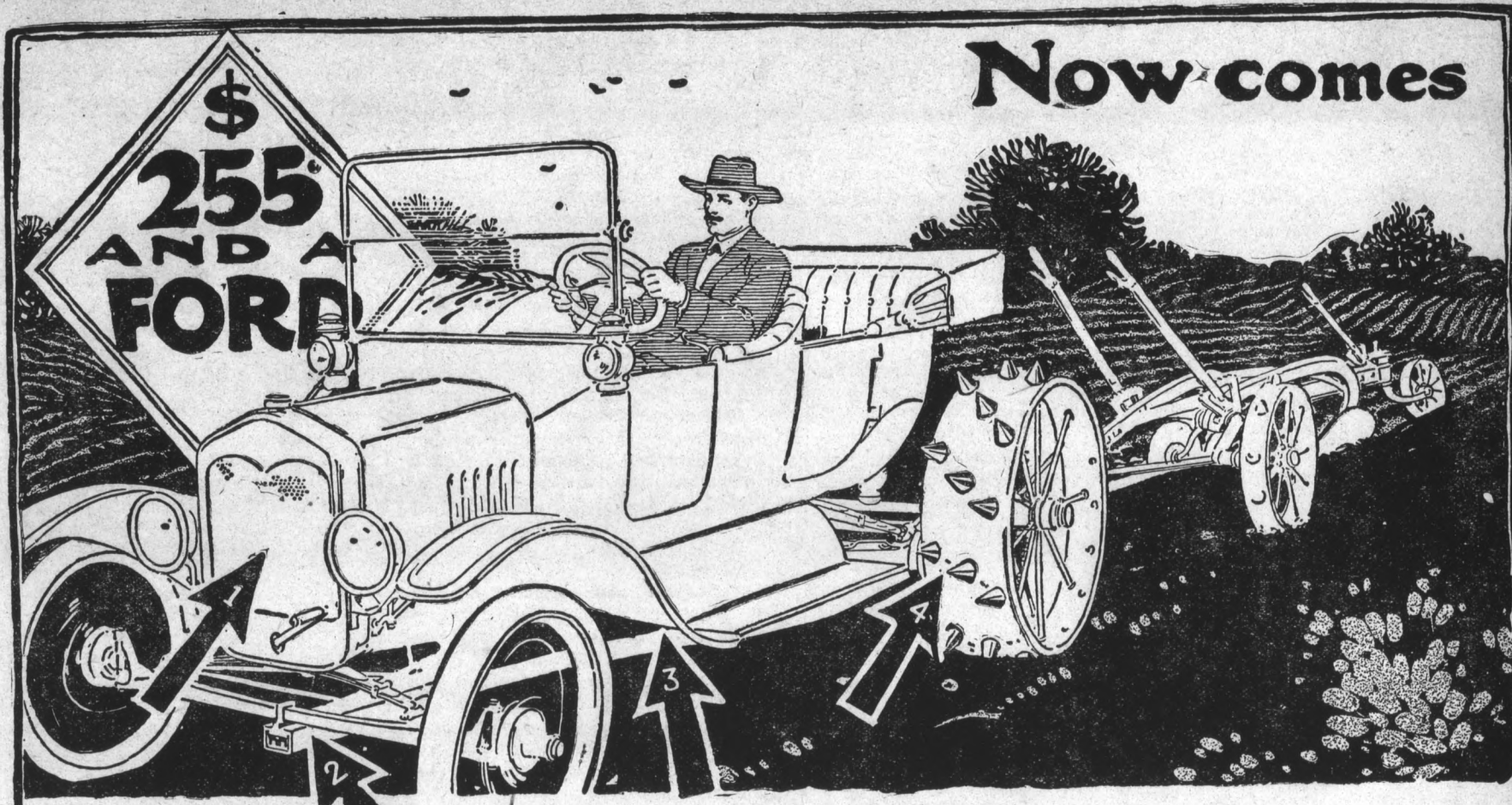
is not only free from drugs, but is economical, delicious and nourishing.

Made of wheat and a bit of wholesome molasses, Postum is highly recommended by physicians for those with whom coffee disagrees.

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and any other farm work that you have been doing with horses.

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If you cannot get in touch with a dealer quickly enough, send us the coupon. Accompany it with a deposit of \$10 and we will ship your Smith Form-a-Tractor immediately, subject to payment of sight draft attached to bill of lading. Whatever you do, get Smith Form-a-Tractor working in your fields just as quickly as possible.

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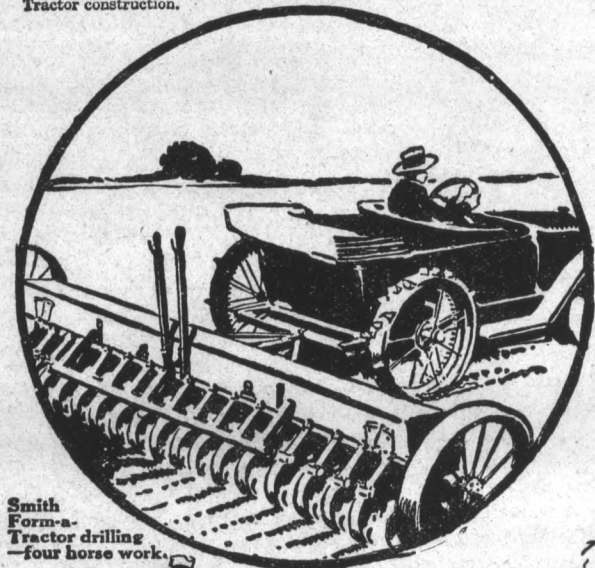
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.....horses for my farm work.

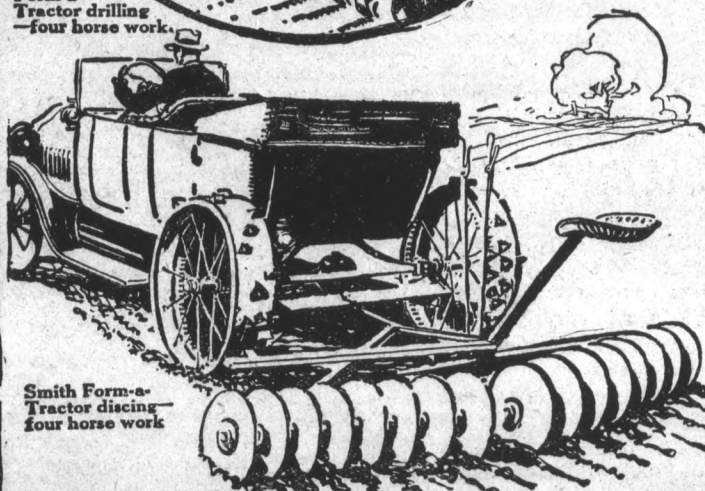
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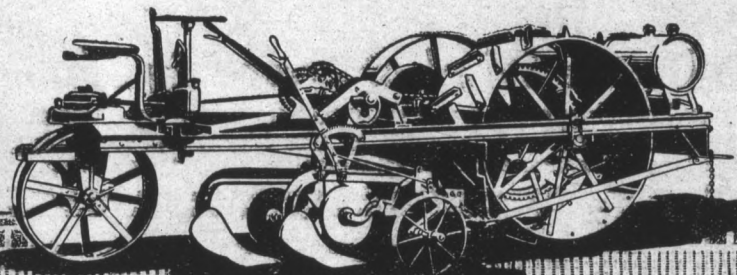
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Elimination of Waste In Hog Feeding

By L. W. OVIATT

Let us first consider this matter of waste in a general way. We all recognize that the actual value of the food consumed by the animal costs so nearly the price obtained for the product that there is really a very narrow margin of profit, if any profit at all. And this statement only contemplates the food actually consumed and utilized by the animal. Thus we can readily see that there is no room for any item of waste in our calculation. For as we see, any waste must be figured out of this narrow margin of net profit. Consequently if this waste be only a comparatively small amount, yet it may easily be enough to wipe out entirely this net profit.

Again, it is important, we realize, that only that portion of the food consumed that the animal can digest, assimilate and distribute through the medium of the blood that can be used to increase bodily weight or turned into dairy products.

Well-bred Animals Digest Food Better.

Thus we must consider not only the food the animal is to consume, but see to it that food is in a condition that it can be readily digested and assimilated. And just here is where well-bred animals show their superiority over mongrels, in their power to better digest and assimilate the foods consumed. But important as this matter of good breeding is, yet the matter of the health and vigor of the animal means even more. For in all our experience as well as observation, we have noted a healthy, vigorous mongrel will put on flesh more cheaply than the very best bred animal that is out of condition or stunted.

So the wise feeder will see that he has well-bred animals that are vigorous and healthy and then that he has plenty of good clean, wholesome feed.

Thus we see that waste may occur, not only by letting it be lost or dissipated before it is taken up by the animal, but by allowing the food to become contaminated by filth or dirt that puts it in a condition so that it cannot be readily digested and assimilated. How many times have you seen careless men go out and pour good feed into a hog trough nearly half full of the worst kind of slop and filth. But he thinks, "Oh, they are just hogs," and true it is, they will eat it, as almost no other animal will; but let us follow this mass of filth through the digestive tract of the animal. Nature is clean and simply cannot handle this filth. So before this food can be used, nature must simply stop operations until all this filth is sorted out and disposed of. Thus the organs that dispose of the waste are over-taxed and often more or less diseased, and thus the whole process of digestion and assimilation is retarded and weakened, and all this time the careless feeder is paying very dearly for his lack of proper care and attention. This holds true when corn or any grain is thrown over into a filthy pen and, whether we recognize it or not, the fact remains the same, that instead of the animal organs commencing at once the building up process they must turn to this sorting and casting off process, and much good food will be dissipated in doing so. So the successful feeder will see to it that he not only has good feed for his stock but that that food shall be in a condition the animal can make the best possible use of it.

Hogs Following Cattle.

But I think I hear someone say, "How about hogs following cattle?" But you will understand those fresh droppings, while they seem so repulsive to us, are by no means like the much decayed filth of an old hog pen. Again referring to the waste that occurs before the feed really gets to the animal: How many farmers go out and, reaching over the pen, try to

pour feed into some loose trough which each pig is trying its best to get directly at the falling slop. It is needless to say that in this way much of the feed will be thrown out where it can never be recovered by the animals. Or where ground feed is used in a poorly constructed trough much may be rooted over and never recovered.

And just these little things may easily mean the difference between a reasonable profit and an actual loss. And we have noted the most successful dairyman or feeder today is the man who pays the closest attention to the little details of his business, especially when the price of feed is where it is today. And when labor is as scarce as it is now the actual convenience of a properly constructed hog feeder will often pay for its construction and save many times its cost by eliminating waste. In a later issue we will try to describe one that has proven itself to be very nearly ideal.

BARN WALL.

Will you please answer the following questions? Is a wall made of concrete one foot thick strong enough for a barn 30x40 feet, to stand the strain of a threshing machine? Also, what proportions should concrete be mixed for the greatest possible strength? Could the wall be built with less thickness if one would make it stronger where loads enter the barn?

Tuscola Co.

W. S.

A barn wall eight feet high for a basement barn would be amply strong enough if made one foot thick of solid concrete to sustain the load of a threshing machine, or other heavy machines passing over. While it is customary to build ten to twelve inches thick, an eight-inch wall of good concrete which is widened at the base to form a footing would be amply strong to sustain this same load.

A good plan in making this wall would be to build it eight or ten inches thick and build pilasters or columns under the supporting beams where threshers or other heavy loads are to be taken into the barn.

If gravel is obtained from the pit a mixture of one to six would make an excellent concrete. Much attention should be paid to the quality of the gravel. It should be clean, of course, and well graded in size from fine to coarse. It is advisable to obtain gravel if possible which has half as much sand as gravel, (sand meaning the material which will pass through a screen having a quarter-inch mesh and gravel material which will remain on it). This will make better concrete than gravel in which the pebbles are all fine or all coarse. In pouring the concrete it is well to mix it thoroughly and wet enough so that it will almost run in the forms. It should not be wet enough, however, so that a great deal of liquid is lost when it is placed in the forms. When poured in this consistency it is possible to work it into place with a board or a two-by-four, and produce a smooth, strong concrete which is reasonably air and water-tight.

Mich. Ag. Col. H. H. MUSSELMAN.

PIG CLUBS.

Last June there were over 21,000 members in the pig clubs directed by the Department of Agriculture. This is almost double the number recorded on the first of January of that same year—a remarkable increase in only six months. The work of the pig clubs is looked after by W. F. Ward, of the Bureau of Animal Industry.

Sold Out.

F. J. Wilber, Clio, under date of March 29, writes: "Please discontinue my Aberdeen-Angus stock ad. Am all sold out. The Michigan Farmer certainly reaches the buyers."

When Writing to advertisers please mention The Michigan Farmer.

HEAVY OR LIGHT HORSES.

I have a farm of 160 acres of sandy loam. I am keeping six horses on this farm, one team weighing 3100 pounds. The other four weigh about 1200 lbs. What would be the most profitable, sell the team of 3100 lbs. and buy another team of about 1200 lbs. each, or keep this team? I need six horses?
Allegan Co. E. H.

A 1200-pound horse is a pretty serviceable horse on a farm. They can do as much or more of some kinds of farm work than a heavier horse. They excell at harrowing, cultivating, working on the mowing machine, etc., but when it comes to plowing sod or hauling heavy loads to market they are outclassed by 1600-pound horses.

You might make money temporarily by selling the large team at a good price, and buying light horses, but I doubt if you would gain in the long run. On 160 acres farm work can be found for a heavy team that is really too hard for a light team. Of course, three light horses will do this work, but they are not as handy and convenient to use, especially on the road. My opinion is that one team, especially is an advantage if they weigh 3000 pounds or more.

We used to argue that the 1200-pound horse was necessary for a road horse and he was, but now the auto takes his place and more. You can get along without this heavy team, but my opinion is, if you will sell them you will miss them. COLON C. LILLIE.

SELF-FED PIGS ARE BETTER.

Officials of the Bureau of Animal Industry, Department of Agriculture, are convinced that self-fed pigs are better than hand-fed pigs. The conclusion has been reached after elaborate experiments were made at the department's farm at Beltsville, Md., just outside of Washington.

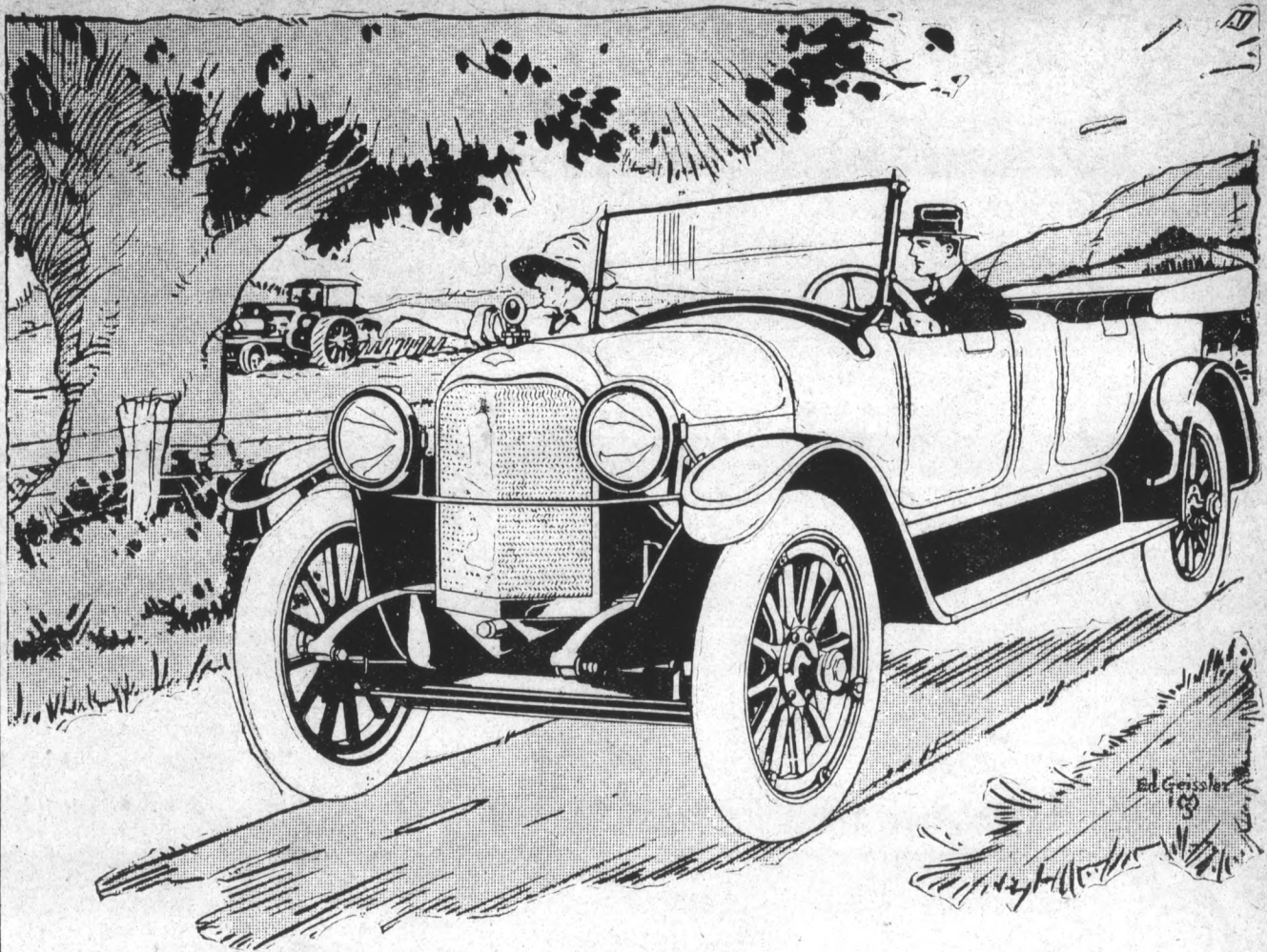
The value of this self-feeder method of fattening pigs was demonstrated beyond question, according to those who had charge of the experimental work. The object of the test was to determine the value of this system as compared with ordinary hand-feeding.

The pigs used in this experiment were grade Berkshires, averaging ninety-three pounds per head when the experiment started. They were fairly uniform in size and age, but were not the best pigs in the farrow. The hand-fed lot were fed three times daily, the amount being governed by the appetites. The ration given the hand-fed hogs was composed of five parts corn meal, four parts middlings and one part tankage. The corn meal and supplements were mixed dry. Just before feeding, the amount to be fed was weighed and then mixed into a thick slop, enough water being used to make it pour out of the bucket without sticking. The feeding was done at seven and 11:30 o'clock in the forenoon and 4:30 o'clock in the afternoon.

Corn meal, middlings and tankage in separate compartments of a self-feeder, on the other hand, could be obtained at all times by the self-fed lot of pigs. Close watch was kept on the feeder, and a supply of each feed maintained. Both lots of pigs were kept in dry lots a quarter of an acre in size. The pigs were given ample room for exercise and sufficient shelter.

All the pigs in the self-feeder lot maintained keen appetites during the seventy days of feeding, according to the specialists. The hand-fed pigs averaged ninety-four pounds per head, and the self-fed averaged ninety-two pounds per head at the beginning of the test. At the end of the seventy days the hand-fed averaged 167.5 pounds per head and the self-fed pigs averaged 205 pounds, 37.5 pounds more than the hand-fed pigs.

It was also noted that the self-fed pigs consumed a greater quantity of feed per head during the test than the hand-fed pigs, but it took only 405 pounds of feed to produce 100 pounds gain in the case of the self-fed pigs, at a cost of \$5.67, while the hand-fed pigs produced 100 pounds gain at a cost of \$6.24. As a final result the experts found that the self-fed pigs made a better showing, surpassing the hand-fed lot in both rate and economy gains.



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enough GOODNESS left in a Paige to command the record price in used car markets.

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As to the selection of a model, this is simply a matter of your own personal requirements.

In our line there are two seven-passenger cars, a five-passenger car and two roadsters. You, alone, can make a choice, but please remember that you can't make a *mistake*. For all of these models are Paiges—blood brothers of the same strain. That is the really important thing.

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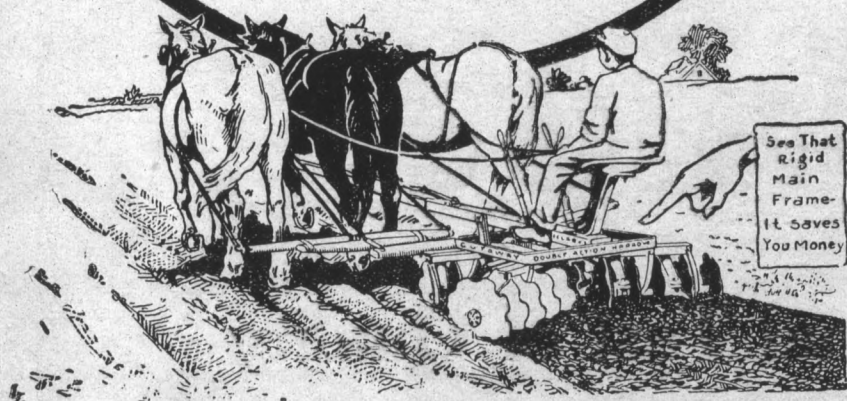
as well as after, with a CUTAWAY (CLARK) Double Action Disk Harrow; makes plowing easier, gives better results. Every particle of soil is thoroughly stirred because the rigid frame—a patented feature—forces the rear disks to cut just between the furrows of the fore disks.

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Looking to the Dairy Sire

By N. A. CLAPP

IT has become a very common custom of people to urge upon farmers and dairymen the advice, which they give freely, in regard to selecting the heifer calves. It is the old plan to select the heifer calf from the best cows in the herd, and disregarding the beneficial influences which can be derived from the sire.

In fact, until recent years very little attention was given to the influence of the sires upon the female progeny. To use a common saying among the breeders of ancient times, "That a good cow may have a bad calf," automatic saying is that they relied entirely upon the maternal influences in fixing the character and the capabilities of the young heifers.

Great Progress in Breeding.

During the last two centuries great progress has been made in the art of selecting, breeding and improving our domestic cattle. It has been discovered that the same ancestral influences which prevail with the humans apply to our domestic animals. The students of human nature during the last century say that a new rule which they often quoted, "As like father like daughter, like mother like son," comes nearer expressing what might be expected from the breeding of the stock in order to improve the capabilities of the heifers, so that in recent years very much attention has been paid to the selection of the sire.

The rule we have quoted gives us the key to the requirements when we remember that the male inherits from his mother the characteristics which she has inherited from her sire, we at once see the wisdom in being very careful in selecting the sires. In fact, the modern methods of selection and breeding in the manner above mentioned, has revolutionized, to a great extent, the art of breeding for improvement along the line of milk and butter production.

Breeding Increases Milk Production.

While the male usually inherits the characteristics of a mother with a record he may be of little value because he lacks prepotency. Therefore in the selection of a sire we must use care, selecting one who is able to transmit his mother's characteristics to the next generation.

With the progress that has been made within the last forty years, the average production of milk in the dairy herds has leaped from three thousand and four hundred pounds per cow per year to eight thousand and ten thousand pounds per cow per year. By the process of selecting and breeding animals that have greater capabilities, great results have been obtained, until the amount produced by a single cow in one year is very remarkable. We will refer to the Holstein cow, Tilla Alcarta, of California, which yielded during the year of 1913-1914, 30,452 pounds of milk in one year. These facts are worthy of consideration by all who make the breeding of their dairy cows on the farm a business, and illustrates what possibilities there are before those who will give the matter not only study and attention, but put the rules in practice.

Give More Attention to Sires.

During these years of high prices for dairy products, it is certainly worth the while to give attention to the methods which will give better results than have been obtained in the past. Instead of putting the entire emphasis upon the cows from which the heifer calves are selected, give more attention to the character of the sires to which the cows in the herd are bred. If the sire is descended from a long line of ancestors, which have great records for production, good results may be expected. A step forward can be taken, and if repeated for a long pe-

riod of years, achievements may be attained that will exceed anything at first anticipated.

The man who is devising means and studying plans by which he can increase the productiveness of the animals in his herd is but fulfilling his duty to himself, to his family, and to the community in which he lives. To be satisfied with achievements attained a decade ago is, in a certain sense, criminal. To keep abreast with the progress of the times, and enjoy the blessings and privileges of this progressive age, should be the ambition of the twentieth century dairyman. The time will soon be at hand when the dairy cows will be bred for the 1918 crop of calves. Consider well the sire to which they are bred, and make some improvement in the quality of the calves, if practicable.

HOLSTEIN BREEDERS IN SESSION.

The West Michigan Holstein Breeders' Association held the last one of this year's series of three winter meetings at Grand Rapids, April 4, and Vice-president B. E. Hardy, of Owosso, presided in the absence of President Willard. This successful organization, whose motto is "Honesty and Progress," will hold its quality sale of Holstein cattle at the West Michigan fair grounds, Grand Rapids, on Tuesday, June 19, with prospects that 80 head of cattle will be consigned for this sale, and the morning session was devoted to a discussion of cattle sales by H. E. Rising, of Woodland, Vice-president Hardy, and others.

Dr. George W. Dunphy, of Lansing, Michigan, state veterinarian, was on the program for the afternoon to discuss the plan and purpose of state accredited herds and its advantages and benefits for the Holstein breeder, but he was unable to be present and the subject was discussed by Secretary W. R. Harper, of Middleville, and others. Mr. Harper stated that Dr. Dunphy has written the federal board of animal industry for working plans which are being submitted to live stock boards of different states, so that this information may go out to Michigan breeders. A uniform plan is desired in the states. Wisconsin breeders have started in on their own account and already have a list of 150 to 200 accredited herds, with cattle that the regular tests have shown to be clean, and in the case of sales it is not necessary to repeat the tests. Michigan breeders are talking of going into it and in time it is certain that a majority of the pure-bred herds in the state will be under either the federal tests or under state inspection.

H. G. Smith, farm expert of Kent county, states that this county leads in the club work of boys and girls and that work with calves and live stock is likely to be taken up soon. He urged the association to extend its influence in the direction of standardization of breeds and he foresaw the time when every farmer will make use of a pure-bred sire of some standard kind in his herd. Since grade cattle are sure to be with us for many years he advised that these herds be well cared for and built up.

ALMOND GRIFFEN.

DAIRY PROBLEMS.

Best Ensilage Corn.

Will you please advise me as to what kind of corn to plant for ensilage, how much to plant to the acre, and what is the best way, drill it or sow it both ways?

Van Buren Co.

E. T.

I think the best ensilage corn is that variety that will produce the greatest growth and properly mature in our climate. I used to think that the ordinary Dent corn which we grew to husk

and feed would be better but I am now of the opinion that seed corn from two or three hundred miles south of us will produce much more per acre than corn that will thoroughly ripen in this climate. I have never advocated leaving corn stand until it is dead ripe before it is put into the silo; I think you get more out of it when you put it into the silo at the stage of development when the kernels of the corn are just glazed, just a little beyond the roasting stage. This is when the corn plant contains the largest amount of digestible nutrients; that is when it is most palatable. Now, any kind of Dent corn from southern Ohio or Indiana will develop nicely for silos and you can get, in many instances, twice as many tons per acre as you can with the earlier kinds of corn that are suitable to the climate here.

I would hardly advise getting corn from Virginia or the Carolinas because this corn is liable not to develop sufficiently, but any good Dent corn that was grown last year in southern Ohio, Indiana or Kentucky, I believe to be the best kind of corn to grow in Michigan for ensilage.

Peas vs. Corn for Feed.

How would a good crop of field peas compare with a good crop of corn in feeding value for cows, horses and poultry? Are the peas as sure a crop as the corn? Is there a practical way to harvest the peas if sown alone, or would it be better to mix them with oats? If sown with oats can the crop be harvested in such a stage that the grain will be developed and the straw make good hay? Do you know anything about the variety called The Bismark Hog Feed Pea? H. T. L.

Peas really ought not to be compared with corn. One is a protein feed, the other a carbonaceous feed. They should be fed together, one supplementary to the other to balance the ration. So far as food nutrients go there is not much difference in the total in a ton of each, but the peas contain more protein and the corn more carbohydrates—starch and sugar.

Peas can be cut with a mowing machine if the swath is removed so the horses and machine will not pass over them.

There is a regular pea harvester, something like a self-rake reaper, that works satisfactorily. Some people seed mammoth clover or rape, etc., with the peas so these plants will hold the pea vines off the ground a little way so they can be cut readily. If you want the grain for feed, better sow this with oats as the oats are good also. If cut before the crop is dead ripe the straw is very good feed, better than timothy hay for cows and sheep.

I do not know of this variety, but it is probably a variety of common Canada peas. These common field peas are what you want. Field peas can be purchased of any of our commercial seed houses.

I would not do away with the corn crop. Put it in the silo for your cows. Then you will not have to husk it. A few acres of oats and peas will help you out. Don't give up the potatoes or beans either. Disking pea ground is all that is necessary for wheat.

Peas and Oats for Soiling Crop.

I want to sow some peas and oats, or something else that I can cut and feed my cows when the pasture gets short. How much of each kind of seed peas and oats should I sow to the acre? Soil is good clay loam. Have you anything better? A. W. W.

There probably is no better crop to grow to help out early pasture than peas and oats, but to do well this crop should be planted early, just as soon as the ground will do to work, and then they will be ready for feeding in a green condition the last of June or the first of July. Usually at this time of the year we have good pasture. If not needed for pasture, however, they can be made into hay and used in that way. Of course, this crop can be sown later but the chances are that you will not get as good a yield.

COLON C. LILLIE.

Friction

Is the Problem Solved in Hudson Super-Six

This is to give you a clear understanding of what the Super-Six motor means.

This is why it holds unquestioned the leading place in Motordom. Why it won all the worth-while records. Why it stopped the trend toward Eights and Twelves. And why it gave supremacy—perhaps forever—to this new type of a Six.

What Friction Does

Motion causes friction. You know this in farm machinery. It is friction that finally destroys it.

In a high-speed motor the vibration makes friction a big problem. A large part of the power is consumed by it. The motor's endurance is limited.

So the chief problem in motor car engineering has been the reduction of friction.

Sixes Disappointed

The Six-type was adopted to lessen this vibration. The Light Six, with small bore, was made to lessen it further. But the highest attainment in a Light Six proved a disappointment. Motor friction was not reduced as engineers had hoped.

So some leading makers, including the Hudson, started tests with Eights and Twelves. It was hoped that twin motors, set at angles, would solve the friction problem.

Then Came This

That was in 1915. Many engineers thought the Six type was doomed. That the V-types would displace it, as they had in certain cars.

But in that year Hudson engineers invented the Super-Six. In December, 1915, we were granted patents on it.

Tests proved that this invention added 80 per cent to the efficiency of the Six. And it did that solely by reducing friction beyond any other type.

All Records Won

Last year, in a hundred tests, the Super-Six won all the stock-car records which can prove a motor's value. It won the records for speed, for hill-climbing, for quick acceleration and endurance.

It broke the 24-hour endurance record by 32 per cent. It twice broke the transcontinental record in one continuous 7000-mile round trip.

So, in performance and endurance, the Super-Six has no rival. And that is due to the fact that friction is reduced almost to nil.

The Economy Car

This endurance will probably double the life of the Hudson car. The reduction of friction saves immense power waste.

In addition, we this year add to the Hudson a wonderful gasoline saver.

So the Hudson Super-Six means economy to you. It means a daily saving—in the long run, a very big saving.

It means pride in your car. The Super-Six owner knows that he rules the road. And, in beauty and luxury, the car stands out as a master-piece in any crowd.

You can have all this, and still save money, because of the Super-Six economies. These are things to consider well when you buy a car to keep.

If you don't know the nearest Hudson dealer, ask us for his name. Let him show you all the ways in which this master car excels.



Phaeton, 7-passenger, \$1650
Cabriolet, 3-passenger, 1950

Touring Sedan . . . \$2175
Limousine . . . 2925
(All prices f.o.b. Detroit)

Town Car . . . \$2925
Town Car Landaulet . . . 3025
Limousine Landaulet . . . 3025

HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN



THE INDIANA SILO

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

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

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

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

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

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

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

INDIANA SILO CO.

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

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

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

FOR SALE
Early Ohio Potatoes for Seed
Grown in the famous Red River Valley of Minnesota.
CHAS. W. RUDD & SON
518 West Jefferson Ave., Detroit, Mich.

Only \$2 Down One Year to Pay!

\$24 Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in five larger sizes up to No. 8 shown here.

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

ALBAUGH-DOVER CO. (INC.)
2165 Marshall Blvd. CHICAGO

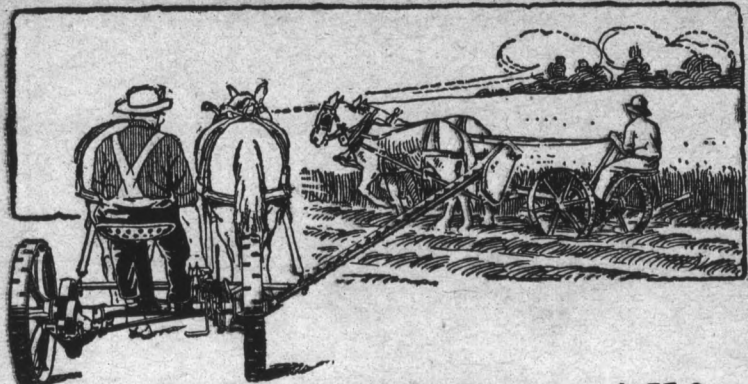
FARM WAGONS
High or low wheels—steel or wood—wide or narrow tires. Wagon parts of all kinds. Wheels to fit any running gear. Catalog illustrated in colors free.

LEARN AUCTIONEERING at World's Original and Greatest School and become independent with no capital invested. Every branch of the business taught in 5 weeks. Write today for free catalog.

JONES' NAT'L SCHOOL OF AUCTIONEERING,
28 N. Sacramento Blvd., Chicago, Ill. Carey M. Jones, Pres.

15 H. P. Second Hand Gasoline Engine, running condition, for sale by The Dighton Grain Co., Dighton, Mich.

Mention The Michigan Farmer When Writing Advertisers



Good Hay-Makers All!

HAY fields without International Harvester mowers, rakes and tedders upon them at some time in the season, give you almost as strange a situation as hayfields without hay. That is how popular **Champion, Deering, McCormick, Milwaukee, Osborne and Plano** hay tools have been on thousands upon thousands of farms for seventy-five years. Last year 40,000,000 American acres were mowed by mowers on each of which was one of these names. That means they are very good mowers. Just as good rakes and tedders followed. If your own hay making is not being done by hay tools chosen from these lines, at least it is certain that they are doing the work for the majority of your neighbors. This year there will be more than ever sold, and they will be better built than ever.

Choose an International Harvester mower, rake and tedder. That means good, easy hay making, long service, prompt repair service if you need it. **Champion, Deering, McCormick, Milwaukee, Osborne and Plano**—safe names in the haying season. Write us for a catalogue on any line. Get posted early.

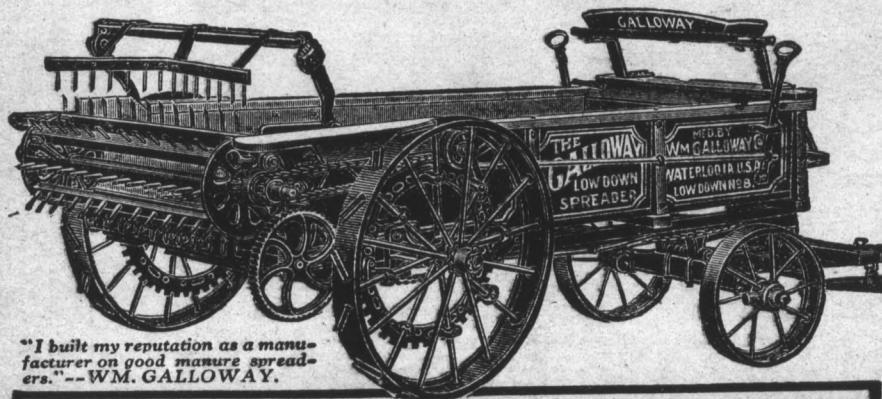
International Harvester Company of America

(Incorporated)

CHICAGO

U S A

Champion Deering McCormick Milwaukee Osborne Plano



"I built my reputation as a manufacturer on good manure spreaders."—WM. GALLOWAY.

JUDGE SPREADERS BY THIS NO. 8

Compare big, clumsy, ponderous, old-fashioned spreaders, which sell for more money, to this modern, down-to-date, patent covered Galloway 1917 Model Low Down No. 8 spreader (or to my popular No. 1A and No. 6 machines) with its double chain drive, roller feed, endless apron, and, above all, its light draft, and it will prove to you that its down-to-the-minute scientific construction, patented, exclusive improvements and features put it in a class by itself. And remember that it is sold to you guaranteed to give you satisfaction by Galloway himself—that it is not a horse-killer, that it does the same amount of spreading with two horses that others do with three and even four, and that the Galloway takes less actual horse power than any other so-called two-horse spreader on the market. My book tells the whole story. I want you to get it.

BACKED BY A \$25,000 BOND which absolutely protects you and proves that I will do what I say I will. I want you to try a Galloway spreader. I take all the risk. I want you to fully investigate every claim I make about Galloway spreaders, because I build them so good right here in Waterloo in my own chain of factories and sell them on.

SIX SELLING PLANS cash or time, that themselves will back up every statement I make. Pay for this spreader on your terms. Pay it now—use it all winter and spring. Pay for it next fall. Complete particulars of these six easy selling plans in my new book which tells all about engines, spreaders, separators, tractors, farm implements.

GET THIS BOOK NOW! It tells the secrets and facts about manure spreaders, how they are manufactured and gives you other valuable information on the handling of the manure crop on the farm. Remember we are MANURE SPREADER MANUFACTURING SPECIALISTS. The new 1917 book tells the whole story. A postal gets it. Ask for it today.

WM. GALLOWAY, Pres., WM. GALLOWAY COMPANY

Manure Spreader Manufacturing Specialists

189 Galloway Station

WATERLOO, IOWA

INCREASE YOUR CORN YIELD WITH A KRAUS CULTIVATOR

IT WILL MAKE EVERY ACRE WORK HARDER.

On the KRAUS a touch of the foot moves the shovels and wheels right or left instantly at the same time. The horses furnish the power. Driver only steers. A boy old enough to drive can operate the KRAUS easily. The KRAUS is a QUICK DODGER IN CROOKED ROWS AND IS A PERFECT HILLSIDE WORKER. Built of steel and malleable iron, it outwears two to three ordinary riding cultivators. Our printed matter contains government statistics to prove this claim.

The Akron Fertilizer Attachment applies commercial fertilizer while cultivating. Learn how to get better crops. Write for free booklet today.

THE AKRON CULTIVATOR CO. DEPT. 6, AKRON, OHIO.

Mention The Michigan Farmer When Writing Advertisers

SAVES A TEAM

4 H. P. Cushman on a Binder. Same Engine Does All Other Farm Work.

The one successful Binder Engine. Attachments for any binder. Two horses easily pull 18-ft. binder in heavy grain, as engine drives sickle and all machinery.

Cushman Light Weight Engines

For All Farm Work

Throttle Governed. Very light weight. 4 H. P. only 190 lbs. Forced water cooling system prevents overheating. Tank on front balance engine on rear. Friction Clutch Pulley. Ask for Engine Book. 4 to 20 H. P.

Cushman Motor Works
826 North 21st Street
LINCOLN, NEBRASKA

4 H. P. Outfit for All Purpose Work. Same Engine Used on Binder

Marketing Broilers for Profit

By F. F. HUNSTOCK

WHILE egg production seems to be the chief end of poultry keeping, the raising of fryers or broilers for the early market may be turned to very profitable account. To secure the highest profits, however, there ought to be some consideration given to preparing the broilers and marketing them satisfactorily. If one's time is worth anything, the question of marketing poultry products with the least loss of time enters into the account. In the best markets prices for broilers are high and remunerative. But profits from poultry keeping on farms or on the commercial plant may be increased by means of private trade, for this insures much higher prices than can be secured of the wholesaler.

With the development of a safe and sound system of postal express, the opportunity for profit making from poultry products was never better than it is at the present time. Under any circumstances, the production of broilers from the culls of the average flock of spring chickens may be made a very profitable source of income at a time of the year when ready money is in great demand, and while one is preparing for a profitable winter egg production. The raising and fattening of young cockerels for the broiled trade in connection with the selection and careful feeding of the most promising pullets make it possible to add materially to one's income providing a sufficient number of the right kind of poultry are kept for the purpose.

The most important suggestion is the improvement of farm poultry stock. There is altogether too much indifference regarding the value of maintaining the vigor of poultry, no matter for what purpose they may be kept. The farmer who lets his flock run down will not succeed either in the profitable production of eggs or broilers. The farmer very often makes a very serious mistake in taking the largest and best developed chickens for market and keeping the smaller and poorer chickens for his own use. This may bring better money returns for the time being, but a few generations of this practice will bring the whole flock to the level of the culls.

For the broiler trade, the maintenance of a vigorous line of fowls is the first consideration. Consequently, the pick of the flock from both the male and female sides should be kept on the farm for breeding purposes and the introduction of new blood every year is practically necessary for maintaining the highest vitality of the fowls. While this method of selection may diminish the farmer's income temporarily, it will prove much more profitable in producing a race of more rapidly growing broilers in a generation or two. The ordinary methods of handling and marketing young chickens for the broiler trade can be greatly improved to the great financial advantage of the farmer. Culls which prove of little value for maintaining the vigor of flocks may be easily turned to profitable account by being fitted for the broiler trade without much additional expenditure of feed or labor.

Another consideration of some importance in raising young chickens as broilers is to keep one or more of the heavier breeds of fowls, such as the Plymouth Rocks, Wyandottes or Rhode Island Reds. Many markets prefer white-feathered chickens for the broiler trade because the pin feathers do not show so prominently and the chicken presents a fine appearance when well dressed. With the heavy breeds of fowls broiler raising may be made quite profitable, providing the chickens are not marketed too soon. Here is where so many farmers make a grave mistake. After chicks have reached the age of six or eight weeks, they will

with proper care grow more rapidly during the next five or six weeks than during the whole first period of their growth. In the commission markets in Chicago I have frequently seen crates of chickens being marketed for broilers that were not more than six or eight weeks old apparently.

If they were older, then they were of inferior size and quality for their age. The advantage to the farmer in keeping chickens for broilers until they are about fifteen weeks old are that they require less care, grow more rapidly, and will bring a higher percentage of profit on the basis of feed consumed than for the first eight weeks.

If young chickens intended for broilers are sold a few weeks sooner than they ought to be, they do not always pass into the retail trade without any further fattening. Many crates of young chickens sold to commission men broilers are either sold again to persons who make a specialty of fattening them for special trade or they are bought by private residents in the suburbs, who feed them till well fattened, using them for table use.

The rapid gains during these few weeks make of it a very profitable undertaking by either party except the farmer. He has deprived himself by premature selling of his chickens of at least twenty-five per cent of the profit he might have had by holding his broilers until they were at least twelve weeks old.

Few farmers realize that chickens grow much more rapidly than any of our domesticated live stock. The weight of a newly hatched chick is about one and a half ounces, but a chick of the heavier breeds of fowls should with proper care weigh about two pounds when twelve to sixteen weeks old, or nearly twenty-five times its original weight. This extremely rapid growth requires systematic and liberal feeding if chickens are intended for the best kind of broiler trade. In this regard one of the most rapid periods of growth is between the ages of eight and sixteen weeks.

The prevailing high price of all kinds of meat has had its effect in raising the price of poultry. Broilers are usually sold live weight. The farmer spends no time killing and dressing his stock, and this in itself is no small factor at a time of the year when time is valuable. Providing the cost of raising broilers is not excessive, it is a branch of poultry keeping which takes little of the farmer's time and labor.

If however, the farmer can build up a private broiler trade, which is possible in many parts of the country, there is opportunity for still higher profits. Retail prices and private trade prices are at least five cents higher per pound than the wholesale or jobber prices, so that on this basis there would be a profit of about 200 per cent above the cost of production. The profits in systematic broiler raising, therefore, are sufficient to attract attention in this day of severe competition and high prices.

COLD STORAGE HOLDINGS OF APPLES APRIL 1.

Reports from 549 storages show that their rooms contain 792,942 barrels and 1,297,788 boxes of apples on April 1, 1917. The information received indicates that there were 42.5 per cent less apples in storage than on April 1, 1916, while the amount held April 1, 1916, was 43.9 per cent more than on April 1, 1915. The barreled apple holdings of April 1, 1917, show a decrease of 52.6 per cent from those of April 1, 1916, while the boxed apple holdings show a decrease of 5.2 per cent from those of April 1, 1916. On April 1, 1916, there were 68.9 per cent more barrels and 6.4 per cent less boxes in storage than on April 1, 1915.

IMPROVING THE PARCEL POST SERVICE.

The postoffice department, through medium of the parcel post, has afforded the farmer an opportunity to sell his products through the mails. Every effort has been made to develop the highest efficiency of this plan, and to assist the farmer in every way possible. However, it remained for the postmaster at Americus, Georgia, to go a step farther; to bring the consumer closer to the producer. In achieving this end, he has employed a novel plan which enables the farmer to advertise what he has for sale, and enables the consumer to advertise what he wants; also to see what the farmer has for sale.

Hanging in the postoffice at Americus is a bulletin board with an attachment something similar to the bag hangers which one sees in the grocery stores. Painted across this board in large letters is: "Farm Produce Bulletin." Underneath this caption the sign is divided into eight squares or spaces; that is, the squares or spaces are painted on the board. In each square is painted one of the following words: Butter, Fruits, Eggs, Meats, Poultry, Truck, Miscellany, Wants. Hanging from the bottom of each square are a bunch of order blanks to be used by the farmer in listing the stuff he has for sale, and for the consumer to list the articles he desires to purchase.

The farmers, too, use these slips as a method of ascertaining what their neighbor has for sale; that is, stuff that he can use. This not only furthers the sale of home-grown products, but saves the farmer the trouble and expense of going outside for his needs, when the same things can be bought in the community.

When Postmaster D. F. Davenport hit upon the idea, he mailed the following announcement to the farmers in the territory covered by his office:

"The parcel post, with the advantages of bringing the 'consumer to your door,' was largely inaugurated for your special benefit; but many are not informed as to the privileges which are yours. Whether this is from negligence or misinformation is a question for you to answer, for wherever it is being used properly the farmer is being richly rewarded.

"For your further benefit, there will be maintained a Farm Produce Bulletin in the corridor of the postoffice at Americus, Ga., where one can file each day inquiries and quotations on any farm produce that might be for sale, and which can be sent by parcel post. There will be kept eight departments with a file each, viz.: Butter, Eggs, Fruits, Meats, Poultry, Truck, Miscellany, and Wants, and it works as follows: For instance, you list butter at twenty-five cents per pound, or eggs at twenty cents a dozen, and file sale on the proper bulletin, giving your address. You will receive orders from those who want such items, and we will deliver them promptly by parcel post if marked 'Perishable.' If the 'Want' file is closely watched, one might supply patrons without wearing out their shoes looking them up.

"Arrangements have been made where light, sanitary regulation parcel post boxes can be bought at a moderate price for mailing the various products.

"If interested, call at the postoffice, and I will explain fully and furnish parcel post rate card and blanks for inquiries or for filing quotations which will help in the steady sale of farm produce. D. F. Davenport, Postmaster."

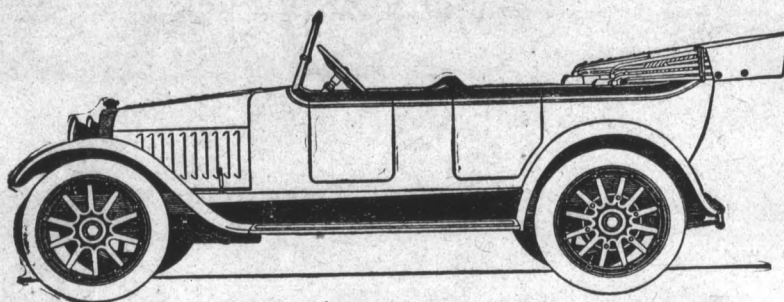
There is no reason why this same system, with perhaps slight modifications, cannot be applied any place. It probably would work best in cities having a few thousand population. Here the farmer could list his product, and make ready and easy sales at a small cost.

Iowa.

T. J. DELOHERY.

"CONTRABAND."

This is the title of our new serial story, the second installment of which appears on page 520 of this issue.



Chalmers 7-Passenger Touring Car—Price \$1350 Detroit

Daily You Will Find New Charms in This Chalmers

Some cars are noted for their comfort. Others are distinguished for their beauty. Others, for the strength of their chassis. But the Chalmers is an all around car. It has power, comfort, beauty, strength. All four.

Comfort

Picture a 122-inch wheelbase. With a front seat 41 inches wide, and a tonneau that extends from front to rear more than the reach of the average man.

Power

Imagine the engine that weighs 550 pounds. And turns up 45 horse-power. One horse-power for every 12 pounds of weight. Which with a total car weight of 3005 pounds means power ease on the hill. One horse-power for every 67 pounds of car weight.

Strength

Then turn over in your mind the extreme strength there must be in a car that is largely built of drop forgings, chrome nickel steel,

Lynite aluminum, crucible nickel steel and carbon steel.

All expensive metals. But placed in the Chalmers chassis for a specific purpose—to make it rugged and strong, though light in weight.

Such quality makes for durability and economy. For a thing made of good materials, always is well made.

Beauty

And a car made of this kind of materials you find everywhere in the Chalmers would be indeed incomplete without beauty and distinctiveness of lines.

See the high narrow radiator, the double cowl, the sweeping body lines, the finish that denotes hours of patience and care. And provides beauty, not for a day, nor for a month, but for years.

All the above means quality. The kind of quality you need in the car you buy and the kind of quality you GET in the Chalmers.

Touring Car, 7-passenger . \$1350 Touring Sedan, 7-passenger \$1850 Limousine, 7-passenger . \$2550
Touring Car, 5-passenger . 1250 Roadster, . 3-passenger 1250 Town Car, 7-passenger . 2550
(All prices f.o. b. Detroit.)



Chalmers Motor Company
Detroit, Michigan

43½ Bu. Wheat Per Acre

Mr. W. Loat of Manitoba, writes: "I had 203 acres of wheat that averaged 43.5 bushels an acre, 17 acres of oats that averaged 65 bushels, 25 acres of barley that averaged 50.5 bushels an acre."

This is only one of thousands of good reports coming from Western Canada. The total value of all farm crops in Manitoba alone for one year was \$201,100,000.00. Recently surveyed 160-acre Homesteads are now open to you in this fertile farming section.

160-Acre Farm FREE

Go get a homestead free this year. No matter where you have been farming, a fortune awaits you if you go now and get one of the recently surveyed 160-acre free homesteads in the rich districts in Saskatchewan, Alberta, Manitoba and British Columbia, reached by the Canadian Northern Railway, the newest transcontinental railroad of America, "The Road to Opportunity." Here you can make a fortune at growing grain, mixed farming, raising cattle, hogs and poultry. Easily accessible markets make conditions and opportunity of settlement excellent now.



Canadian Northern Ry.

F. N. WOOD, G. A.
214 Park Building
Pittsburgh, Pa.

R. N. CLARK, G. A.
64 West Adams St.
Chicago, Ill.

Guaranteed Genuine Everlasting Grimm Alfalfa

Does not winterkill like other varieties, outyields them and is of better feeding value. Booklet "How I Discovered The Grimm Alfalfa" with seed sample, free.

A. B. LYMAN, Grimm Alfalfa Introducer
Alfalfadale Farm, Excelsior, Minn.

Special LOW RATES

Low round-trip home-seekers' fares to Western Canada are in effect every Tuesday, March to November inclusive. Also one-way low-fare for settlers. Even if you have already selected your farm, it will pay you to travel to Western Canada via the Canadian Northern Railroad. 21-year grazing land grants may be procured at very low cost. Outdoor feeding of beef cattle on native grasses bring even better results than indoor feeding. Country roads are good and the public school system is well abreast of the times.

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

Dakota Hardy ALFALFA

Does Not Winter Kill
Our Disco Alfalfa and Seed Book gives full information about Dakota Grimm, Baltic and Registered Alfalfas. Sent free. DAKOTA IMPROVED SEED CO., 804 Lawler Street, Mitchell, South Dakota

Golden King Leaming, "Corn Planter." White corn buttered & tipped, hand shelled, \$2.75 bu. sacked, high germination, splendid qual. The E. A. Armstrong Co., Monroeville, O.

Choice Northern Grown SEED POTATOES

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

Treated and air dried. SEED CORN With 95% Germination.

Guaranteed upon arrival. Stock complete, nine varieties. Price \$2.50 per bushel. Big Four, Silver Mine, and Swedish select seed oats, stock fine, price \$1.00 per bushel. Also Barley and Buckwheat seeds. Write for samples and circular.

The Horn Bros., Co., Seedsmen, Monroeville, O.

SEED BARLEY \$2.00 BU

RECLEANED. BAGS EXTRA 25c.
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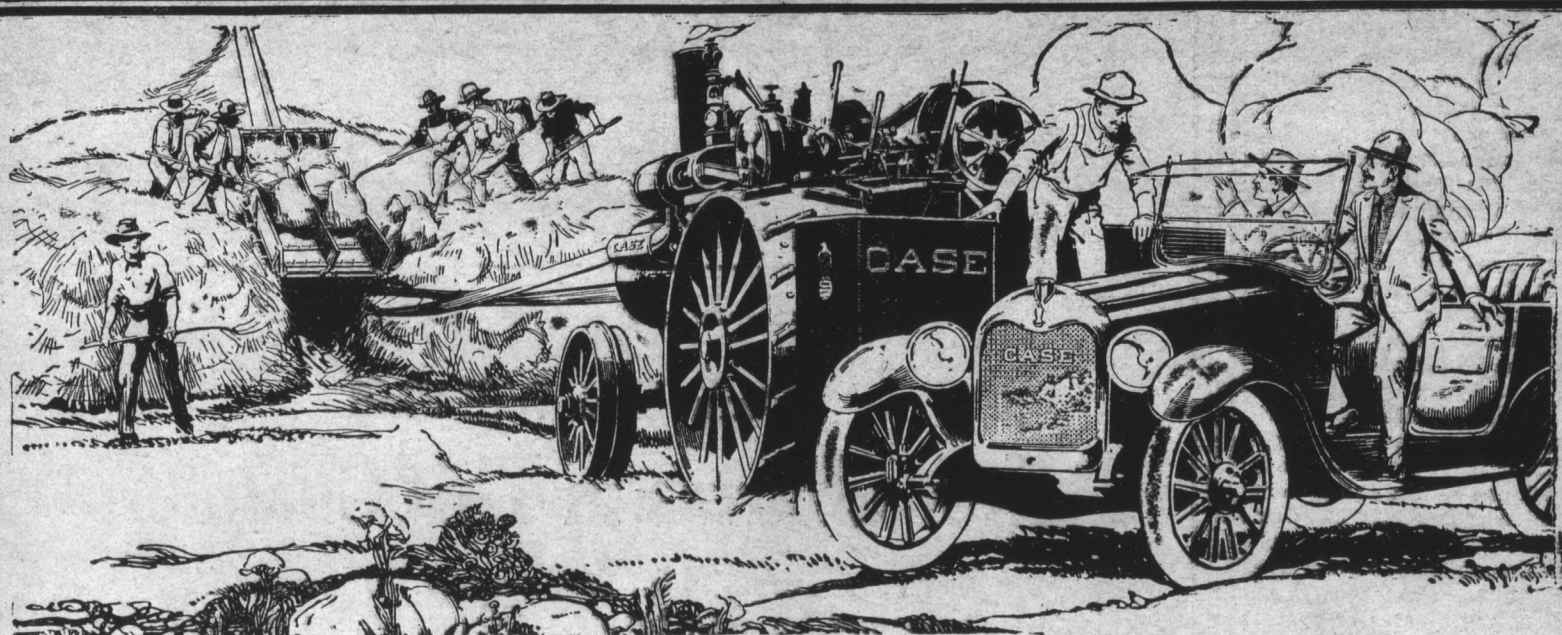
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Magazine Section

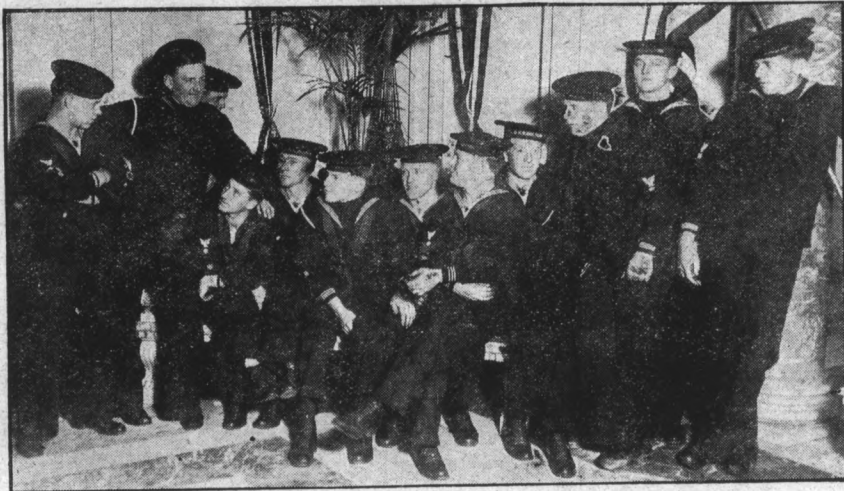
LITERATURE
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MICHIGAN FARMER
AND *LIVE STOCK*
PUBLISHED WEEKLY.
JOURNAL
ESTABLISHED 1843.

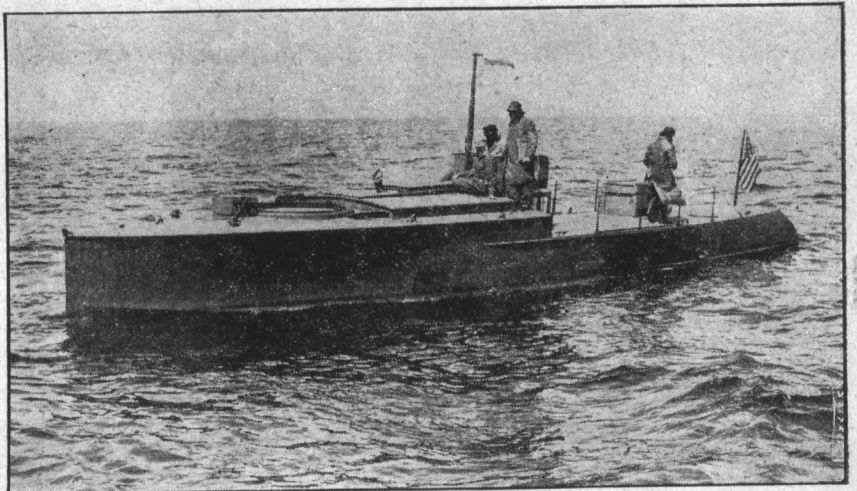
The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

WORLD EVENTS IN PICTURES



U. S. Navy Gunners Saved from S. S. Aztec when Sunk by Submarine.



New Type of Motor Boat Designed for Chasing Submarines.



Norwegian Girl and Parents Held on German Submarine for Eight Days.

To the Living Flag

Can it be that thou insensate art, oh flag, so loved and cherished
That armies countless thousands strong have fought for thee and
perished?

That armies countless thousands strong, by thy dumb call elated,
Again would spring to arms for thee, though knowing death awaited?

Nay, quivers life through every fold, each wave and undulation
That measures with its rise and fall the heart-throbs of a nation.
Aye, in thy folds, a century old, a century's life is surging,
And over all waves a clarion call to blood that needs no urging.

Life thrills thy red, in courage bred; the purity of thy whiteness;
Thy field of blue, in truth's own hue; thy stars of dazzling brightness;—
And courage, truth and purity, thus in thy colors blended,
Have fired the hearts and nerved the arms which have thy cause de-
fended.

So, children of the men of old who first unfurled to glory
The beauty of thy stars and stripes, now famed in song and story,
To save the flag their blood baptized when we were born a nation,
We pledge our life blood and our sons, in solemn consecration.

—By MRS. C. M. HURL.



Billy Sunday Contributes Generously for War Needs.



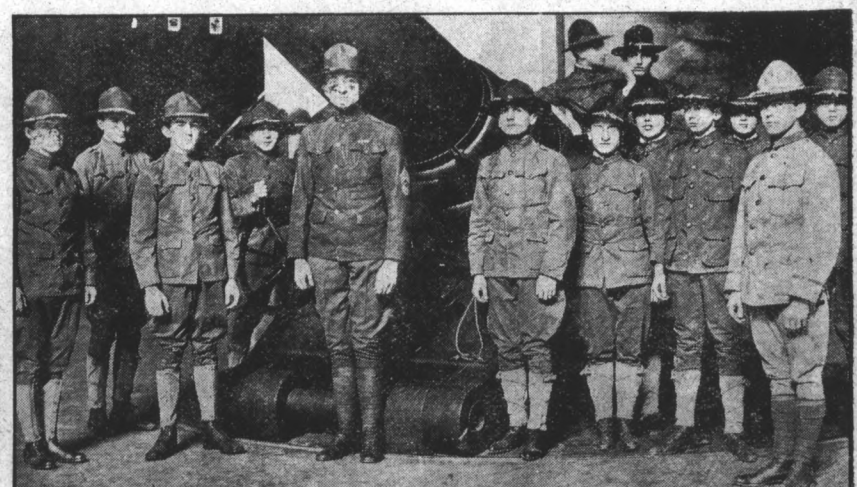
Town Wrecked by Retreating Germans is Being Restored by French.



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CHAPTER III.

I Meet the Mystery.

THE repair job required longer than anyone anticipated, as the captain was finally obliged to send a launch ashore to have some welding done, and it was quite late in the afternoon before the boat returned. McCann accompanied the shore party, but the others of us remained on board amusing ourselves as best we might through a rather hot and tiresome day. Carrington received several messages by wireless, but exhibited no disposition to reveal their contents to his guests, and the shore boat brought back to us the New York morning papers. Although nothing definite in the way of war news had accrued previous to their going to press, the editorials afforded us ample material for discussion, at which I noticed Carrington took no decided stand.

Before the evening meal had ended—the party still lingering in the cosy quarters below over their coffee and cigars—the yacht once again got under way, and steamed slowly down the Sound. Evidently the officers were trying out the newly repaired machinery with some caution, anxious to learn its exact condition before venturing out to sea. It was already dusk when we returned to the deck and resumed card playing beneath the awning, electric lights sparkling overhead. I took a hand for an hour or more at a table devoted to whist, having Fostick for a partner, but finally wearying of the game, found a comfortable steamer chair near the rail, and let my thoughts drift idly. The engines moved steadily and we were making better progress, as I could easily perceive from the twinkling lights along the shore. The sky was slightly overcast, the wind from the south, and light. I never recall a softer, sweeter air. The men behind me were again discussing the war news, but their voices scarcely reached my ears. Once I leaned forward, observing the red and green lights of an approaching steamer, as our siren spoke, but was altogether too negligent to cross the deck and watch the stranger pass by.

The fact was, I could not banish entirely from my mind the recollection of that woman whom I had seen in this very spot the night before. I had actually seen her—it was no vision, no dream. The reality only became more apparent as I reviewed all the circumstances. Carrington's contemptuous disbelief had left not the slightest impression on my mind. No doubt he had faith in what he said, and possessed no suspicion of her presence on the yacht. But she was here nevertheless—why, how, for what purpose, by whose help, I could not conjecture—but that she actually existed and was hidden somewhere aboard, I had not the slightest doubt, and I must solve the mystery alone. No one else had seen her, no one else would believe my story. Besides, I could not recall a single individual in the company to whom I cared to repeat my suspicions. They would take it as a joke—laugh me out of countenance as Carrington had attempted to do. Yet I was unconvinced; satisfied in my own mind that I had not been mistaken.

But how could I prove the vision true? How establish, at least to my own satisfaction, her identity, and purpose? I thought it all over again and again. If Carrington was unaware of her presence—and of this I really no longer felt any doubt—then she must have slipped aboard unseen, or, per-

chance, aided and abetted by one of the crew. Somewhere below, where discovery was not probable except through accident, she was kept in hiding. There must be vacant staterooms forward—petty officers' quarters—in which she might remain concealed. Yet to accomplish this she would need assistance. She must have had aid in getting aboard unseen; someone who knew of a vacant cabin, and who could supply her with food. Only an officer could hope to do this without arousing suspicion. Except for the engineer, Gault, whom I had not seen, but who was hardly in a situation to render such service, there were three who might be accomplices—the captain, Turner, and first and second officers—Hatch and Seeley. I dismissed all thought of the first two almost instantly. Turner was an old sea-dog, a former naval officer, unapproachable, and an extremely strict disciplinarian; while Hatch was a tall, lank, slow-spoken individual, never guilty of the slightest civility to any one. Neither of these would ever aid and abet a woman under any circumstances.

But the second officer, Seeley, was of an altogether different character. He was genial and courteous; not a young man by any means, for his hair was quite gray, yet easy enough to approach—a good seaman, but lacking the education which would enable him to attain command. I remembered Carrington had mentioned the fact that he had been in his employ for over ten years. He was the one most likely to listen to the plea of a woman, and to be deceived by her; and besides, as I suddenly recalled, it was during his watch on the bridge that the girl had ventured on deck seeking the fresh, night air. No doubt she was half-stifled down below, shut in all day, and had emerged from concealment so soon as Seeley had informed her the deck was deserted by the passengers. The seamen seldom had any occasion to use the after-deck, and, if such an emergency occurs, the officer on watch could very easily warn her of danger. She would be safe enough from observation under shadow of the awning for several hours each night.

Before the party finally broke up I had outlined my plan. I was in no haste to retire, having slept more or less during the afternoon; I would remain alone on deck, and see what happened. The fellows were late enough going below, McCann, and his three bosom friends lingering about the last card table until after eleven. Finally they dispersed, however, never even noting my presence where I lay, bundled up in a rug in the depths of a steamer chair. Their departure left the after-deck completely deserted and silent, the only sounds reaching me being the thud of the screw, and the dash of the waters alongside. We were steaming right gallantly now, and the stars were finding rifts in the clouds through which to silver the waves of the Sound. Our siren had not blown for an hour, nor did I perceive the lights of any vessel near at hand. The first officer was still on the bridge, but Seeley would relieve him at twelve; there was nothing for me to do but wait until then.

I could better my position, however, and immediately did so. If the second officer really proved to be the accomplice of the girl, he would very probably take a rather careful survey of the deck aft before permitting her to venture forth from concealment. If his search disclosed my presence, the young woman would doubtless be or-

dered to remain below. My choice of position was easily determined. The flag locker was unusually commodious, as one of Carrington's hobbies was to dress the ship handsomely on every gala occasion, and display the colors of all nations. It was built directly against the after-rail, and back into its protective shadow I silently drew a steamer chair, concealed myself beneath the folds of a rug, and lay there quietly. Except to a careful investigation—which would hardly be made—my presence would never be noticed.

Time dragged, and finally the bell forward announced the hour for the change of watch. I was sailor enough to comprehend the meaning of every sound. I heard someone walk hastily across the main deck, and descend through the companion—a seaman dispatched to call the second mate. The two came back together, and there was a faint murmur of voices, as though the officers exchanged confidences, ending with the closing of the companion door as Hatch finally retired below. Seeley's voice sang out an order, something to do with one of the boats, and there was a shuffling of bare feet on the deck planks as amidships the watchers responded. The hubbub did not last long, and the men evidently disappeared forward, having completed their task. Five minutes later, with no warning sound of approach, I became aware that someone had quietly rounded the end of the cabin. The mate passed me by within a few feet, so close indeed I could distinguish the buttons on his uniform, and the white cap he wore. Nothing, however, could have occurred to arouse his suspicions, for the man did not even pause in his slow walk, but disappeared along the port rail. Fearing he might return, I remained motionless, yet was doubly assured now that my suspicions were about to be verified. There was a woman concealed on board the Esmeralda, and I would soon be able to solve the mystery of her presence.

I listened intently, but could distinguish no sound to guide me. Seeley had probably gone forward again to his post on the bridge but I dared not venture any exploration. Thus far my plan had worked nicely, and I could not now afford to risk discovery. She came so silently, like a gray shadow gliding out of the night, that she was actually beside the rail, gazing steadfastly out at the silvery water, before I was even clearly aware of her presence. I was scarcely willing to accept the evidence of my own eyes, yet arose slowly to a sitting posture to observe better, dropping the rug silently onto the deck. She heard no sound of the movement, and, with no suspicion of any other presence near, remained motionless, drinking in the soft beauty of the night, and breathing deeply the crisp salt air. No doubt she felt like a prisoner released from the cell, with no other thought, except the glory of her present liberty.

I could see her plainly, silhouetted against the sky, illumined by the star-gleam which reflected upward from the water, her hands clasped on the rail, her form bent slightly forward, her spirits blowing lightly in the wind. She was slender and young, no doubt as to that, with a certain supple grace to her figure noticeable even in that quiet posture. Beneath the light scarf thrown over her head, a loosened strand of hair fell to the shoulder, so dark in color as to be clearly defined. Surely, whatever else she might prove to be, whatever her purpose was on board, she was no common waif of the New York streets, picked up by Seeley as a companion. She did not belong to this class; nor could there be aught socially in common between them. Some way this knowledge, this intuition, was a positive relief—I was on the train of no vulgar intrigue, no commonplace romance of the slums. Whatever the

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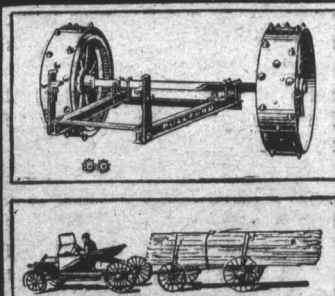
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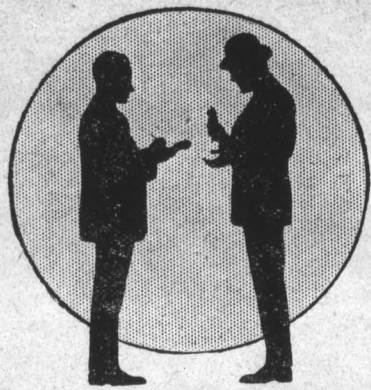
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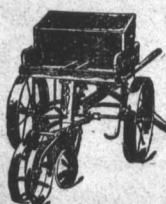


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cause, the purpose of her adventure, and whatever assistance she had received from the second officer, she was in no way tainted by such a suspicion any longer in my mind.

Helped by the support of the flag locker, I attained my feet noiselessly, only half determined on the course I had better pursue. However, I was left no choice. Something served to startle her, to make her vaguely aware of some other presence on the deck. She turned, still grasping the rail with one hand, and confronted me. I caught a glimpse of her face, white and youthful, her big eyes staring at me as though in sudden terror. Her lips parted, but gave no utterance to any sound and, unable to think what was best to say, I merely bowed, and remained silent. She stepped back, then straightened slightly, her questioning eyes never leaving my face.

"I—I supposed myself to be alone," she said, the words uncertain, but the voice clear. "You are one of the passengers?"

"Yes; I chanced to be still on deck when you came."

"Where? You were expecting me?" I indicated the chair in the shadow, but did not venture to move.

"I was lying there, covered by a rug, but did not see you until you appeared yonder at the rail. Why do you ask if I was expecting you?"

She hesitated just an instant, but answered frankly.

"There was a man here last night, after the engines stopped. I believed then he failed to see me. Was it you, and are you here again tonight to make sure?"

"You have guessed the exact truth," I confessed, almost regretfully. "Last night it was a mere accident, but tonight my presence here had an object."

"Indeed! What interest is it of yours?"

"None directly, except as I am a friend to Mr. Carrington, the owner of this yacht, and also his guest. He assured me only this morning that there was no woman on board, and laughed at me for even imagining such a thing. Naturally I desired to vindicate myself; then besides the mystery also had its attractions."

"No doubt! And now that you have progressed so far, what further do you purpose doing—turn me over to the authorities?"

"I do not know," I said honestly. "But I am in hopes you will trust me enough to explain your object in thus coming uninvited aboard. I should prefer being your friend, if that prove possible."

She did not answer, apparently hesitating in surprise at my unexpected plea, and doubtful as to my sincerity.

"What is your name?"

"Robert Hollis; I live in Chicago."

She nodded, and I imagined the expression of her eyes changed slightly. The merest semblance of a smile curved her lips.

"I am rather glad you are my discoverer," she said quietly, "for I know who you are. You are not altogether a stranger."

"I am not!" I exclaimed in surprise. "Oh! I understand: Seeley has told you of me."

"Has he indeed! Why Seeley?"

"Because I have some reason to believe that the second officer is your special friend on board: that through his aid you have found concealment. Am I altogether wrong?"

"Your theory is certainly ingenious. May I ask in return the reason for such suspicion?"

"First, he is, to my judgment, the only approachable officer on the Esmeralda: he is besides the most likely to need money. I have had reason to observe that you venture on deck only during his watch, and tonight, before you appeared, he made a very careful survey of the deck aft, previous to going to the bridge."

"Hardly a careful survey."

"I was concealed, and easily overlooked. So I am going to press you for the truth. Seeley is in your service—is the cause friendship, or money?"

She laughed; the sound barely audible, yet evidence of her swift amusement.

"If I did not chance to know better, Mr. Hollis, I should almost suspect you of being a lawyer," she said cheerfully. "However, in spite of my present position, I am inclined to be a truthful person. I fear Mr. Seeley's interest in me is altogether, or at least largely, mercenary. I will confide in you, and confess that he has already cost me one hundred dollars, and heaven alone knows how much more will be required before we attain deep water, when I hope to be free from bondage."

"Good! I am encouraged; now you will tell me more?"

She shook her head.

"Not another word, sir. So far, as they say in New York, 'you have the goods on me,' and denial would be useless. Of course, I might have told you a falsehood. I am perfectly capable of so doing, and had I been conversing with some others on board, I would have chosen to do so."

"Which would seem to imply that you possess a measure of confidence in me?"

"I do, Mr. Hollis."

"Seeley must have given me a most excellent reputation and deserves reward."

"Mr. Seeley gave me your name as one of the passengers, nothing more. I cannot at present explain when, or how, I acquired my information regarding you. To you I am a perfect stranger, and must remain so, but, by some good fortune, I chance to know enough of you to trust you thoroughly as a gentleman. You understand what I mean?"

Her eyes met mine frankly; they were clear, honest eyes, and I felt that I read their direct challenge.

"Perhaps so," I answered with a feeling of disappointment. "You mean I am to ask no further questions? To forget, if possible, your presence on board?"

"Yes: can you do this?"

"Well, to be perfectly frank, I am not altogether certain that I can, or that I ought. I am Mr. Carrington's guest, and owe him a certain loyalty—you admit that?"

"Yes."

"Have I a right to conceal from my host the knowledge which I have discovered, that a strange young woman has been hidden on board this yacht by one of his officers?"

"That must depend altogether on your sense of duty to both Mr. Carrington, and myself," she returned calmly. "Do I appear like a thief, a conspirator, or in any way a desperate character?"

"You appear a most charming young woman, whom I should be very glad to know."

"Thank you," and her lips smiled. "Then my case is not quite hopeless. As a 'most charming young woman' I unreservedly yield myself to your protection. I cannot tell you who I am, nor why I am on board the Esmeralda secretly, but I give you my word of honor that no harm shall result from my presence to any of your friends, and I only request you to remain silent for a few hours longer."

"You intend later to reveal yourself to others?"

"As soon as the yacht is safely at sea, beyond all possibility of putting me ashore."

I confess I was puzzled; my duty to Carrington seemed clear enough, and yet there was that about the girl which gave me faith in her pledge. She read my hesitation.

"You still doubt me, Mr. Hollis?"

"No, it is not doubt, yet I know so

little. You will, at least, trust me with your name?"

Her eyes fell, shadowed by their long lashes. For a moment she looked out across the rail, at the dark water beyond.

"So far as I can—yes," she answered soberly. "You may call me Vera."

CHAPTER IV.

War, and a Copper Pool.

ERA," I echoed, in some way vaguely conscious of a strange familiarity with the word, yet utterly unable to immediately recall the association, "that must be your given, not your family name?"

"And you are not even satisfied at this evidence of my trust?" she questioned lightly. "Usually it is considered quite a compliment to be permitted to call a lady by her given name—yet I grant you, a stranger, this privilege."

"To which I am not insensible; yours is not a common appellation, yet I have known someone so named before."

"Indeed! a friend?"

"Well, really, I cannot say; I haven't quite figured it out yet; only the memory haunts me oddly, as something I ought to remember."

"Or else forget," she interrupted quickly. "What do you say if we blot out all this mystery, and just be natural for a while? I have been alone so long, hiding like a criminal, it will be a wonderful pleasure to converse with someone. Have you the slightest knowledge of where we are, Mr. Hollis? What is that light flashing out yonder?"

I joined her at the rail, looking out across the expanse of water at the distant gleam.

"Montauk Point," I answered, instantly recognizing the peculiar flash. "The eastern extremity of Long Island. We shall be breasting the Atlantic by daylight if all is well. I have good reason to remember Montauk."

"Yes? You were there?"

"Once; why it was sixteen years ago at the close of our war with Spain. I served on the St. Paul, and we came up from Cuba loaded with sick and wounded soldiers—Michigan troops mostly—and put them ashore at Montauk. I was little more than a boy then, and the suffering witnessed made a deep impression."

"You were a sailor?"

"I was twelve years at sea; my father was a large shipowner."

"You sailed in his ships?"

"Not altogether; I ran away to make my first voyage, a long one to Australia. Later, when he discovered I could not be weaned from the life, I was given employment on his line, but do not think our relationship ever greatly aided me otherwise."

"But you—you said you lived in Chicago?"

"For some years. I left the sea when I was thirty; I had arisen to command, my father died, and I decided I had had enough. I suppose I seem quite ancient to you?"

"Indeed you do not. I think it is wonderful for you to fight your way like that, when your father was rich. It was a man's work. Why, Mr. Hollis, I am not a child."

"Is age another of your secrets?"

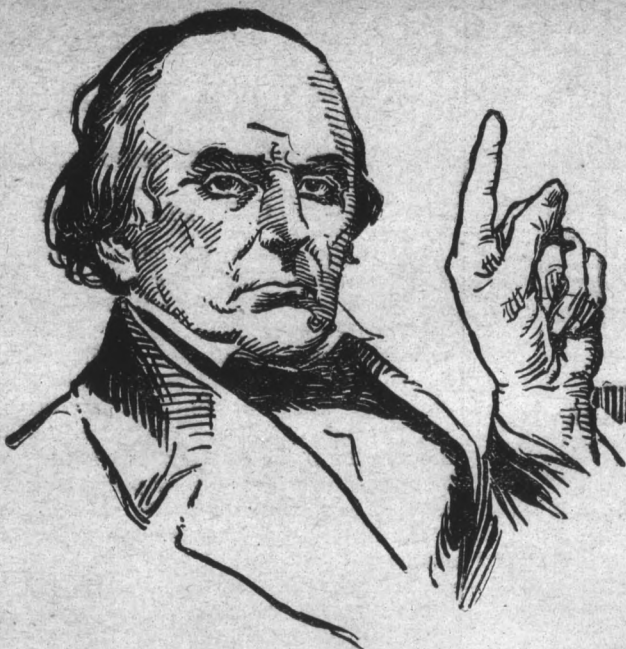
"Not by any means; I am nineteen, what made you smile?"

"No discourtesy, I assure you? nineteen is an age I am always bound to respect; at nineteen I was third mate on the Retriever en route to Bahia, and never since have I felt the importance of life as vividly as I did then."

She looked up into my face questioningly.

"That is not altogether nice of you," she said. "When I permit you to remain and talk with me, you should not make fun. Besides a girl at nineteen, and a boy—they are not the same—are they?"

(Continued on page 527).



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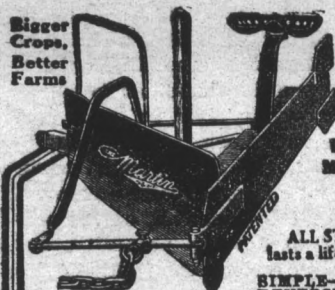
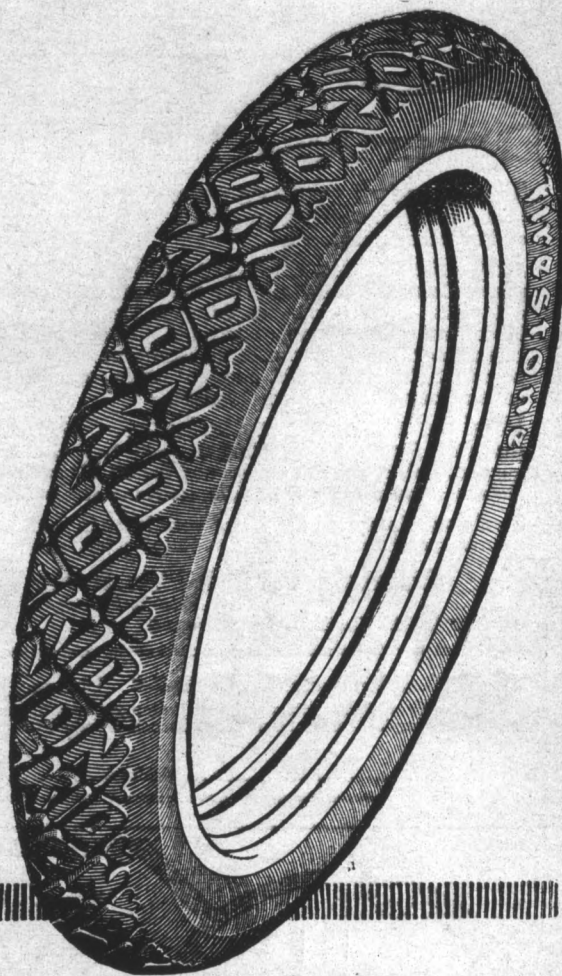
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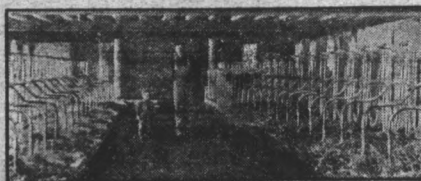
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Woman and Her Needs

Is the Modern Woman an Improvement?

ARE the women of today an improvement on those of a half-century ago. The question has haunted me ever since I read that a certain woman's club was to discuss the subject, and noted later that the preponderance of opinion was that the 1917 woman is 100 per cent ahead of the woman of the late sixties. It may be pure contrariness on my part which makes me take the opposite side, but I can't sit down and see my grandmother thus pushed into the background without uttering several loud protests in her behalf.

As the easiest way to argue, I would like to put the burden of proof on the other side. Wherein are we an improvement on the good women who have gone before? We are wiser, certainly. Newspapers, magazines and co-education, not to mention movies, have seen to it that we know more than our mothers. But wisdom, unleavened by common sense and righteousness, is not always the most desirable thing. We know a great many

ers showed wherein their strength lay. There was no dallying with principles. Right was right and wrong was wrong, and there was no glossing over laxity of character with the plea of personal opinion. One's opinion of a matter did not make it right or wrong, and our mothers lived up to their principles with a devotion which puts to shame their "improved" descendants.

How many of the colonial dames, I wonder, would start across the Atlantic in a crazy old sailing vessel, even if there were no submarines, just to worship God as they thought right? How many "Daughters of Pioneers" would leave bathtubs, telephones, theaters and clubs and go out into the wilderness to make a home in the forest, miles removed from civilization? Those things take courage and strength of the highest type, and your 1917 woman is not built for them. She will stick to the flesh pots, even if there is nothing much in them, and the man who provides sustenance is forced into some occupation foreign to his desires or ability in order to procure them for her. In a word, the modern woman is soft, for all her vaunted advancement. She is not built for sacrifice and devotion to duty. Her idea of life is to catch pleasure as it flies, whether pleasure comes to her in the form of clothes, parties, books or running a woman's club. She has a right to her own life. That is her creed, and the old idea that "He who loseth his life for My sake shall find it," has no place in her scheme of life.

We can talk about woman's advancement all we please, and I'll admit we have gone a few steps ahead in some things. We are better posted on sanitation and diet and the laws governing health. But as for being an improvement, we are far from it. So far as their knowledge went, our mothers and grandmothers went away ahead of us. Children and the home took first place with them, and, in spite of man's oppression and dominance they were far happier. As a matter of fact, the happiest women I know today are the mothers of four or five children, who look up to their husbands as the fountain of knowledge and are happy in making their families happy.

Knowledge alone never made anyone better, stronger nor happier. And that is the only thing we have which our mothers lacked. They had understanding, of which their daughters stand sadly in need.

DEBORAH.

DIGESTIBLE FRIED BREAD.

BY MARY STARBUCK.

Whether breakfast is served in the usual room with a wood fire crackling on the hearth, or in the enclosed porch when the sun streaming through the big windows gives just the right degree of warmth, or best of all, when the glass sashes are put safely away and only an invisible wire netting separates the breakfast party from the sweetness of the summer morning, a most satisfactory accompaniment to crisp bacon and fragrant coffee is a dish of fried bread balls.

Use ordinary bread dough which, if kneaded over night should be in just the right condition of light sponginess. After the bacon is fried and transferred to the hot platter on the back of the range, pour off all but about two or three tablespoonfuls of the fat; pull from the dough small bits, and with a little handling as possible form into balls or little rolls about the size of



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things our foremothers did not, but a good deal of it is a detriment to us.

For instance, we talk a great deal about being man's equal, about being comrades to our husbands, about taking an intelligent interest in his business, about working shoulder to shoulder with man for civic reform. But the divorce rate keeps steadily climbing and the family as it existed when we were young is practically unknown. We insist on individualism, on the person's right to develop naturally, but somehow we overlook the rights of the other fellow in our eagerness to insist upon our own, and the divine right of self-sacrifice, known to our mothers, is becoming rapidly extinct.

Our mothers were silenced when they wanted suffrage with the reply that "he hand which rocks the cradle is the hand that rules the world." We will not be shut up that way, but it still remains that the hand which wraps the baby in a sleeping bag and puts him out on the porch (cradles being obsolete), has as much influence as the one who bears the yellow banner, and as a rule belong to the happier class of woman.

The woman of today is wiser and more self-reliant as a rule, than those of the older generation. She can and does manage her own affairs without masculine dictation, but she is not a stronger nor a better woman. Self-sacrifice is as often a sign of obstinacy as of strength, and the timid woman of a half century ago who did not know a check from a promissory note often showed more strength of character than her energetic, business-like descendant, when it came to a question of right and wrong our moth-

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one's finger. Drop into the pan and fry, turning them as one side browns. They will fluff up and be as light as foam, with a delicious crispy crust. Salt slightly and serve.

Rather a prettier dish is obtained by rolling out the dough lightly on a moulding board slightly dredged with flour and then cutting it with a doughnut ring. In this case ten minutes should be allowed for another rising before the rings are put into the pan. Fry as above, adding a little fat from time to time to prevent sticking. If a large quantity is to be prepared deep fat may be used as for doughnuts. Even delicate digestions seem to be able to manage without difficulty, bread fried in this fashion.

SIMPLE ANTIDOTES FOR POISON IVY.

BY ELLA L. LAMB.

No one contemplating a trip or outing which will take them beyond easy reach of a physician should fail to provide themselves with simple antidotes for poison ivy. This plant grows almost everywhere throughout the country, festooning fences, stumps, trees and creek banks most artistically. So common is it that almost everyone, whether grown-up or child, is almost sure to some time run afoul of its three-in-one leaves, which spell f-o-e. Its cousin, the woodbine, or Virginia creeper, is sometimes confused with it, unless one can remember that its five-parted leaf spells f-r-i-e-n-d and that its berry clusters are purple while those of the poison, or three-leaved ivy, are white.

The poison of the three-leaved ivy is swift in action and unless met with prompt attention, the results of the slightest touch of one of its leaves are both painful and serious, although a few people are immune to its poison. A slight redness of the skin first manifests itself, accompanied by an intense burning and itching. Small blisters next appear, followed by severe swelling and the spreading of the trouble, unless checked, over the entire body.

Gasoline, always (?) on hand with motor parties, is a swift and sure antidote, if used as soon as any redness or blisters are discovered. A simple application is usually sufficient. As it is inexpensive and non-poisonous it may be freely used (with due precaution as to open fires on account of its explosiveness), by those who suspect they have come into contact with any noxious shrub.

A thorough rubbing with alcohol, followed by a warm soap and water bath is sometimes all that is necessary. Carbolic acid one part, water seven parts, well mixed and applied, will also be found very effective. Great care must be used in handling this, as also that standard remedy for ivy poisoning, sugar of lead, dissolved in either alcohol or water.

Some claim that a strong solution of epsom salts and warm water, applied externally, accompanied by a liberal dose of the same drug internally are all that is needed to effect a cure.

When ivy poisoning is suspected something to relieve the sufferer should be done at once before the effects of the poison have time to become serious. If possible no time should be lost in consulting a physician as these simple remedies are only "first-aid" measures to be employed to save pain and trouble when the doctor is out of reach.

Banana Croquettes.—Remove skins from bananas, scrape with a silver knife to remove the astringent which lies close to the skin, and cut in halves crosswise. Then remove slice from each end. Dip in crumbs, egg, and crumbs again, fry in deep fat, and drain on brown paper.

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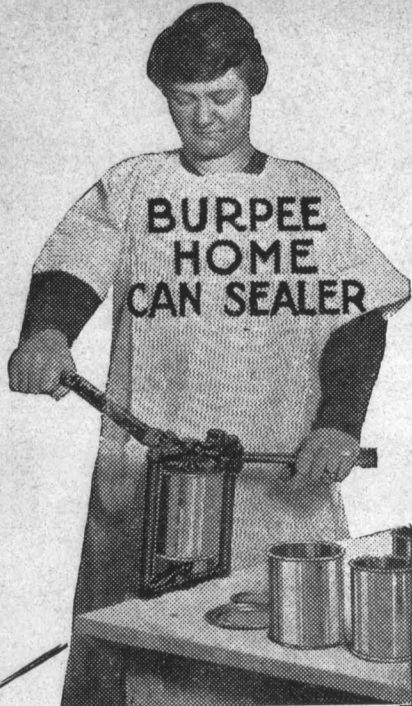
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By M. A. L.



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WHAT to serve instead of potatoes is puzzling more than one housewife. Not only in cities, where prices range from seventy-five cents to \$1.00 the peck, is the pinch felt, but on farms as well, where potatoes heretofore have been plentiful. Indeed, it is doubtful if you can serve anything so satisfying to a hungry man, but there are several other things which may act as a substitute, among them rice, which savants have been urging us to eat for weeks past.

Rice, plain boiled, with a good meat gravy is relished by some, but many could not be induced to eat it. This is sometimes due to actual dislike, and sometimes to the fact that the rice is not properly cooked. Well-cooked rice, with the grains whole, white and separate should tempt anyone, even a dyspeptic. To secure this appearance, look the rice over, wash carefully and put to cook in a large saucepan of cold water, stirring occasionally till the water starts to boil. Let it boil for five minutes, then pour off the water, drain the rice in your sieve and pour cold water through it as you do macaroni. This washes off all the outside starchy sediment and leaves the grains separate. The process is called blanching. Then return to the stove and cook in boiling water, milk or stock until the liquid is almost all absorbed, when finish cooking over hot water so that grains will not burn on the bottom. If you use milk you will need a cup more than of water.

Baked rice is a change from boiled, and has a decidedly different flavor. To bake, add six tablespoons of washed rice to one quart of milk and bake until the milk is absorbed. Of course, salt must be added.

Rice with cheese, as served by one cook, is much relished by those fond of cheese dishes. Fill a dish with plain boiled rice, dot with butter, cover with milk and sprinkle thickly with grated cheese. Cook in the oven until the cheese is melted, about a half hour, and serve piping hot.

Still another method of cooking rice and cheese does not call for the oven. Melt two tablespoons of butter in a stewpan, add a slice of onion, chopped, and cook three minutes. Then add a half cup of washed rice and one quart of boiling water or stock. Just at the last add two tablespoons of grated cheese, stir until the cheese melts, turn into your serving dish and sprinkle with grated cheese.

Spanish rice is made in many ways. One way calls for two peppers and an onion chopped and fried with a half cup of diced raw ham or bacon in a quarter cup of drippings. Then add a cup of rice which has been blanched, three cups of boiling water, or stock, and cook until it begins to get tender. Add a cup of tomatoes, stir in well, and cook until the rice is quite tender.

If your family is fond of kidney beans, rice with the canned chili con carne poured over, piping hot, will be greatly relished.

Macaroni is cooked much the same as rice. Everyone knows how to cook macaroni and cheese. A change from this may be made by omitting the cheese and stirring in two or three eggs after the milk, pepper, salt and butter have been added. If you use eggs the macaroni should be finished on top of the stove instead of in the oven.

Macaroni with onions and tomatoes is a welcome change. While the macaroni is cooking, brown a half cup of diced bacon in the frying pan, add one onion, chopped, and fry without browning three minutes. Then add a half can of tomatoes, or four ripe ones, peeled and sliced. When the macaroni is tender, drain and wash with cold

water, then return to the stewpan and add the tomatoes, onion and bacon. Boil up once and serve. A generous dash of red pepper, some use a half-teaspoonful, gives a welcome tang to the somewhat flat macaroni.

Hominy grits, served through the south, are practically unknown in the northern states. Most of the older housekeepers remember the old way of making hominy with wood ashes. The grits may be bought in packages the same as breakfast foods, and full directions for cooking are given on the box. Served with fried ham, bacon or salt pork, or with liver and bacon and the gravy from the meat, the grits make an agreeable substitute for potatoes.

Beans, while ranked with proteins, are being pressed into service in potatoless households. White beans, (by-the-way, why do they call them navy beans?) are almost as scarce as potatoes, and certainly no cheaper at sixteen cents a pound. Dried limas are much cheaper, still selling around ten and twelve cents, according to locality. They should be looked over, washed and allowed to soak several hours before cooking, as they absorb an amazing amount of water. Start cooking in cold water, add a pinch of soda when they come to the boil. Boil up well, pour off the water, wash and return to the fire with a great deal of boiling water. Cook from two to four hours. When soft, add milk, or cream, a quarter cup of butter and a dash of pepper, and serve. They may also be cooked with salt pork or with bacon, the same as navy beans.

Lima beans and mushrooms, which may be bought in cans, are very nourishing. Boil the beans until tender, drain, and add to a cream sauce. Then add the mushrooms, which have been heated thoroughly in the can. Boil up once and serve.

SHORT CUTS TO HOUSEKEEPING.

Cocoanut often becomes quite dry and chippy from standing in the package. To make as delicious and moist as fresh cocoanut, measure out the required amount to be used in a bowl. Moisten thoroughly with milk, cover, and set in the top of the teakettle while preparing the cake or pie.—E. G. W.

Clean patent leather shoes in this way: After removing all the dirt rub the surface well with a milky rag, then polish with a dry cloth. This not only gives the leather a bright appearance, but preserves it.—M. A. C.

When washing any kind of corduroy never make the mistake of wringing it when removing it from one water to another as this works irretrievable ruin to such a garment's looks. Simply wash without wringing and hang out dripping. A stiff, clean brush should be used on the garment when dry instead of an iron. Remember to brush but one way of the cloth. This restores all its former silkiness and lustre.—M. A. C.

Spots are easily cleaned, provided one has the necessary articles. All we need is a piece of soft bread, made into a pack about the size of a good eraser, and used quite the same to rub the soiled parts. Make it moist by enclosing in the hands for a few seconds. In most cases it will remove all soiled marks from the wall.

The Children's Bureau has a bulletin on the planning and carrying out of Baby-Week Campaigns, and other material of assistance to local committees, which it is glad to send upon request. Write The Children's Bureau, Washington, D. C.

Hosiery That Stands for Children's Romping

Here's the *right* hosiery for your children because it is **strongly** reinforced where the wear comes hardest—in the heels, knees, soles and toes.

Durable

DURHAM

Hosiery

FOR MEN, WOMEN AND CHILDREN

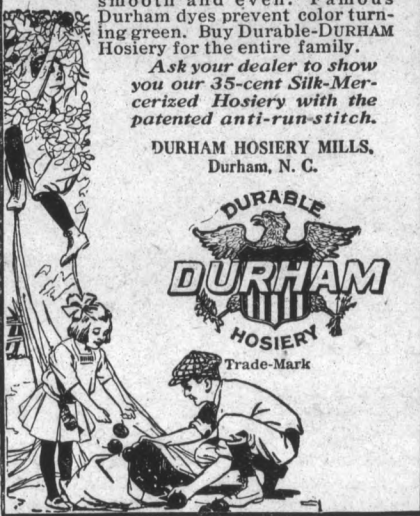
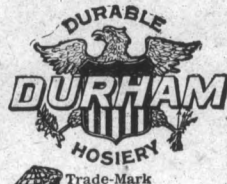
Made Strongest Where the Wear is Hardest

gives everybody in the family longer wear and sells for 15, 19, 25 and 35 cents. The heels, soles and toes are **strongly** reinforced. The deep, stretchy, garter-pull-proof tops with the anti-run stitch are knit on to stay.

The quality is uniform throughout—the sizes are correctly marked. Toes are smooth and even. Famous Durham dyes prevent color turning green. Buy Durable-DURHAM Hosiery for the entire family.

Ask your dealer to show you our 35-cent Silk-Mer-cerized Hosiery with the patented anti-run-stitch.

DURHAM HOSIERY MILLS,
Durham, N. C.



Standard Plumbing Fixtures

are used everywhere. They stand for *quality*—in a great variety of styles and wide range of prices—and are backed by the company best equipped to serve you. Whether

For Bath, Kitchen or Laundry

"Standard" fixtures should be specified—

and be sure you get "Standard". Talk to a good plumber about fixtures and see that the Green and Gold label is on what you buy. Write for two free helpful books—"Standard" Plumbing Fixtures for the Home" and new Sink booklet. They will give you needed information for equipping your new or remodeled home.

Standard Sanitary Mfg. Co.

Dept. 212

Pittsburgh, Pa.

SEPARATOR SATISFACTION

Satisfaction in a Separator.

means closest skimming; greatest capacity for every dollar paid; durability; ease of operating and cleaning; and general all-around efficiency. You get all this in the

VIKING CREAM SEPARATOR

The whole story of the VIKING—how it saves you real dollars and makes the profits from your cows larger, is told in our

FREE BOOK
Morley Bros.
Saginaw, Mich.
Swedish Separator Co.
Dept. E 515 S. 5th
Ave., Chicago, Ill.



"CONTRABAND."

(Continued from page 523).

"Quite different, I should say; although the truth is, Miss Vera, it has never been my privilege to know a great deal about girls."

"I like to hear you say that. Most men I have met pretend to know all about them; then they act and talk like fools. Did you have no sisters?"

"None, or brothers either; I chanced to be the only child. Then I went to sea so early in life I failed to acquire the habit of seeking companionship with your sex. My time of development was passed entirely with men, and, I confess, that afterwards I have never felt quite at home among women. No doubt that explains why I am still a bachelor."

"Tell me about it," she exclaimed eagerly. "Your sea life, I mean."

"Really there is nothing to tell."

"Oh, yes, there is; the things one does not read in books. If I was a girl I actually believe I should be a sailor—the ocean fascinates me."

"You know it well?"

"Only from two short trips to Europe, and one to the Bahamas; mere pleasure jaunts in summer weather. Tell me about the other side of the picture—the ocean the real sailor knows."

The eagerness of her voice must have touched a responsive chord, for almost before I realized my purpose, I began speaking. Never before did my experiences at sea come back to my mind with such vividness; they gave color to my words, while the evident appreciation of the girl, leaning over the rail in the starlight, stimulated my memory. I began at the first, relating my life as cabin boy, and as man-before-the-mast, my first voyage as mate, and the experiences of my earliest command. I told of shipwreck in the South Seas; of a battle for life in the Indian ocean; of strange peoples met in every quarter of the earth; of fighting wintry gales off the Atlantic coast, and the silent desolation of tropic seas. Breathless with interest she questioned me, and I answered, feeling the magic of her eyes on my face, the soft intoxication of her presence beside me. She was natural, wholesome, the very sort of woman I had dreamed about, as being somewhere in the world, yet had never met before. Her very presence was inspiration, but beyond this vague impression my dream did not go. Interested as I was, there seemed to be between us a barrier of age: I became dimly conscious of the gray hairs which years and responsibility had brought, and knew that all I was confessing could only widen this natural breach between us. How young, even girlish, she appeared with her smooth, eager face turned toward me in the star-shine. Why, she would be scarcely out of school; or presented in society, if, indeed, she belonged to a set where such presentation was good form. Ay, and where did she belong? What explanation could be offered for her presence? She was not of the submerged tenth, that was plainly evident. Never had I been guilty of drawing social lines tightly, or of fearing to associate with those not of my recognized class. Yet I recognized the real thing and the girl was accustomed to the best. The evidence was in her manner, her easy air of confidence, the very way in which she wore her clothes. She possessed education, originality, the careless ease which comes of birth, and the surroundings of wealth in childhood. These were not things to be simulated at nineteen; and she was not pretending; she was simply natural. Even as I talked these things filtered through my mind, but, when my story finally ended, we stood in silence, gazing out across the waters. Then I looked aside at her and laughed, realizing suddenly how loquacious I had been.

(Continued next week).

"HIPRESS" with the RED LINE 'round the top

Better Footwear for Farmers

Every "Hipress" Brown Boot or Shoe is Just ONE SOLID PIECE of tough, gristly rubber—actually the same kind of rubber that has made Goodrich Automobile tires known all over the world as the strongest, longest wearing tires ever made. That means wear—more of it in one pair of "Hipress" than in two and even three pairs of any old style black boots you ever wore.

And you can see that there isn't a chance for a "Hipress" One Piece Molded Boot or Shoe to crack, peel or come apart. It simply can't leak. It gives so much more service, and so much more comfort, that after you have worn your first pair you will always ask your dealer for the Brown Boots and Shoes With the "Red Line 'Round the Top."

Made only by
The B. F. Goodrich Rubber Company, Akron, Ohio

Makers of the Celebrated Goodrich Automobile Tires
—"Best in the Long Run"



Get My New Concrete Mixer Offer

I want ten men in every county right now to accept my special co-operative offer. It will help you obtain a Sheldon Batch Mixer at little or no cost. Let me tell you about it. You probably need a mixer for concreting on your place—most farmers do. The Sheldon is the ideal mixer for the farm. Light and easily portable, durable, low-priced. You'll find it will prove a mighty good investment. Write for special offer.

MAKE BIG MONEY Concreting in Your Section. You can easily earn \$5 to \$20 a day with a Sheldon Batch Mixer. Our customers are doing it right now. The jobs go to the man with a Sheldon Mixer every time. Saves labor of 1 to 4 men, according to size of job. Or, if you buy a machine for your own use, you can make many times its cost in a season by renting it to neighbors.

Improve Your Farm Build your own silo, tanks, troughs, floors, foundations, buildings, etc., out of concrete with a Sheldon Batch Mixer. Will pay for itself on first small job. Beats hand mixing a mile. And, it's a lot cheaper too. Takes the backs out of concrete. Makes possible those many small improvements on the farm that you wouldn't do without. Improvements which will add many dollars to the value of your land.

Get My FREE Catalog Tells how to build your own mixer by using the Free Plans which we send with our iron parts. Also shows full line of built-up machines. Two styles, hand and power. Will mix 21-2 cu. ft. a minute. Keeps 1 to 6 men busy. Chain drive, self-tilting dump, all parts guaranteed. Write today for catalog and special offer. Geo. C. Sheldon, Pres. **SHeldon MANUFACTURING CO., Box 8870 Nehawka, Neb.**

Build Your Own Concrete Mixer

SEED CORN

We have in stock contract grown, carefully selected, true to name, has been tested and is of high germination; in short, it is the finest quality obtainable.

Dent Corns

Improved Leaming	\$2.50 per bu.
Reid's Yellow Dent	2.75 " "
King of the Earliest	2.75 " "
White Cap Yellow Dent	2.75 " "
Pride of the North	2.75 " "

Fodder Corns

Red Cob-S'th'r'n Grown	\$1.80 per bu.
Leaming Fodder	1.75 " "
Ev'rgr'n Fodder—Sweet	3.50 " "
Stowell's Evergreen	

Flint Corns: Longfellow, Strawberry.

Seed Oats: White Swedish Select \$1.00 per bu. (Michigan grown)

Clovers: June, Alsike, Mammoth, Alfalfa, Sweet, White.

Timothy: No other seed house better able to fill your order for quality seed at reasonable prices. Are pleased to quote prices.

Our Seeds comply with the Seed Laws of Michigan and are of high test of purity and germination.

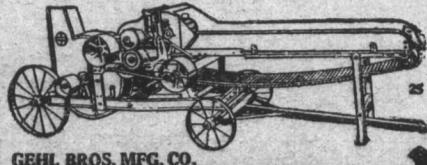
MARTIN DAWSON COMPANY

"Seed Merchants"

PHONE 166
YPSILANTI, MICH.

SIGDERZAHN

The new models are "wonders." All steel frame; low feed table; positive safety device; automatic feeding; 6-arm blower that simply can't clog and can be regulated to height of silo; malleable knife heads; best knife adjustment. Holds record for simplicity, safety, clean cutting and great capacity. Write for catalog showing ten sizes. Gives full details and explains how and why the "Gebl Silberzahn" is better. Write today.



GEHL BROS. MFG. CO.
111 South Water St., West Bend, Wisconsin

Farms and Farm Lands For Sale

175-Acre Farm, 5 Cows, Pr. Horses, \$1,750. And

Two hogs, 3 calves, hens, plow, harrow, tools, wagon, buggy, sleigh, sled, harnesses, etc., etc., included by owner making quick sale account family affairs. Rich dark loam tillage; 12-cow pasture, apples and plums; 8-room house in good repair; 2 barns, spring water. \$1,750 takes all, part cash. For traveling instructions see page 9. "Our Spring Catalogue" copy mailed free. **E. A. STROUT FARM AGENCY**, Dept. 101, 150 Nassau St., New York.

Gentlemen's Stock Farm, 140 A.—S. E. Michigan

Adjoining village limits Manchester, Mich. 20 miles from Jackson; 50 from Toledo or Detroit, sidewalk to village; N. Y. C. R. R. station 10 minutes walk, twelve passenger trains daily. Land in good condition, gently rolling, running water in several fields, buildings old but usable, 9 acres oak timber. Ideal building site, fine trees. Price \$14,000. **WM. G. FARGO**, JACKSON, MICH.

PASTURE AND FARM LANDS

Land at \$50 and \$100 per acre is too valuable for pasture. We have 474 acres at \$5.00, trout stream through it, 8 miles from West Branch. Good neighborhood, good land, good water, good title and abstract. Land in large body hard to get. Act quick if you want it. We also have many 40 and 80 acre tracts. Write for list.

FLINT LAND COMPANY, Ltd
221-2-3 Paterson Block FLINT, MICH.

155 Acres. 10 good cows, 2 good horses, Mower, Potato Digger, Harrows, Cultivators, Wagons, Sleds, Harness; 9-room, two story house painted white. 4 barns—40x50-32x50-34x50-3x40. 2 Granaries, 100 house, Hen house, Work shop. To quick buyer \$4,000, \$1,500 Cash, balance long time. Owner 80 years old, must sell at once. **HALL'S FARM AGENCY**, New Paltz, New York

ACRES OF OPPORTUNITIES.

An illustrated booklet FREE. Michigan has hundreds of thousands of acres of virgin land \$5 an acre up. Healthful climate. Growing season for all crops. Ample rainfall. Write W. P. Hartman, A. & I. Agent, Room 358, Grand Rapids & Indiana Railway, Grand Rapids, Mich.

A Small Farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Low prices. Easy terms. Sure profits. Hospitable neighbors. Good roads, schools and churches. Write for our San Joaquin Valley Illustrated folders free. C. L. Seagraves, Ind. Comm., AT & SF Ry., 1957 Ry. Ex. Chicago

MUST SETTLE ESTATE

80 acres, 4 miles from Gladwin, Mich. 40 acres well cleared, 20 acres nearly ready for plough; balance timber with a small spring lake, plenty of big fish. 8-room house, slightly location. Write for full description at once. Many other farm bargains. **U. G. Reynolds**, Gladwin, Mich.

FARM FOR RENT. 155 acres on Ave., 2 miles south of Wixom, 3 miles west of Novi, known as the Hockett Farm. Inquire of F. C. Shipman, 1348 Penobscot Bldg., Detroit, Main 85, or Henry Porter, living on the farm adjoining on the North.

WANTED To hear from owner of farm or unimproved land for sale. **O. K. Hawley**, Baldwin, Wisconsin

Markets.

GRAINS AND SEEDS.

April 17, 1917.

Wheat.—Despite the high prices prevailing in the wheat market the past year, cash wheat made the sensational advance of 34c during the five sessions of the local market ending Monday of this week. July wheat also partook of this advance, but the margin was not so wide. Since war has been declared, people everywhere have rushed to put in supplies of flour, thus increasing the demand for cash wheat, and crowding prices to unprecedented heights. The outlook for the new crop is rapidly growing worse on account of continued freezing and thawing. The situation will likely be assisted, however, by the planting of increased acreages to spring crops. One year ago No. 2 red wheat sold locally at \$1.19 per bushel. Last week's Detroit quotations were:

	No. 2	No. 1
Wednesday	2.26	2.23
Thursday	2.38	2.35
Friday	2.45	2.42
Saturday	2.49	2.46
Monday	2.60	2.57
Tuesday	2.47	2.44

Chicago.—May \$2.24¾ per bu; July \$1.91½; Sept. \$1.67½.

Corn.—Corn values followed wheat in the upward trend and the market holds firm at the new high figures. Demand is urgent regardless of the high prices, feeders buying the grain liberally. One year ago No. 3 corn was quoted at 75c per bushel. Last week's Detroit quotations were:

	No. 3	No. 3
Wednesday	1.41	1.42
Thursday	1.41	1.42
Friday	1.41	1.42
Saturday	1.46½	1.48
Monday	1.49	1.51
Tuesday	1.49	1.51

Chicago.—May \$1.38¾ per bu; July \$1.34¾; Sept. \$1.34½.

Oats.—While this trade is firmer, the quotations have not advanced in proportion to the rise in wheat and corn values. Offerings are small, however, and buyers are glad to take supplies on the present basis. A year ago standard oats were quoted at 48½c per bushel. Last week's quotations were:

	Standard.	No. 3
Wednesday	76	75½
Thursday	76½	76
Friday	76	75½
Saturday	76½	76
Monday	77	76½
Tuesday	77	76½

Chicago.—May 64½c; July 63½c per bushel; Sept. 55½c.

Rye.—Prices are up 5c with cash No. 2 now quoted at \$1.85 per bushel.

Peas.—Market is firm with field peas quoted at \$2.75@3.75, sacks included.

Beans.—Stocks of beans are pretty well depleted with prices 70c above those quoted a week ago. Demand for seed beans promises to be large on account of the liberal planting by Michigan farmers. Cash beans are now quoted at \$8.80 on the Detroit market. The Chicago trade is fairly good for Michigan hand-picked stock, which is quoted there at \$8.25 per bushel. At Greenville dealing is on an \$8.50 basis.

Seeds.—Prime red clover \$10.80; April \$10.80; alsike \$11.50; timothy \$3.20.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$11.90; seconds \$11.60; straight \$11.30; spring patent \$12.30; rye flour \$10 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$42; standard middlings \$42; fine middlings \$44; cracked corn \$58; coarse corn meal \$58; corn and oat chop \$50 per ton.

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

Pittsburg.—No. 1 timothy \$17@17.50; No. 2 timothy \$14.50@15.50; No. 1 light mixed \$15.25@16.25; No. 1 clover, mixed \$16.75@17.25; No. 1 clover \$17@17.50.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market is strong and higher with demand good. Creamery extras 45c; do firsts 44c; packing stock 30c.

Elgin.—The tendency of prices was upward on account of small receipts. The prices, based on sales, is 46c which is an advance of 2c over last week.

Chicago.—The feeling continues firm with prices from 1@2c higher than last week. Trade is good. Extra creameries 45½@46c; extra firsts 45c; packing stock 32@33½c.

Poultry.—Market is firm with prices slightly higher. The demand is active. Receipts light. No. 1 spring chickens 25@26c; No. 2 do 23@24c; No. 1 hens 26@27c; No. 2 do 24@25c; small do 22c; ducks 23@24c; geese 19@21c; turkeys 25@26c.

Chicago.—The market is steady at prices 1c lower than last week. Demand and supply are both light. Fowls 22½c; spring chickens 22½c; staggy young roosters 19c; ducks 17@23c; geese 13@15c; turkeys 12@20c.

Eggs.—Market continues firm with prices 2½c higher. Fresh firsts 34½c; current receipts 34c.

Chicago.—The feeling is firm but unusually high prices restricts trading. Receipts are increasing some. Fresh firsts 33¼@34¼c; ordinary firsts 32¼@32¾c; miscellaneous lots, cases included 31@34c.

FRUITS AND VEGETABLES.

Apples.—Market firm with prices unchanged. Baldwin \$5@6; Spy \$5@7; Steele's Red \$7@7.50. At Chicago the demand is good for well graded stock, otherwise the demand is only fair. No. 1 stock sells at \$3.50@6.50 per bbl; No. 2 at \$2.25@2.75; orchard run \$3.25@3.50.

Potatoes.—On account of light receipts prices are higher and market is firm. Consumptive demand is good. In carlots, at Detroit in sacks, Michigan \$2.90@3 per bushel; Wisconsin \$2.90. At Chicago no Michigan stock was reported. Market is higher with demand good for nice stock. Prices range from \$2.70@3.15 per bushel. At Greenville potatoes are selling at \$2.80@2.85 per bushel.

WOOL.

Boston.—The large wool markets of the country have closed business until such times as the government can select from the stocks in store the grades required to fill military orders, after which the remaining wools are to be re-offered for sale to the public on what will likely be a much higher price basis. This action will probably auger for higher prices for the new crop, as in thus satisfying the government demands, large blocks of the present comparatively small supplies will be consumed. Local dealers in Michigan are paying farmers 40c and more for their clips.

GRAND RAPIDS.

Food stuffs have shown marked advances during the past week. Wheat opens this week at \$2.34; corn at \$1.40; oats 75c; rye and barley \$1.50. Beans have a nominal basis of \$8 at most stations and potatoes are quoted at \$2.50@2.75. Potatoes now retail here at \$1 per peck. The egg market still holds at 30c, and No. 1 dairy butter is unchanged at 30c. Poultry is unchanged, with live fowls at 20@21c and the range for meats is as follows: Hogs 16@17½c; calves 15@16½c; mutton 16@17c; lamb 18@19c.

DETROIT EASTERN MARKET.

The market Tuesday morning was fairly active with the bulk of the apples selling between \$1@1.75, a few sold at \$2 and above. Potatoes \$3; carrots \$2; parsnips \$2.25; eggs 38c; pork 21c. Loose hay is not offered in any amounts; with the old quotations holding at \$17@19.

LIVE STOCK MARKETS.

April 16, 1917.

Buffalo.

April 16, 1917.

Receipts here today as follows: Cattle 125 cars; hogs 55 d. d.; sheep 30 d. d.; calves 2200 head.

With 125 cars of cattle today the trade was very slow, the bulk of the heavy shipping cattle 25c lower and the medium and light weight kinds that the shippers took last week fully 50c lower. The bulk of the butcher steers sold a big quarter lower, with the cows and bulls but only 10@15c lower. We look for a fair run of cattle next Monday and a little better trade.

With about 55 double decks of hogs on sale today, the quality was the poorest that we have had for some time. While prices on the best grades showed a loss of 10@25c per hundred there was some difference in quality from Saturday and it looked like about a 10c lower market on all but pigs, this class selling from 50@75c per cwt. lower. The bulk of the best sold around \$16.25@16.40, with a few at \$16.50@16.60 and one fancy load of 200-lb. hogs at \$16.75. Pigs \$13.50@14; roughs \$14.25@14.50; stags \$12@13.

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

We quote: Wool lambs \$16.50@16.75; clipped lambs \$13.75@14; clipped heavy lambs \$12.25@12.50; cull to common \$11@12.50; yearlings \$11@12.25; clipped wethers \$12@12.25; clipped ewes \$11@11.50; clipped bucks \$8@10.50; best calves \$14.25@14.50; common and light \$10@13; heavy \$8.50@11; grassers \$6@6.50.

Chicago.

April 16, 1917.

Cattle, Hogs, Sheep.
Receipts today..19,000 36,000 22,000
Same day 1916..18,804 48,421 19,326
Last week.....54,199 116,516 73,935
Same wk 1916..42,650 135,799 63,523

This is a slow Monday in the cattle market except so far as fat beefs and butcher stuff are concerned, these going at unchanged prices, while bids for other kinds of cattle are more or less lower, with prospects for a bad close. Hogs are off 5c or more, with sales at \$15.25@16.30. Hogs marketed last week averaged 212 lbs. Bids for lambs and sheep are some lower, and at a late hour little had been done, some heavy lambs selling at reduced figures.

Cattle prices last week reached the highest level ever recorded on the open market, the best heavy beefs selling at \$13.25@13.45, while during the previous week the top stood at \$13.15 and a month earlier at \$12.65. Early week advances were from 10@25c, with only 17,517 head received on Monday and vigorous competition for the few choice lots. On Wednesday and Thursday the early advance mostly disappeared, with receipts of 22,795 head on Wednesday and a slow demand from packers until they were able to fix prices to suit themselves. It is becoming quite common to have meager receipts on Monday and larger arrivals later in the week, and at all times there is a marked lack of strictly prime cattle, including yearlings as well as older steers. The bulk of the steers marketed last week found buyers at \$10.75@12.90, the highest figures yet reached, with sales of prime to extra steers carrying plenty of weight at a range of \$12.90@13.45, while a class grading as good found buyers at \$12.25@12.85, with sales of medium grade short-fed steers at \$11.20@12.20 and ordinary to fair light weight steers at \$10 and upward and scattering sales of inferior little steers down to \$9 or even lower, the bottom being \$8, but these sales were hardly worth mentioning. Yearlings with any quality were purchased for \$11.75@13, but very few sold near the top price. Butcher stuff had a good outlet, cows selling at \$7.40@11.25 and heifers at \$7.10@11.85, while cutters went at \$6.65@7.35, canners at \$5.40@6.60 and bulls at \$6.75@10.35. Calves were in the usual good demand, with sales at \$12.50@13.50 per 100 lbs. for light vealers and sales down to \$6.50@8.50 for the heavier lots. Stockers had a fair sale at \$7.15@9.60, with choice yearlings selling the highest, while feeders were in fair request at \$9@10.50. Late in the week the bulk of the cattle below good fat lots sold 25@35c lower than a week ago, stockmen overloading the market from fear the government would fix maximum prices.

Hogs continued on their long upward course for still another week, with an active demand from local packers and eastern shippers, as well as from yard speculators, and further sensational advances in prices took place. Prices were higher than ever in the past, with some reactions brought about by the refusal of packers to pay the full advance. Choice barrows that carried plenty of weight continued the favorite sellers, these bringing the best prices, while prime light shipping hogs sold usually about 20c below top figures, with a good demand for shipment to Canada. Pigs had to be sold at a large discount, the heavier lots selling much the highest. It is interesting to turn back and recall that at this time in 1904 hogs were selling in the Chicago market at \$4.60@5.10. On the high time of the week prime hogs brought \$16.50, a new high record, and 50c higher than a week earlier. On Saturday heavy packing hogs brought \$15.65@16.05; light bacon hogs \$15.25@15.85; light shippers \$15.90@16.25; heavy shippers \$16.10@16.35; and pigs \$11.50@14.50, with pigs weighing up to 130 to 135 lbs. the highest sellers. The week's hog receipts were smaller than a week earlier and far less than a year ago.

Lambs, yearlings, wethers and ewes were in the accustomed large local and shipping demand last week, and new high price records were made, the receipts being, as usual, greatly inadequate. Lambs comprised most of the receipts, there being a meager show-

ing of everything else, and shorn consignments were much more numerous than heretofore. Western 86-lb. shearing and feeding lambs sold up to \$15.50 per 100 lbs., breaking all past records by 25c. Killing lambs advanced during the week largely 50@75c for fat lots, and most sheep advanced 15@25c. At the close lambs were salable at \$13@16; fat heavy lambs at \$14.75@15.65; feeder and shearing lambs at \$14@15.50; yearlings at \$12.50@14.50; wethers at \$11.75@13; ewes at \$7.50@13, and bucks at \$10@11.25. Shorn yearlings brought \$10.50@11.85; and shorn wethers \$10@11; clipped lambs \$11.75@12.85; spring lambs brought \$14@18.75.

Horses were in much smaller supply last week than a year ago, and prices remained firm, with army horses selling about as usual. The cheaper horses went at \$60@100 and drafters at \$185@285 or higher now and then. Some 1500-lb. chunks sold for eastern shipment at \$200, and a pair of gray market mares sold at \$525 their weight being 3200 lbs., while another pair brought \$500.

HAPPENINGS OF THE WEEK.

(Continued from page 506).

second defense lines. It is generally believed that St. Quentin will soon fall. This town is an important position on the Hindenburg line. Artillery engagements have been frequent over the remainder of the western front, and an unusual number of aeroplanes have participated during the past two weeks. Seventeen French, British and American aeroplanes and twenty German machines were lost in the aerial activity of the past few days. Nothing is reported on the eastern front and unimportant engagements have taken place in Macedonia with battle fronts unchanged.

Conflicting reports on conditions in Mexico, and her attitude toward the United States in the present trouble are being published. The trend of the information received, however, appears to give credence to the statement that political conditions are being gradually improved, and that the provisional government has matters more completely under control than since the fall of the Diaz regime. Gen. Carranza, in his address to the new congress, declared Mexico would maintain a strict and rigorous neutrality in the world war.

German merchant vessels in Brazilian harbors have been seized. It is expected that the taking over of these vessels will lead to a state of war between this South American country and Germany.

National.

Last week the lower House of Congress passed a revenue authorization bill providing for the raising of \$7,000,000,000, to furnish funds for the prosecution of the war. The Senate will act upon the measure this week. Of this amount \$3,000,000,000 is to be placed to the credit of France and Russia.

A government ship building corporation is being organized with General Goethals, governor of Panama during the construction of the Panama Canal, at its head. The purpose of the corporation is the construction of thousands of ships of small tonnage to carry food stuffs from the western hemisphere to the allies of Europe. All the shipyards in the country will be put to work immediately in supplying the first thousand small vessels. It is expected that these vessels can be built in such quantities as to make it impossible for German submarines to destroy any large per cent of them, especially when numerous routes to Europe will be followed.

The finance committee of the United States Senate and the ways and means committee of the House are this week considering suggestions of the administration for raising approximately one-half of the estimated cost of the first year of the war, or \$1,807,250,000. These suggestions favor the increase of taxes on incomes and excess profits, higher rates on many imported articles, and stamp, liquor, amusement, sugar, coffee, tobacco, soft drinks, freight and passenger transportation and automobile taxes.

All radio stations have been ordered seized by the United States government. Those needed for naval purposes will be operated under the Naval Department, while the remaining stations will be closed.

Members of the sub-committee of bituminous coal operators and miners are in conference in New York City on the question of wage increases, with the outlook favorable for the reaching of an agreement.

The United States Chamber of Commerce has inaugurated a movement looking toward a uniform plan in caring for those dependent upon men who give their services to their country during the present crisis.

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.
April 19, 1917.

Cattle.

Receipts 2750. There seems to be plenty of good cattle in Michigan from the way they are coming in here. Week after week they keep coming freely, although shippers claim they are nearly all in. Before the week is over the receipts will run considerably over 3000 which, for this market, is considered a good run, everything being from this state.

In the cattle division the trade was fairly active on the common grades; light butchers and bulls at last week's closing prices, but on the good stuff the market was fully 25¢ to 50¢ lower and dull. Good milch cows are in active demand and bring good prices. Common grades go to canner buyers.

The close was dull as follows: Best heavy steers \$11@11.25; best handy weight butchers steers \$10@10.50; mixed steers and heifers \$9@9.75; handy light butchers \$8.50@9.50; light butchers \$8@9; best cows \$8.50@8.75; butcher cows \$7@8; common cows \$6@6.75; canners \$5.50@6; best heavy bulls \$8.50@9.50; bologna bulls \$7.50@8.25; milkers and springers \$5@9.

Bishop, B. & H. sold Parker, W. & Co. 3 cows av \$40 at \$5.70, 4 butchers av \$32 at \$9, 3 do av \$57 at \$9; to Hammond, S. & Co. 36 do av \$60 at \$11, 1 bull wgh 1490 at \$8.25; to Sullivan P. Co. 1 cow wgh 1130 at \$7.75; to Thompson 21 steers av 1162 at \$10.35; to Shepherd 12 do av 1027 at \$10; to Kamman B. Co. 1 bull wgh 1030 at \$8.50; to Kazmer 4 cows av \$90 at \$7.75; to Sullivan P. Co. 8 cows av 1050 at \$6.75, 1 steer wgh 1000 at \$11; to Parker, W. & Co. 2 cows av 1000 at \$6, 10 do av 1067 at \$8, 1 steer wgh 1250 at \$10.50, 2 do av 645 at \$10, 1 do wgh 770 at \$9, 1 bull wgh 1150 at \$8.50, 7 cows av 1061 at \$7.75, 4 do av 1010 at \$7.75, 2 do av 860 at \$6.50, 5 do av 875 at \$5.75, 3 do av 970 at \$7, 3 do av 917 at \$5.75, 2 steers av 570 at \$9, 1 cow wgh 1350 at \$8.50; to Sullivan P. Co. 21 steers av 900 at \$10.35, 14 do av 1131 at \$11, 3 butchers av 923 at \$8.50; to Breitenbeck 27 steers av 826 at \$9.50; to Newton P. Co. 4 cows av 900 at \$6.25, 1 bull wgh 570 at \$7; to Sullivan P. Co. 8 butchers av 817 at \$9.35, 1 bull wgh 820 at \$9.50, 2 cows av 1055 at \$6.25, 3 do av 973 at \$7.50, 1 do wgh 980 at \$9, 10 steers av 1017 at \$11.10, 11 cows av 990 at \$7.40, 6 do av 1045 at \$7.50.

McMullen, K. & J. sold Bray 2 cows av 920 at \$6.50; to Goose 2 bulls av 830 at \$7.50, 1 cow wgh 900 at \$7.25, 5 butchers av 658 at \$8, 3 do av 333 at \$7; to Newton B. Co. 6 do av 663 at \$8, 3 cows av 853 at \$8, 5 do av 984 at \$7.

Calves.

Receipts 1130. The veal calf trade was dull and draggy and at the close on Wednesday was 25¢ to 50¢ lower than last week. A few extra fancy grades sold early at \$13 but the bulk of the good ones brought \$12.50 and common and mediums \$9@11.50; heavy \$7@8; Thursday best grades sold at \$12.50.

Sandel, S. B. & G. sold Losier 3 av 115 at \$12.50; to Thompson 2 av 145 at \$13, 4 av 105 at \$10, 18 av 140 at \$13, 2 av 110 at \$10; to Shipiro 18 av 140 at \$13.

Bishop, B. & H. sold Newton B. Co. 4 av 120 at \$12.50, 12 av 135 at \$13, 10 av 143 at \$12.50, 9 av 160 at \$13, 16 av 150 at \$13.50; to Thompson 18 av 150 at \$13; to McGuire 2 av 120 at \$13, 3 av 125 at \$12, 4 av 160 at \$13; to Hammond, S. & Co. 3 av 100 at \$9; to Mich. B. Co. 14 av 130 at \$12.75; to Ratner 23 av 130 at \$12.75, 7 av 150 at \$13.

Sheep and Lambs.

Receipts 1867. The run of sheep and lambs was again light and the market dull and fully 25¢ to 35¢ lower than last week. Very few wool lambs were in the receipts and quotations below are for clipped stock. Best lambs \$12.50; fair lambs \$11.50@12; light to common lambs \$7@10; fair to good sheep \$8.50@9.50; culls and common \$5@8.

Bishop, B. & H. sold Sullivan P. Co. 124 wool lambs av 68 at \$16.25; to Parker, W. & Co. 208 do av 75 at \$16.25, 26 do av 80 at \$13; to Hammond, S. & Co. 50 do av 81 at \$12.50; to Newton B. Co. 40 do av 83 at \$12.50.

Hogs.

Receipts 6544. The hog trade Monday with tops bringing \$15.90; Tuesday they dropped to \$15.75 and on Wednesday and Thursday \$15.50 was top for the best grades; mixed sold at \$15@15.50; bulk of pigs \$11@12.50; extra fancy \$13.

Crop and Market Notes

Michigan.

Livingston Co., April 9.—On account of the heavy rains no work has been done on the ground as yet. About the usual acreage of oats and corn will be planted, but a large acreage of beans. Wheat is in very poor condition but rye and clover stood the winter fairly well. Not much stock on feed on account of the high price of grain. There is plenty of roughage but practically no grain. Considerable hay is being marketed at from \$8@10 per ton. Prices are as follows: Wheat \$2; oats 70¢; corn \$2.35 per cwt; rye \$1.60; beans \$7.50; butter 38¢; eggs 28¢; hogs \$14.50; cattle \$8@9.50.

Gladwin Co., April 9.—No farm work done to speak of, fields too wet, roads are bad. Winter grains and seeding are suffering from the hard freezing. Most farmers are getting out manure and sawing wood for summer. Some beans are being sold at \$7.60. Potatoes \$2.50; wheat \$1.93; corn \$1.17; oats 74¢; rye \$1.52; hogs 13¢; butter-fat 43¢; butter 37¢; eggs 27¢; hay \$13.

Eaton Co., April 7.—Hard thunderstorms the last day of March, and the first of April took the frost out of the ground. Winter grains and meadows are starting up in fine shape. Farmers are very busy, hauling manure, fixing fences, getting up wood, and making repairs. Some farmers are so short of feed they have turned their stock on pastures. Near the usual amount of stock on hand, but feed scarce. Sugar season was late and short, but quite a bit of syrup was made. Fruit buds said to be in bad condition. Beans \$7.50; wheat \$2.05; rye \$1.62; oats 68¢; barley \$1.75@2; potatoes \$2.50@3; butter 30@35¢; eggs 24@27¢; hogs 12@14¢; cattle 5@9¢; sheep 3@7¢; lambs 8@13½¢; corn \$1.30; butter-fat 40¢.

Hillsdale Co., April 7.—The condition of wheat, rye, new clover, and meadows, seems to be fairly good, the winter not having damaged any of these crops. Plentiful rains during the last few days have done much good to wheat and clover, starting the first green of the season. The maple sugar season was rather short, and the product is selling for unprecedented prices. Yorkers 13@14½¢; dressed hogs 18¢; beef cattle 5@9¢; veal calves 12¢; live hens 14¢; chickens 20¢; eggs 30¢; good dairy butter 36¢; wool 37@40¢; clover seed \$9@10.25; potatoes \$2.75; wheat \$2.05; rye \$1.45; oats 63¢.

Genesee Co., April 12.—Frost nearly out of the ground and spring work is being started. The great difficulty is in getting help to put in the crops. In this vicinity men are attracted to the factories where high wages are paid for labor. Wheat not looking well. Seed potatoes very high and scarce, and this may cut down the acreage planted. About the usual acreage of beets and of beans will be put in and farmers are looking for a better year than last as to weather conditions. Extensive road work is planned on trunk lines for this season, and more durable material will be employed than heretofore. Many farms are changing hands at prices ranging as high as \$150 per acre.

Sanilac Co., April 12.—Wheat looks rather poor. Spring seeding is improving but farmers are planning on sowing a large acreage of spring grains. There is plenty of rough feed to carry stock through, with a surplus of hay. A smaller amount of maple syrup was made than usual. Buds are starting slowly but look healthy. All farm work is at a standstill. Potatoes \$2.25; beans \$8; oats 70¢; butter-fat 41¢; eggs 30¢.

Calhoun Co., April 7.—Winter grain is in fair condition except being small. Very little plowing has been done thus far, the ground being too wet. Only a small amount of maple syrup was made in this section. Fruit trees are in fine shape. Potatoes \$2@4; beans \$7.20; wheat \$2.08; corn \$1.30; eggs 29¢; butter 37¢; oats 65¢; rye \$1.50; flour \$10 per bbl; hogs \$14.50; cattle \$12.50.

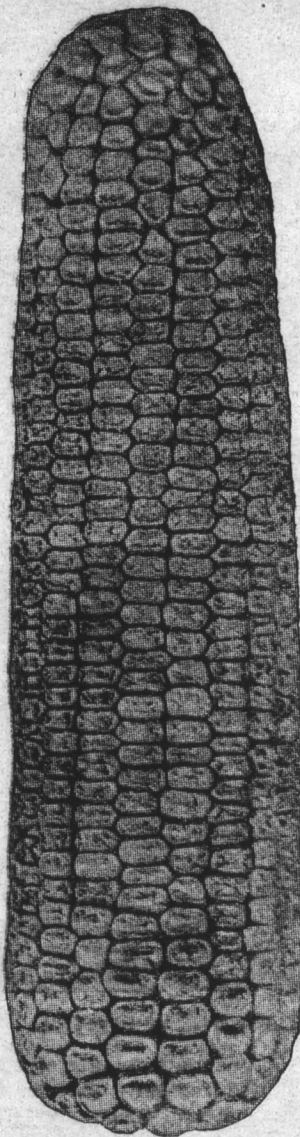
Cass Co., April 12.—Weather has been fine. Wheat and grass have not grown much yet. The ground freezes nearly every night and kills grain in exposed places. Oats not sown yet. Some plowing has been done. Seeding does not look very promising. Stock is scarce. Maple syrup crop short and sells at \$2 per gallon. Fruit trees look good. Potatoes \$2.75; beans \$7; wheat \$2.13; corn \$1.25; oats 60¢; butter-fat 35¢; eggs 28¢; cattle \$8@9; hogs \$14.50; sheep \$15@20 per head; cows \$60@80. Help is very scarce and high and hard to secure at any price.

Mecosta Co., April 7.—Winter grains in fair condition. Spring work has started. More cattle are on hand than usual and are being held to feed next year. There is a fair supply of hay in the county, but grain is scarce. The fruit trees are not in a promising condition. (Continued on page 535).

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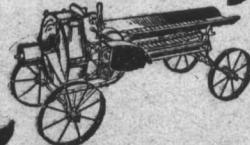
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Our poultry stock is all free range, no yards (except breeding pens). In winter our hens are in Colony Houses holding 30, 50, 100, 140 and 150 fowls—housed as suits convenience, as the average farmer will house his fowls, they are bred to natural farm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

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

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Single Comb White Leghorns
Single Comb Brown Leghorns
Single Comb Buff Leghorns (Limited).
Single Comb Black Minorcas
Barred Plymouth Rocks
White Plymouth Rocks
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White Pekin and Indian Runner Duck Eggs
Day-Old Ducklings
Geese Eggs
White Holland Turkey Eggs

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

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

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

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ANCONAS Rose and Single Combs. Eggs for Hatching; always won prizes wherever shown. W. E. West, R. L. East Lansing, Mich.

Anconas Good stock; fine layers. 30 eggs, \$2; 50, \$3; 100, \$5. Order now. T. Z. RICHEV, CANNELTON, INDIANA

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of quality guaranteed to 1,500 miles. Eggs for Hatching at low prices. Bar. Rocks, S. C. W. Leghorns, S. C. and R. C. Reds, W. Wyandottes, Buff and W. Orpingtons. Chicklet catalog free. GOSHEN POULTRY FARMS, R-19 Goshen, Indiana

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

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White, Brown, Black Leghorns. Barred Rocks. R. I. Reds. Bred for high egg production. Circular free. Book orders early. Sunnybrook Poultry Farms, Hillsdale, Mich.

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

CHICKS Rocks, Reds, Orpingtons, Wyandottes, Leghorns. Best laying strains. Ship everywhere. Prices right. Dept. 16, TIFFIN, OHIO.

Baby Chicks: 50,000 S. C. White and Brown Leghorns at \$10.00 per 100, \$30.00 per 1,000. Safe arrival guaranteed. Also Hovers and Brooders. Catalogue free. Wolverine Hatchery, Box 2221, Zeeland, Mich.

JOHN'S big beautiful hen-hatched Barred Rocks, good layers. Breeding pens (5 birds) \$10 to \$20. Eggs \$3, \$2.50; 100, \$7. Circulars. Photo. John Northon, Clare, Mich.

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Barred Plymouth Rock Eggs from full blood stock \$1.50 per 13. Prize winning strain. J. A. Barnum, Union City, Mich.

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

BRED-TO-LAY Barred Plymouth Rocks Eggs 15 for \$1.00, 100 for \$3.75. L. G. Sly, Box 970, Harrison, Michigan

"200-Egg" Pedigree White Leghorns

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

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

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

Some Turkey Tips

THE turkey crop is fifty per cent short this year and this will mean high prices. The farmer with a good crop of these birds may find that the local market is not good because of a small demand, but in the large cities turkey is appreciated by buyers with the price and this should mean good returns for the farmer.

The White Holland turkey is smaller than the other standard breeds. They are less apt to wander from the farm than Bronze turkeys and are just about the right size for a meal for the average sized family. With turkey at thirty-five or forty cents per pound the moderate sized pocketbook does not measure up to large sized turkeys.

Blackhead.

The turkey business has been seriously injured by the prevalence of blackhead in many flocks. The technical name of this disease is "infectious entero-hepatitis," and in plain United States that means inflammation of the intestines and liver, caused by a micro-organism.

Blackhead most frequently occurs in birds from one to four months of age and it sometimes wipes out entire



Turkeys Need Freedom.

flocks. The symptoms are drooping wings, ruffled feathers, diarrhea and sometimes the head turns purplish before death. On performing a post mortem, if yellowish green spots are found on the liver it is practically sure that the disease is blackhead.

Blackhead is a very contagious disease and infected birds should be destroyed and the healthy members of the flock removed to an isolated place while the former runs are disinfected with a five per cent solution of carbolic acid. Feeding sour milk to turkeys is excellent in keeping down the ravages of the disease.

Avoid Inbreeding.

In raising turkeys inbreeding must be avoided. In purchasing parent stock it is well to select birds from different parts of the state in order to be sure and obtain unrelated birds. The risk in turkey raising is so great that the most vigorous breeders are none too good.

Turkeys require plenty of fresh air and they will not stand as much confinement as hens. If the roosting poles are placed in open front sheds the birds will do very well, as they need no protection except from winds and dampness.

Many turkey raisers feed the birds nothing through the summer season when insects are plentiful on the range. A long string of turkeys strutting through an orchard gathering bugs is a sight worth watching and the value of turkeys on large fruit farms cannot be overestimated. A large orchard possibly surrounded by clover fields and woods will insure a turkey flock with an abundance of food and seven or eight months of the year they will manufacture turkey meat without cost to their owner.

The turkey hen will select her own nest in a slightly protected spot on the range and sometimes in stormy

weather it pays to place a small A-shaped coop over the nest. If the nest is in a fairly safe location possibly a coop would only attract prowling animals at night and the hen would be more sure of a good hatch if left entirely to herself. In either case raising turkeys is something of a gamble. Science seems to have made small progress in solving the living problems of young turkeys.

R. G. KIRBY.

MATURE PULLETS EARLY.

The eggs that are laid during moulting season are mostly laid by the early matured pullets. A large source of profit in the poultry business consists in hatching early chicks and rushing their development to an early maturity. In order to accomplish this, much attention need be given to their feeding. They should have a well balanced ration, largely protein in nature, and plenty of it.

Early rapid growth is obtained from muscle building protein feeds. Where the chickens are allowed to run of a large range they will get a good many worms and bugs that will prove to be a great aid. However, they must not be made to run their legs off chasing after this kind of feed as it may retard their development. If the flock is large, range feeding alone is apt to produce very poor results for the reason that the older chickens will get most of the worms and bugs and little will be left for the younger. Part of their protein feeds should be given to them and they should be encouraged to eat.

Chickens grown in conjunction with the dairy should have access to unlimited quantities of milk. Nothing can be better for them, even after they are full grown hens. We give them plenty of milk, both winter and summer. Meat scraps should also be placed before them freely, although this is not so essential where there is plenty of milk. Very little fat producing grains should be given, it had better be saved for some other purpose. Growing pullets should have plenty of exercise to make a normal, healthy and rapid growth, but they will get this on the range no matter how much feed you place before them because it is in their nature to hunt and scratch for worms and chase bugs. During the winter when they must necessarily be kept shut in it will be necessary to provide an incentive to exercise but until that time give them plenty of feed and they will provide their own exercise.

The important thing is to produce quick-maturing pullets early in spring and keep them growing steadily so that when laying time comes they will be sufficiently matured to begin laying and producing results. Then is the time of year when eggs are scarce and every pullet that lays will bring in big returns.

P. H. EATON.

DO NOT KILL THE HEN THAT LAYS THE GOLDEN EGG.

All present indications point to continued high prices for eggs, with the possibility of newly laid eggs of prime quality selling next winter at prices considerably above those of last winter. Eggs are going into storage now at costs which necessitate a retail price of forty cents or better next fall and winter in order to return a reasonable profit for handling and storing.

Whether the present shortage of eggs continues through next winter or not depends on what the farmers of Michigan do with their poultry during the next six or eight weeks. If they follow out their expressed intention of selling the greater part of the farm flock because of the high cost of feed, and the fowls which are sold are not replaced with pullets, fresh eggs will

be as scarce next November and December as the proverbial "hen's teeth."

Because of the existing shortage in the egg market and the increasing demand for eggs due to the advancing cost of other live stock products, every farmer in the state should plan to raise as many good pullets this season as he has facilities to handle. They should be carefully fed so that they will be well grown and begin to lay before the first of November. For a profitable yield of eggs during the winter months, early hatched pullets are much more valuable than hens.

The older hens may be sent to market a few at a time as fast as they stop laying. All hens which remain in laying condition through the summer should be retained until fall. Those which continue egg production until October 1 or later should be retained for use as breeders. If properly handled, hens may be carried through the summer at a good profit in spite of the high cost of feed. If these hens are thrown on the market now, the market will have an over-supply greater than the storage houses can handle and prices will be forced down to a low level.

Don't kill the laying hens; raise as many pullets as possible; have all chickens hatched before June 1; feed well and handle carefully. If these suggestions are followed, a good profit will result, and an egg famine will be avoided.—M. C. K.

CLEAN WATER FOR THE CHICKS.

Little chicks as well as big, should at all times have access to plenty of good fresh water. Where it is placed before them in a pan the old hen is apt to step on it and spill all the water. Then, too, the chicks will soon either drink it out or the sun will make it dry.

The plan that I have found satisfactory is not original with me, but I have used it a good many years with success. It consists in attaching two strips of tin or wire to the coop in such a way as to support a quart bottle upside down with the mouth of the bottle resting inside the pan and about a half-inch from the bottom. Supported in this way the bottle is easily removable for filling. When filled and placed in position the water will feed down only as fast as the water in the pan is taken out. This makes a sort of fountain, and in the summer time the water will be kept fairly cool if the bottle is kept in shade.—P. H. E.

INCREASING EGG PRODUCTION IN GEESSE.

What is the proper kind of food to give geese to make them lay? Do they want oyster shell the same as chickens and is sour milk good for them?

Newaygo Co.

H. G.

There has been very little done along the line of increasing egg production in geese.

There are some varieties such as the Toulouse and the white and brown Chinas which are considered quite productive breeds. They lay on an average of about fifty eggs a year, and are very likely to increase their egg production as they grow older.

The customary way of raising geese is to let them shift for themselves to a great extent, and if they have plenty of good grass pasture they do very well. Experience has shown that geese do not do well on a ration consisting largely of grain. Grit is an essential in the diet of the goose, but I doubt the advisability of feeding sour milk to any great extent, as I believe anything which will force egg production would likely have some detrimental effect upon the fertility of the egg.

While grit and oyster shells are essential, they are not usually provided because geese are not confined like chickens, and pick up enough of such material at most any time of the year.

Let the Boys Keep Bees

WHEN I was a boy I wanted to keep bees, but I did not have the chance to do so, for bees on the farm were not common then, and my father rented. Later, when I went into business in town I did not have time to give to them, and my other affairs took my attention, but I never got over my wish to keep bees. When I switched from editing a country paper to the florist business I was not long in securing some colonies. I never had the fear of bees that some have, and I learned quickly that the reputation they have is much more terrible than the actual fact. Now if I had been permitted to have had bees during those farm days I would have kept the home supplied with honey and made some money besides.

Care of Bees Takes But Little Time.

It does not take much of the boy's time to take care of quite an apiary. A hive can be opened, examined, and all the work necessary done on it during the noon rest, and it will be just as much a rest as sitting anywhere else in the shade, for hives should be in the shade. In these days farmers are not so particular with the boys in this respect as they used to be when labor counted so much, for now machinery does the work and the boy simply shows it what to do.

One of the fascinating things about keeping bees is the fact that we are learning something about a very interesting little insect while we are doing it. That it is always a study to see how we can coax or compel these little workers to do more for us than it is their ordinary habit of doing. If the bees when left alone will produce fifty pounds of surplus, it is a victory to make the same bees double or treble the amount for us, and it can be done, and it is done by all successful beekeepers. It is worth while to learn just how to manage the bees to the best advantage, for we may want to ask them some day to support us, and they will do it, too. Many apiaries support families in good shape, and give them many luxuries. Honey is always salable, and always commands a good price. Hardly any other food product is as stationary in price at all times, and few that always provides as certain a market at these prices. Then there is almost always a local market for all the honey a moderate-sized apiary can produce. When I started to selling honey I asked fifteen cents a pound for extracted, giving a quart jar free with each three pounds—honey weighs three pounds to the quart. I had such a demand I shipped in several sixty-pound cans every season in addition to what I produced, and my customers increased and their demands increased each season. I sold cut-out comb honey at twenty cents a pound, and sold all I would of that, for I preferred to extract, as the bees gather so much more honey when they do not have to build combs, but just to fill them.

Cost of Starting Light.

The cost of starting with bees is very light. If you can get hold of a swarm, as one can very often do in the country, you will only need to buy the hives. A young man near here has quite an apiary that he has accumulated during the last three years just by catching stray swarms. People know he is collecting bees, and when a swarm settles around close they call him up and tell him about it. He told me the other day he had more bees offered him last year than he could hive, as he did not have hives ready for them. One year when I was living in a small town I had a colony or two of bees, and a little item in the local paper mentioned my bees. Several times people called me up and told me swarms were clustered in their trees and suggested that I come and get

them. I did have two swarms that were handy.

If you are really in earnest about the bee business I would suggest that you buy five hives, knocked down, and put them together, for full directions for putting up come with them, and they come so much cheaper in fives knocked down. You will then have a good supply of hives ready for all the swarms offered, and can use the same hives for the bees to gather honey in for your use until you need the hives for brood chambers. I used full hives almost entirely for my bees, as my tractor would take a full frame as readily as a shallow frame from a super, and the large frame contained nearly double the amount of honey, taking only about half the time to extract.

Boys, send to some good bee supply house and get their catalog and study it. Make up your mind what kind of a hive will suit you best, and then send for a set. If you want any information about the hives that you do not fully understand from the catalogs, do not hesitate to write all about it to the bee supply house. They will be glad to tell you all about it. L. H. COBB.

HENS LOSING FEATHERS.

I have been having some trouble with my chickens losing their feathers around the head, and causing death in time. Can you inform me of the cause and give me a remedy? E. A. R.

The loss of feathers around the head and neck is sometimes caused by head lice. There is also a fungous disease called favus which will cause the loss of feathers around the head.

The most prominent symptom of the disease is the whitish encrustations which cause the feathers to become brittle and break off. Sometimes when hens are idle they will start picking at each other and draw blood; this often starts the habit of feather picking.

We would suggest that you keep your hens busy by making them scratch for all of their grain, give the hens an opportunity to dust, or if that is not possible, dust them thoroughly with some good lice powder, or thoroughly grease the head and neck with lard and sulphur.

This lard and sulphur ointment is good as a treatment for favus or for the control of head lice. Use nearly as much sulphur as lard, and work them into a smooth paste before applying.

A METHOD FOR DETERMINING LAYING HENS.

I wish to secure the Hogan system for selecting laying hens. California. H. S.

The following method contains the fundamentals of various systems of determining the laying hens which are frequently advertised.

Although we are not quite sure, we believe that the Hogan system closely follows this method. Pick the hen up in the left hand, and with the head down under the arm, place the fingers of the right hand in the fluffy feathers below the vent where the pelvic bones are. If three fingers can be placed between the pelvic bones, the hen is supposed to be a good layer. If there is room for only two fingers, the hen is only an average layer, and if the distance between the pelvic bones will allow the placing of only one finger, the hen is said to be a very poor layer, and if she does not start laying in about four weeks, it would be advisable to send her to the butcher.

This method is also used in selecting cockerels, those having the greatest distance between the pelvic bones being the best to use for breeding laying hens. While this system is not absolutely accurate, it is said to give very good results in the selection of high-producing hens.

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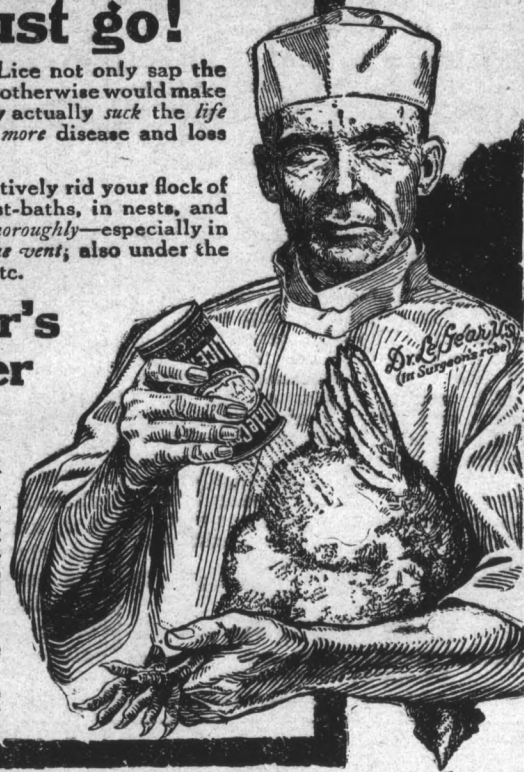
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The Grange and the Market Problem

By W. F. TAYLOR

FOR many years the Grange in Michigan has been active in the work of co-operative buying. It is probably true that more has been done along this line in Michigan Granges than in those of any other state. Much money has been saved to the membership by this work, and we should ever keep in mind the advantages of buying through our Grange contracts. But everywhere there is a demand for a better market for the products of the farm. This demand is expressed in terms that vary according to the individuals that voice it, but it is very general, and it grows more and more insistent as time goes by. While many who make a great deal of noise about it have little or nothing to market, and while others who complain bitterly of present market privileges are not in the habit of offering what they have to sell in a fit condition to bring the best prices, still, on the whole, this movement is fostered by a very competent class of farmers who, having counted the cost, are determined to stay in this fight for a better market until they win.

About a year ago the chairman of the executive committee of the Michigan State Grange appointed a committee to draft a constitution and by-laws for the formation of co-operative selling associations within the Grange. At the head of this sub-committee was George B. Horton, whose long and successful business experience gave stability to the movement, and encouraged us with bright hopes of success.

Brother Horton published the constitution and by-laws last fall, and already some associations have been formed.

It should be very easy to organize these co-operating companies within the Grange. It would seem much easier to do it in this way than to form companies outside of an organization. The Grange is already organized, the people are in the habit of gathering at its place of meeting at regular intervals, and a co-operative company simply adds one more activity to its program of work.

The writer believes fully that in every neighborhood where there is a Grange, one of these companies should be organized. This is a work that ought not to be put off either, as other agencies are assisting in the organization of selling associations in many localities, and in a majority of cases the principal ones in these companies are members of our Order, and would gladly assist in promoting purely Grange companies if they were given an opportunity.

I believe also that if Granges would get busy under wise leadership in this matter, two or more of them combining if it seemed wise to do so, many associations might be organized and thousands of members added to the Order.

The constitution and by-laws of which we have spoken were formed under the co-operative law of 1913. This law provides for the organization of companies having capital stock. But this stock differs from the stock of the ordinary corporation in two respects. First, it earns no dividend except interest on its par value, and second, it does not vote. But instead, the man votes, and the profits are divided according to patronage. Thus it will be seen that companies working under this law are purely co-operative.

There are good reasons why the federation of co-operative companies is desirable, but until the securing of the Clayton Amendment to the Sherman Anti-trust Law, their federation would not have been legal. This amendment makes possible the federation of companies "not organized for profit, nor having capital stock."

Recently we received a copy of "Sen-

ate Bill 97," another proposed measure to assist farmers in forming co-operative companies. This bill also provides for organizations having capital stock, and if passed will only further complicate the situation.

While the act of 1913 violates the letter of the "Clayton Amendment," or rather would do so providing associations working under it should attempt to federate, it does not violate the spirit of it, because the stock therein provided for is not stock in the ordinary meaning of the term. For while in the ordinary corporation the stock is the basis upon which dividends are divided, and the stock votes instead of the man, in this case the man votes instead of the stock and the profits are divided not according to the amount of stock he owns, but according to the amount of his patronage to the association.

The United States Department of Markets is promoting marketing organizations organized without stock, in harmony with the provisions of the Clayton Amendment, and is not interested in the matter of our co-operative law.

I am not going to say here what I think should be done about this particular matter, but surely it should be settled in one way or another, and co-operative organizations should be organized within subordinate Granges wherever possible.

If it is thought best to form these companies without stock, having a membership fee instead, then let it be done in that way, but by all means let these organizations be formed, wherever they are needed.

One of the easiest of these companies to form and operate is a live stock shipping association. But little money is required to carry on the business, and if the right man has been found to manage it, and the association is large enough, stock can be rounded up and shipped much cheaper in this way than in the old way, when three or four independent buyers traversed the same roads over and over, looking for business, competing with each other when it was necessary, and buying in other localities or at other times, low enough to make up for the results of sharp competition.

There are times when the man who ships through a co-operative shipping association will lose money, because there are times when the independent buyer will pay too much, but the association will procure for the shipper what his stock is worth in the market, and in the long run he who ships through the association will surely win. The history of it to date is, that everybody in the vicinity of an association wins whether he belongs or not, for competition is so sharp that the buyer pays more than he otherwise would.

From the experience of such associations as have been formed to ship live stock, it would seem that each locality producing cattle, sheep or hogs in any considerable quantity, should at once organize and ship through an association.

The state of Georgia produces about twice as many peaches as Michigan, and seventy-one per cent of the crop is marketed through associations. These companies have federated and through a central organization, are able to watch the market and prevent the shipping of fruit to those cities where the demand is already satisfied.

The troubles in marketing any perishable product are numerous, but I think the greatest is the shipping of large quantities to markets that are already congested. There is no way to prevent it, except by thorough organization.

Not long ago the writer attended a

meeting of the celery growers of Muskegon and Ottawa counties. The growers were organized in both counties, and have accomplished some things worthy of note. The Muskegon Association ships all its celery to one market, and keeps a man there all the time. The shipments are made in one lot, consigned to this man, but marked to the several commission houses for which they are intended.

The man on the job sorts the shipments out and notes the condition in which the stock arrives. But he does much more than this—he knows the commission men in that city, he knows the market, and as he is all around, he knows the supply.

One of the commission men was at the meeting, and expressed himself as highly pleased with the arrangement. He said that while it worked out to the advantage of the growers it was a splendid arrangement for the houses handling the goods.

As I sat in this meeting as a visitor, having no interest except a general interest in the great work that is being done along this line, I could but wish that every subordinate Grange in Michigan might be alive to its privilege and do its part in helping to solve the problem of a better market for the products of the farm, the orchard, and the garden.

PURPOSE OF THE GRANGE.

Our Order touches every side of life. It congratulates the strong, encourages the timid, whispers hope to the depressed, quickens the mind, strengthens the body, radiates affection, and leads each soul nearer to its Great Exemplar—who came to earth to teach us the true lessons of a self-forgetful life.—Olivia Woodman, State Grange Chaplain.

AMONG THE LIVE GRANGES.

Sumner Grange met with Mr. and Mrs. T. H. Buttular and a feast for both the mind and body was in store for those present. After partaking of a dinner which for example "tis said," the writer was unable to eat or sleep for two days thereafter. I am sure he could not have suffered more after eating a Thanksgiving dinner. After the meeting was called to order the first thing we did was to veto any more day meetings because of the distress that is sure to follow. We endorsed the Torrens System of Land Transfers and decided the present method of collecting dog taxes should be given a thorough trial before changing same. We are heartily opposed to an angler's license. Also opposed to any change in the present mortgage tax law. The meeting was turned over to the lecturer and the theme was "Beautifying the Home." The subjects were in part shrubbery, flower beds, arrangement of buildings, fences, conveniences in the house, the boys' and girls room and so forth, these subjects were assigned to the members at a previous meeting so the subjects were made interesting. We regret that a change of time of meeting was made necessary because we are just getting enthused.

GRANGES ORGANIZED AND RE-ORGANIZED.

The following is the number of Granges organized and re-organized from January 1, 1917, to March 31, 1917, both inclusive, as follows:

Organized.

California 2; Colorado 17; Idaho 9; Illinois 4; Indiana 4; Iowa 1; Kansas 15; Maryland 5; Michigan 10; Minnesota 1; Nebraska 4; New York 8; Ohio 24; Oklahoma 32; Oregon 7; Pennsylvania 18; South Dakota 2; Vermont 1; Washington 20; West Virginia 1; Wisconsin 6. Total 191.

Re-organized.

Delaware 1; Michigan 4; Pennsylvania 1; Washington 1. Total 7.

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.

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."

Associational Sentiment:

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

BE A TRUE PATRIOT.

I believe it our duty at this time, that the Farmers' Clubs, as a whole, enlist themselves to the loyal support of our country's need, during the struggle in the great world's war. Let us each feel our responsibility to a cause of right and justice, and stand by our President as true patriots. If our American sons must go into this awful conflict, let us at home see that they have good care and enough to eat, and as farm women lay aside our crochet and fashions and help by our time and money, and prepare for the time when, because of the war, women may be called to take the place of men on the farm or in all industrial pursuits. The American farmer in the months to come can do no better deed of valor and service to his nation than the duty that lies before him on his own acres today. All hail the farmer patriot who from his work shall in the harvest time bring rich store for the nation's need in time of trial.

Let every man, woman and child mobilize for a greater increase of productivity by planning and rushing his crops in due season.

Mrs. J. S. BROWN,
Secretary State Association of Farmers' Clubs.

CLUB DISCUSSIONS.

Discuss Federal Farm Laws.—The wells-Dayton Farmers' Club met at the farm home of Mr. and Mrs. George Spencer, April 4. It was an ideal spring day and nearly every member of the Club and several visitors were present. A fine dinner was served. Mrs. H. Johnson was the chef, and proved herself very capable. After dinner the meeting was called to order by President Stokes and all listened with pleasure to the following program, prepared by Mrs. Frank Raymond: Song by Club, followed by prayer by Chaplain Hiram Johnson; recitation, "Darby and Joan," by Mrs. A. G. Forbes. She also responded to an encore with "My Daughter Mary Ann," both being very good old-fashioned recitations which called forth much laughter. Mrs. S. Stokes gave a reading, "The Demonstration Supper." Mrs. Fred Jenks sang two beautiful solos and Mrs. T. Taite played her accompaniments. The report of the committee on the Federal Farmers' Loan Association was very interesting, explaining it fully. Mrs. Daily recited "Was it You?" and responded to an encore with a patriotic yell which was received with enthusiasm by the other members. The question box discussion was chiefly given to the discussion of pedigreed seed. It was suggested that uniform seed of kinds best adapted to this locality be grown by different members of the Club and furnished to the rest at a fair price. After another song by the Club the meeting was adjourned. The next meeting will be only a half-day session and will be at the home of Mr. and Mrs. C. Hunt.—Mrs. Clarence Harmon, Cor. Sec.

AN APPEAL FROM THE PRESIDENT.

(Continued from page 506).
South Should Produce Food.

"I particularly appeal to the farmers of the south to plant abundant food stuffs, as well as cotton. They can show their patriotism in no better or more convincing way than by resisting the great temptation of the present price of cotton and helping, helping upon a great scale, to feed the nation and the peoples everywhere, who are

fighting for their liberties and for our own.

"The variety of their crops will be the visible measure of their comprehension of their national duty.

"The government of the United States and the governments of the several states stand ready to co-operate. They will do everything possible to assist farmers in securing an adequate supply of seed, and adequate force of laborers when they are most needed, at harvest time, and the means of expediting shipments of fertilizers and farm machinery, as well as of the crops themselves when harvested.

"The course of trade shall be as unhampered as it is possible to make it and there shall be no unwarranted manipulation of the nation's food supply by those who handle it, on its way to the consumer. This is our opportunity to demonstrate the efficiency of a great democracy and we shall not fall short of it.

A Message for Middlemen.

"This, let me say to the middlemen of every sort, whether they are handling our foodstuffs or our raw materials of manufacturers or the products of our mills and factories:

"The eyes of the country will be especially upon you. This is your opportunity for signal service, efficient and disinterestedness.

"The country expects you, as it expects all others, to forego unusual profits, to organize and expedite shipments of supplies of every kind, but especially of food, with an eye to the service you are rendering, and in the spirit of those who enlist in the ranks, for their people, not for themselves.

"I shall confidently expect you to deserve and win the confidence of people of every sort and station.

"Small Profits, Quick Services."

"To the men who run the railways of the country, whether they be managers or operative employees, let me say the railways are the arteries of the nation's life and that upon them rests the immense responsibility of seeing to it that those arteries suffer no obstruction of any kind, no inefficiency or slackened power.

"To the merchant, let me suggest the motto: 'Small profits and quick service,' and to the shipbuilder, the thought that the life of the war depends upon him.

"The food and the war supplies must be carried across the seas no matter how many ships are sent to the bottom.

"The places of those that go down must be supplied and supplied at once.

An Appeal to Every Worker.

"To the miner, let me say that he stands where the farmer does: The work of the world waits on him. If he slackens or fails, armies and statesmen are helpless. He also is enlisted in the great service army.

"The manufacturer does not need to be told, I hope, that the nation looks to him to speed and perfect every process; and I want only to remind his employees that their service is absolutely indispensable and is counted on by every man who loves the country and its liberties.

"Let me suggest also that everyone who creates or cultivates a garden helps and helps greatly to solve the problem of the feeding of the nations; and that every housewife who practices strict economy puts herself in the ranks of those who serve the nation.

"This is the time for America to correct her unpardonable fault of wastefulness and extravagance. Let every man and every woman assume the duty of careful, provident use and expenditure as a public duty, as a dictate of patriotism which no one now can expect ever to be excused or forgiven for ignoring.

"In the hope this statement of the needs of the nation and of the world in this hour of supreme crisis may stimulate those to whom it comes and remind all who need reminder of the solemn duties of a time such as the world has never seen before, I beg all editors and publishers everywhere to give as prominent publication and as wide circulation as possible to this appeal.

"I venture to suggest also, to all advertising agencies that they would perhaps render a very substantial and timely service to the country if they would give it wide-spread repetition.

"And I hope the clergymen will not think the theme of it an unworthy or inappropriate subject of comment and homily from their pulpits.

"The supreme test of the nation has come. We must all speak, act and serve together.

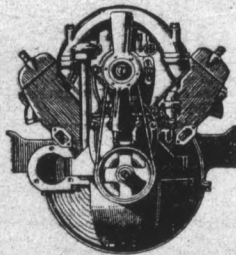
"WOODROW WILSON."



The "Wolverine Eight" Offers all Eight Cylinder advantages plus greater accessibility and economy

You can grind the valves of a "Wolverine Eight" quicker than you can grind the valves of any other motor. Valves are in the head, with detachable head. You can adjust the tappets in five minutes.

Owners are averaging 17.7 miles to the gallon of gasoline—many even better than that. And the four full elliptic springs cut tire cost in half.



V type Eight with overhead valves

Note these value features:

Valve-in-the-head Ferro-Jackson motor, without cages or walking beams. Cylinders 3 x 3 1/2", 48 H. P. Three bearing crankshaft.—Thermosiphon Cooling System, doing away with leaky pumps.—Dry Disc Clutch. Soft and easy in action.—Hotchkiss Drive without radius rods or torsion rod.—Covert Transmission, with Hyatt roller bearings.

Large tires, considering the weight of the car—32 x 4"—non skid in the rear.

Stewart Power Tire Pump connected and ready for use. Simply press a lever and pull out the hose and you can inflate your tires.

Auto Lite Starting and Lighting System.—Zenith Duplex Carburetor.

Wide doors, front and rear—Extra thick upholstery. A-1 leather and genuine curled hair.—One man top. Curtains open with doors. Electric horn etc. Write for catalog or go to nearest Jackson Dealer.

Five Body Styles

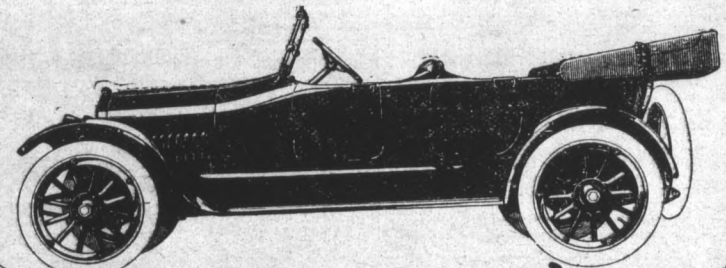
Five-Passenger Touring Car	\$1395
Two-Passenger Roadster	\$1395
Four-Passenger Cruiser, including floor wire wheels	\$1495
(Wood wheels \$100 less.)	
Five-Passenger Sedan (Demountable Top) including regular top	\$1605
Seven-Passenger Jackson Springfield Sedan	\$2095
All prices f. o. b. factory.	

JACKSON AUTOMOBILE COMPANY

1508 E. Main Street

JACKSON, MICHIGAN

Branch 978 Woodward Ave., Detroit



Guaranteed to do more and better work with less power

than any other; yet it costs no more to buy. Practically proof against breakdown. Solid oak and steel frame, mortised, bolted, braced; impossible to pull out of line. Spiraled knives give clean shearing cut, requiring least power. 10 lengths of cut (5/16 to 2 1/2 in.). Frictionless self-feed table runs on chilled iron rollers. Speed of blower adjustable to least use of power for any height silo. One lever controls feed rolls and table. Automatic safety device.

APPLETON Silo Filler

Send for two free books!

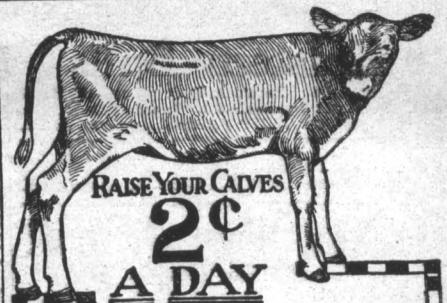
Silo book and Appleton Silo Filler catalog. Appleton Mfg. Co., 420 Fargo St., Batavia, Ill.



IRON AGE
Farm, Garden and Orchard Tools
Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The IRON AGE Potato Planter solves the labor problem and makes the best use of high priced seed. Means \$5 to \$50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses
No Doubles

Bateman Mfg. Co., Box 24B, Grenloch, N. J.



RAISE YOUR CALVES
**2¢
A DAY**

Raise strong, healthy calves at a cost of only 2¢ per day for calf meal, simply mix with skim milk and water. Don't use whole milk at a cost of 20¢ to 30¢ per day and feed at a loss. **SELL YOUR WHOLE MILK!** Cow's milk varies, too, according to the animal's health, and often causes scours, whereas Prussian Calf Meal will not vary or scour.

Prussian Calf Meal

is also rich in vegetable matter, protein and fat, and is a real milk substitute. Only about one-fourth as much meal is required to a feeding as most other brands. If your dealer can't supply you, write to us. Money cheerfully refunded if not absolutely satisfactory.

TRY A 12-LB. PAIL TODAY!
PRUSSIAN REMEDY CO.,
Dept. Z, St. Paul, Minn.



MORE MONEY

for tenant more money for owner, in our Active Fertilizers.

Just ask nearest office for booklet. Agents wanted.

The AMERICAN AGRICULTURAL CHEMICAL COMPANY

New York, Baltimore, Buffalo, Philadelphia, Boston, Detroit, Cincinnati, Cleveland, etc.

AGENTS: Sell guaranteed paints to your friends. Big Money maker for you. Write for our special agents proposition, 121 Citizens Bldg., Cleveland, O.

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-
boullet rams, Hampshire pigs (either
sex) and Holstein bulls. A good chance
for a small investment to reap the bene-
fit of a large expenditure of capital and
years of expert breeding.
Flanders Farm, Orchard Lake, Mich.

CATTLE.

ABERDEEN-ANGUS

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

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

MILO D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM
GUERNSEYS

The demand for Guernseys has been
so great that our surplus stock is
all sold.

We will be on the market again in
the fall.
We thank all for their letters of
inquiry.

CAMPBELL & ANGEVINE,
Coldwater, Michigan.

Registered Guernsey Heifer 275 F. O. 3, your city.
Pauline Spottwood, who has an A. R. O. record over 500
lbs. fat. She is bred to a May Rose bull, whose dam has
an A. R. O. record of over 500 lbs. Has been bred about
four months. **J. M. WILLIAMS, No. 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 calf for sale, from
A. R. dam and cow on test.
GEO. N. CRAWFORD, Holton, Mich.

"TOP NOTCH" HOLSTEINS

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

Bigelow's Holstein Farms,
BREEDSVILLE, MICH.
Have Some Fine Registered Stock For Sale

Holstein Bulls

1 to 9 months old. Dam's A. R. O. Our herd sire is
Johanna McKinley Segis 3d. 7 nearest Dams aver-
age 27.26 **BLISSVELDT FARMS, Jenison, Mich.**

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

Do You Want A Bull?

Ready For Service.

From a grand daughter of **The King of the
Pontiacs**. Sired by a bull that is more than a half
brother to the **Champion Holstein Cow of the
World**, and whose dam is a 30 lb. 6 1/4 fat daughter
of **Pontiac Aggie Korndyke** who has more 30 lb.
daughters than any other living bull. If you do
write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

Holstein Calves, 10 heifers, and 2 bulls 15-16ths pure.
H's weeks old, beautifully marked, \$20.00 each, crated
for shipment anywhere. **Edgewood Farm, Whitewater, Wis.**

REG. HOLSTEINS: Herd headed by Albina Bonte
Butter Boy No. 9324. Dam's record at 6 yrs. butter
25.53 lbs. milk 619.4. Yearly record at 2 1/2 yrs. butter
802 lbs. milk 1862 lbs. **W. B. READER, Howell, Mich.**

Cluny Stock Farm
100 REGISTERED HOLSTEINS 100
THE MILK AND BUTTER KIND

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

OAK LEAF FARM

Herd Sire

Ypsiland Sir Pletertie De Kol

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

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

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

Parham's Pedigree Stock Farm Offers reg. A. R. O.
Holstein cows, Male Calves, Show Bull ready for service no akin to
cows, priced \$125. **R. B. PARHAM, Bronson, Mich.**

THE MICHIGAN FARMER

SEVENTH ANNUAL SALE

OF THE HOWELL CONSIGNMENT SALE CO.

AT HOWELL, MICHIGAN, APRIL 26, 1917.

80 Head of Registered Holstein 80
of superior breeding and individuality from 30 to 33 lb. sires or bred to such,
some carrying 62 1/2 % of the blood of the new 50.68 lb. cow. A chance to get foun-
dation stock. Catalogs April 12. **Mark B. Curdy, Secy., R. 6., Howell, Mich**

Jerseys and Duroc Jerseys

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

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

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

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

Ann Arbor, Mich., R. 7.

10 HOLSTEIN BULLS at FARMERS' PRICES

Sired by Long Beach DeKol Korndyke. His sire Friend Hengerold DeKol Butter Boy. Dam a daughter of
Pontiac Aggie Korndyke. She has a 1200 lb. record, 11-30 lb. sisters, 5-1200 lb. sisters. Her dam, a daughter of
Friend Hengerold DeKol Butter Boy has 1000 lb. year record. Has 4-30 lb. sisters, 5 sisters above 1200 in year.
LONG BEACH FARM, AUGUSTA, (Kalamazoo, Co.), MICH

842 Lbs. BUTTER

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

WINNWOOD HERD

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

Reference: *Old State Bank, Fremont, Mich.*

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

1200-lb. Bred Young Bulls

Their sire, Maplecrest DeKol Hengerold. We offer
one born Feb. 12, 1916, out of a 21-lb. cow from sister
to 32-lb. cow. His grandsire is sire of the famous
Banostine Belle DeKol, 1322.93 lbs. butter, 1 yr. Write
for pedigree and price.
**HILLCREST FARM, F. B. Lay, Mgr.,
Kalamazoo, Mich.**

Ten Good Young Holstein Cows For Sale

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

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

Holstein and Guernsey Heifer and Bull Calves

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

FOR SALE Reg. Holstein cow, 10 yrs. old,
due May 1st, has better than a 19lb
record at 4 yrs. old. Price \$200.00. **Chas. I. Cook,
Fowlerville, Box 438, Michigan.**

HOLSTEIN COWS: bred yearlings and calves for
dairy use. Every cow has produced a vigorous calf dur-
ing year. **C. L. Hulet & Son, Okemos, Mich.**

For Sale Holstein bull calf, dam A. R. O. 24.13, 4 yr.
Price \$80.00. Reg. and bred from un-
tested dam \$30. **J. R. Hicks, St. Johns, Mich.**

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

Rinkland Herd Reg. Holstein Friesian Cattle
Herd average 1200 lb. milk
each. **John A. Rinke, Warren, Mich.**

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

High Grade unregistered heifers, fresh with
second calf priced to sell.
B. B. REAVEY, AKRON, MICH.

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

HEREFORDS

10 Bull Calves from 4 to 12
months old.

ALLEN BROS., PAW PAW, MICH.

The All-Around

Jersey is the farmer's cow. She's his
friend and pride—the beauti-
ful, 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

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

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

Veterinary.

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

Canine Distemper.—I have an Aire-
dale dog that has been sick for the
past two weeks. He gags and vomits
up a slimy substance, has thick mucus
in corners of both eyes, and breathing
is somewhat labored. His appetite is
rather poor and he is very dull and
dumppish. **F. E. McG., Adrian, Mich.**—
Dissolve 20 grs. of borate of soda, 20
grs. of boric acid in four tablespoon-
fuls of clean boiled water and drop
some into corner of eyes twice a day.
Give him 2 grs. of quinine every four
hours and feed him any kind of food
that he craves. Good care and suffi-
cient food supply and fresh air will
benefit him.

Bog Spavin.—Last fall while running
in pasture one of my three-year-old
colts must have sprained his left hock
joint, causing a bunch in fore part of
hock and there is also some swelling
on side of joint, in fact, both of the
joints are filled and puffy. **H. E. R.,
Maple City, Mich.**—Clip off hair and
blister both hocks twice a month. Ap-
ply one part powdered cantharides and
four parts fresh lard; or you can safe-
ly use any of the commercial bog
spavin remedies that are regularly ad-
vertised in this paper.

Constipation.—We have a three-year-
old heifer that came fresh three weeks
ago. The hind feet of calf came first
and we had to assist her in calving.
Since she recovered from this opera-
tion, her bowels have been constipated
and I would like to know what to do
for her. **N. V., Sanford, Mich.**—Give
her 2 ozs. of Glauber's salt at a dose
in either feed or water twice a day
until her bowels open, then give as
much of the salts as you believe nec-
essary to regulate bowels. Feeding
her well-salted bran mash, clover, al-
falfa, silage or roots should open her
bowels without any medicine. Some
walking exercise will be of great ben-
efit to her.

Blocked Quarter.—Last fall one of
my cows received an injury to one
teat, causing later on a complete stop-
page of milk flow; since then a hard
bunch seems to have formed in lower
part of quarter, which I thought could
perhaps be reduced, or the teat opened
up so that she would give milk from
this quarter again. This is an extra
good cow, therefore I dislike to beef
her. **J. A. K., Cass City, Mich.**—Apply
one part iodine and nine parts lard to
caked portion of udder every two or
three days. A dull pointed probe
could perhaps later on be forced
through teat canal, then she would give
milk; however, I might say that work
of this kind should be done by a per-
son who has had experience in treat-
ing similar cases. Give her 1 dr. of
potassium iodide at a dose in feed or
water twice a day.

Rheumatism.—I have a six-year-old
cow that freshened the middle of De-
cember and has seemingly been in
good health up to ten days ago, at
which time she commenced to gradu-
ally get stiff. She gives a nice flow of
milk, her bowels and kidneys are
working normally. **J. M., Wayne Co.,
Mich.**—Give her 2 drs. of sodium sal-
icylate and a teaspoonful of acetate of
potash at a dose in feed or drinking
water two or three times a day and
she will soon show some improvement.

Weak Calf.—I have a thoroughbred
Holstein cow that had a calf one week
ago. The calf has never been able to
stand up, seemingly having no control
of himself; when helped on foot is un-
able to stand and seems unable to hold
up its head. I forgot to say that it
has a splendid appetite and drinks
well. What can be done for a calf in
this condition? **F. J. L., Hastings,
Mich.**—Give calf's mother good care,
feed her well in order that she will
give plenty of good milk, feed the calf
every two or three hours, but be sure
that the feeding utensils are kept clean
and the milk fed to it right away after
it is milked, is all you can do for the
calf.

Frozen Teats—Caked Udder.—We
have a cow that froze her teats; two
of them were slow in healing and low-
er portion of udder is caked. Most of
this caking of udder is gone and we
are getting about a gallon of milk at a
milking from the two sound quarters,
but only a teacupful from the other
two teats. What can we do to remove
the balance of the cake and bring back
her milk yield to normal? **A. C., Con-
verse, Ind.**—Apply one part iodine and
nine parts fresh lard to caked portion
of udder two or three times a week.
A recovery in this kind of a case is
very doubtful.

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

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

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

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

Maple Hill Farm Registered Jersey Cattle
Stock under 2 1/2 years old.
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Lillie Farmstead Jersey Cattle. Bull calves from R
of M. Cows, also heifer calves and several bred
heifers for sale. **Colon C. Lillie, Coopersville, Mich**

The Wildwood 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 Baldeen, Capac, Mich.**

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

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

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

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

Francisco Farm Shorthorns
Big Type Poland Chinas

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

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

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

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

Cattle For Sale

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

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

SHORTHORNS Maple Ridge Herd, Estab-
lished 1887. Young bulls
for sale. **J. E. Tanswell, Mason, Michigan.**

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

HOOS.

Durocs and Victorias

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

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

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

High Class Fall Boars and Gilts

\$25 to \$50. 2 fall yearling sows to farrow in June. S. C.
W. Orpington eggs for hatching from great big winter
layers. \$3 for 30 eggs. **Newton Barnhart, St. Johns, Mich**

Duroc Jerseys 18 bred gilts for sale
priced to sell.
Carey U. Edmonds, Hastings, Mich.

Durocs For Sale Big Heavy Boned

Fall boars and gilts, weight 125 lb. to 200 lb. each, not
extra fat but in good breeding flesh. Also one yrl. Reg.
Percheron Stallion, color black and a good one.
M. A. Bray, Estate, Okemos, (Ingham Co.) Mich.

Heaves.—I have a valuable mare nine years old that recently shows symptoms of heaves. Z. J. Mayville, Mich.—Feed no clover or dusty, musty, badly cured fodder of any kind, only a little well cured timothy once a day is all the roughage she should have. If she is a ravenous eater, pot-bellied, bed her with shavings or sawdust. Grain or grass is the best summer feed; grain and roots the best winter feed for an animal in her condition. Give her 1 dr. fluid extract lobelia, 1 dr. muriate ammonia, 1/2 dr. fluid extract nux vomica and 3 drs. Fowler's solution at a dose in feed three times a day.

Cow Gives Bloody Milk.—I have a cow that gives bloody milk every few days. Can she be cured? J. B., Jr., Tustin, Mich.—Rough milking, too scant bedding and other injuries cause cows to give bloody milk; therefore, it is up to you to remedy this ailment by a removal of the cause, then she will soon recover.

Cow Failed to Clean Properly.—I have a cow that came fresh three weeks ago and failed to clean properly. Is her milk fit to use? I am not sure that she didn't clean all right, but she is not well. I. T., Marion, Mich.—I believe her milk is fit for use. Give her 1 oz. of ground gentian, 1/2 oz. of ground ginger and 1 dr. of powdered plenty of grain and few roots.

Indigestion—Elbow Tumor—Swollen Hock.—I have a span of colts three and four years old that are not thriving; besides, there are several small bunches under the hide. I also have a horse that has a shoe boil, and another horse that is troubled with swollen hock. J. R. H., Yale, Mich.—Groom your colts well twice a day. Increase their food supply, especially their grain ration. Give each of them a tablespoonful at a dose in feed three times a day of the following mixture: One part powdered sulphate iron, one part ground nux vomica, one part salt, one part fenugreek and four parts ground gentian. Apply equal parts tincture iodine and spirits of camphor to shoe boil and swollen hock three times a week. The elbow tumor should perhaps be cut out; however, this is work for a veterinarian.

Pica—Licking Disease.—I send you a remedy for cattle that are inclined to eat wood. Mix together four pounds of ground bone, two pounds of calcium phosphate. Give a tablespoonful at a dose in feed to each cow that is inclined to eat wood, a dose twice a day. G. W., Harbor Beach, Mich.—The causes of pica are not known. Doubtless it is sometimes the result of feeding spoiled forage, therefore it becomes a case of forage poisoning. If ailments of this kind were treated early by making a complete change in the food supply, also cleaning and thoroughly disinfecting the stable, feeding a good quality of clover, alfalfa or roots, or turning the cattle out on grass seems to always have a good effect in correcting this ailment. (The remedy you prescribe is a proper one, but the cause should be removed).

Garget.—One hind quarter of cow's udder is caked; what shall I apply? A. A. M., LaGrange, Ind.—Apply one part iodine and nine parts fresh lard daily.

Wind Puffs.—I have a five-year-old mare that is developing wind puffs, and I would like to know if they can be removed without blistering. Have applied hot water, but nothing else. C. S., Millbrook, Mich.—Apply equal parts tincture iodine and spirits of camphor three times a week and bandage legs occasionally.

Sore Throat.—Have a western gelding 16 years old that is not thriving; he does not eat enough feed, besides he often chews food, then drops it out of mouth. Our local Vet. floated his teeth, which did not appear to help him. At a later date he blistered his throat and this failed to do him much good. By cutting and making his feed moist, he eats it best. C. W. E., Whitehall, Mich.—There is perhaps some soreness in back part of mouth, or throat, causing most of the trouble. Dissolve a teaspoonful of salt in one pint of tepid water and gargle out the throat three times a day. Apply equal parts tincture iodine and camphorated oil to throat once a day. Give him 1 dr. fluid extract nux vomica, and 3 drs. of Fowler's solution three times a day.

Mule-foot Hogs.—I have nine mule-foot and Duroc pigs farrowed February 24. I never saw sleeker, fatter or livelier pigs, extra large, and they have continued to grow like weeds. Now two of them have very crooked sway backs, the back sinks down behind the shoulder and a very decided hump over hips. Last year a neighbor had mule pigs that way, that never grew much, and hind parts seemed to be paralyzed later. Local Vet. pronounced

the ailment a spinal affection. Is that a mule-foot characteristic? Can you tell me the cause and remedy? Could it be because they were too fleshy? I have fed the sows corn, tankage, skim-milk and some alfalfa. The sow is a hearty eater and great milker. L. H. B., Baroda, Mich.—Mule-foot pigs are not any more susceptible to disease, nor any more likely to inherit constitutional defects than any other breed. If your sow had been fed less corn and exercised more, her pigs would perhaps have been a little stronger, but not quite so fleshy, then they would perhaps have done better as young pigs. Feeding a balanced ration and seeing that not only the sow but the pigs have sufficient exercise will be sure to benefit them.

CROP AND MARKET NOTES.

(Continued from page 529).

dition, although it is a little too early to know definitely. Wheat \$2.08 per bu; beans \$6.50@7.50; rye \$1.25; corn \$1.25; oats 67c; potatoes \$2; butter 26 @35c; eggs 27c.

New York.

Orleans and Niagara Co.'s, April 11.—Winter grains are in poor condition. They may improve with warm weather. Old meadows are fair, but new seeding is poor. Very little live stock on hand. Spring is opening up slowly, and spraying is being delayed by freezing. Fruit trees are in very good condition. Potatoes \$3; milk 3c per lb; farm labor \$2@2.50 per day and board, month hands are getting \$40@50.

Steuben Co., April 11.—Winter grain damaged by heaving. Meadows and new seeding are looking well, though showing damage in many spots from mice. The season is cold, with high winds, and very little plowing done. No oats have been sown thus far. The maple syrup yield was less than usual, producers retailing at \$1.75 per gallon for syrup, and 28c for sugar. Dairy cows are in good condition. Many peach buds are dead, but other fruit trees are in good condition. Condensary price for milk in April \$12.12; potatoes \$2.25; beans \$7; eggs 30@33c; apples 75c; butter 38@40c; hay \$10 @12 per ton.

Columbia Co., April 10.—The winter grains are in good condition. Not much spring work done yet, the season being late. Feed is plentiful and farmers hold an average amount of stock. Maple products are plentiful here considering the number of maple groves. Fruit trees are in good condition. Potatoes \$3; beans \$7; wheat \$2; corn \$1.30; milk \$2.75; butter 45c; eggs 30c.

New Jersey.

Monmouth Co., April 9.—The winter grains are looking fine. New seeding and meadows are in good condition. Weather is cold but favorable for the spring work. Farmers have little live stock on hand, but plenty of feed. Fruit trees are promising. Potatoes \$2.50@3; wheat \$2.25; corn \$1.25; milk 5c per qt. Farmers are planting about the usual acreage of potatoes.

Pennsylvania.

Perry Co., April 10.—Winter grains are badly damaged. Grass lands also make poor showing. Spring work has hardly begun, as there are two inches of snow on the ground. The fruit situation is not promising. Wheat \$2; corn \$1.15; oats 55c; potatoes \$2 per bushel. There are a good many light horses for sale. Many men are leaving the country for the city, thus reducing available help for farm work.

Indiana.

Elkhart Co., April 12.—The condition of winter wheat is below normal. Farmers are preparing to put out a large acreage of spring crops. Feeding stock is scarce and also grain, but roughage is plentiful. Potatoes \$3; corn \$1.20; wheat \$2.07; butter 35c; eggs 28c; hogs \$13; cattle \$6@8.

Missouri.

Warren Co., April 10.—Spring rains have started wheat and rye, and new seeding as well as old meadows are looking good. Spring work has opened up and much plowing is already done. Live stock has sold off very closely. Indications are for a large crop of fruit excepting peaches, which promise to be a failure here. Potatoes \$3; wheat \$2.15; corn \$1.25; butter-fat 46c; eggs 28c; hens 20c; hogs \$15.

Minnesota.

Stearns Co., April 9.—Winter grains and meadows are looking fine at present, as freezing has not damaged them much. Spring work has not started. The ground is very slow in drying out, as we had an abnormally large amount of snow last winter. Farmers have a considerable amount of live stock on hand, but feed is scarce, and the stock is looking poorly. Butter-fat 40c; eggs 30c; wheat \$2.10; rye \$1.55; barley \$1.20; corn \$1.20; potatoes \$2.

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Put flesh on its bones. Give it life and vigor. Can add 50% to looks and value. Satisfaction guaranteed or no pay. Send postal for free offer.

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HOGS

Swigartdale-Berkshires

20c pork is nearly here. The Berkshire has paid the interest in the past, but now will lift the mortgage.

We produce the best in Berkshire type as proven by our merited success at Detroit and Grand Rapids the past two years, by winning most of the first and Grand Champions premiums. Winning the Premier Breeders' ribbon in 1916.

We have decided to place on sale 2nd prize boar (6 month old) Detroit 1916. He has developed splendidly, most perfect in type, has a grand back, shows wonderful growth and smoothness.

We have some very desirable gilts which we are just starting to breed, we would book your order for delivery when safe in pig or ship you one still open.

We would also remind you of our Holstein-Friesians. If you want a herd sire for use this fall or winter we have several bull calves from tested cows with wonderful milk records behind them.

All stock guaranteed to be as represented

SWIGARTDALE FARM
PETERSBURG, MICH.

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

Durocs A few big smooth Sept. gilts to be bred for early fall farrow. Bell Phone. E. D. Heydenberk, Wayland, Mich.

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

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

Bargains in Duroc Bred Gilts Six head of early fall gilts weighing 160 to 180, bred for July farrow at \$35 and \$40 each. C. Burlingame, R. 4, Marshall, Mich.

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

Raise Chester Whites?

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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

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

CHOICE BRED GILTS Bred to Big Prince 5002, sired by Wildwood Prince 1110 lb. 3 yr. Grand Champion at Iowa, sold for \$750. Ship O. O. D. —J. Carl Jewett, Mason, Mich.

O. I. C. Year old boar 2nd prize winner at Grand Rapids fair also spring gilts and boars ready for service. A. J. Barker, Belmont, Mich. R. R. 1.

O. I. C. and Chester White Swine

Strictly Big Type with Quality. Gilts bred for Spring farrow, all sold. Five fine Sept. gilts bred for July farrow. Have a few good fall pigs left, either sex. We are also booking orders for early Spring pigs. Can furnish in pairs not akin. Marlette, Mich. R. 1. Newman's Stock Farm.

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

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

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

O. I. C. Gilts bred for June and July farrow. Also boars of September farrow. H. W. MANN, Danville, Mich.

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. Choice gilts all sold. Choice fall pigs out of prize winning stock. Write for low prices. A. V. HATT, Grass Lake, Mich.

O. I. C's. Buy the best and breed them better. Fall Gilts and Boars. CLOVER LEAF STOCK FARM, R. 1. Monroe, Mich.

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

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

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

Poland Chinas. As big, as good, as grow in Iowa. Herd headed by Goliath Farver. I can please you. Robert Martin, R. 7, Hastings, Michigan

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

Large Stiled Poland China, fall and spring pigs. Shorthorn bull, 6 months old. 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.

For Sale Registered Big Type Poland China boar, 13 mos. old. Sow pigs, 6 mos. old. M. E. HESS, 63 S. Johnson Ave., Pontiac, Mich.

HALLADAYS' HAMPSHIRE All sold, except fall pigs. We are booking orders for spring pigs. O. H. Halladay & Son, Clinton, Mich.

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

Big Type Poland China fall boars. Am booking orders for spring pigs, satisfaction guaranteed. G. W. Holton, R. 11, Kalamazoo, Mich.

HAMPSHIRE SWINE My herd contains the blood lines of many of the most noted champions of the breed. My herd boar, Claytons Lad, 18233 is a brother of Look Out Lad, who was grand Champion at the National Swine Show. I am booking orders for spring pigs, to be shipped about May 1st. Write me for prices. George E. Starr, Grass Lake, Mich.

HAMPSHIRE HOGS all sold out, would sell one herd boar and book orders for spring boar pigs. John W. Snyder, St. Johns, Michigan, R. 4.

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Percheron Stallions
25 Must Be Sold

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

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AT HALF PRICE

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

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REGISTERED PERCHERON

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

Percherons Stud colt coming two, one coming one. Price right. Duroc bred sows, Fall pigs. E. J. Aldrich, Tekonsha, Mich., Bell Phone.

Registered Percheron

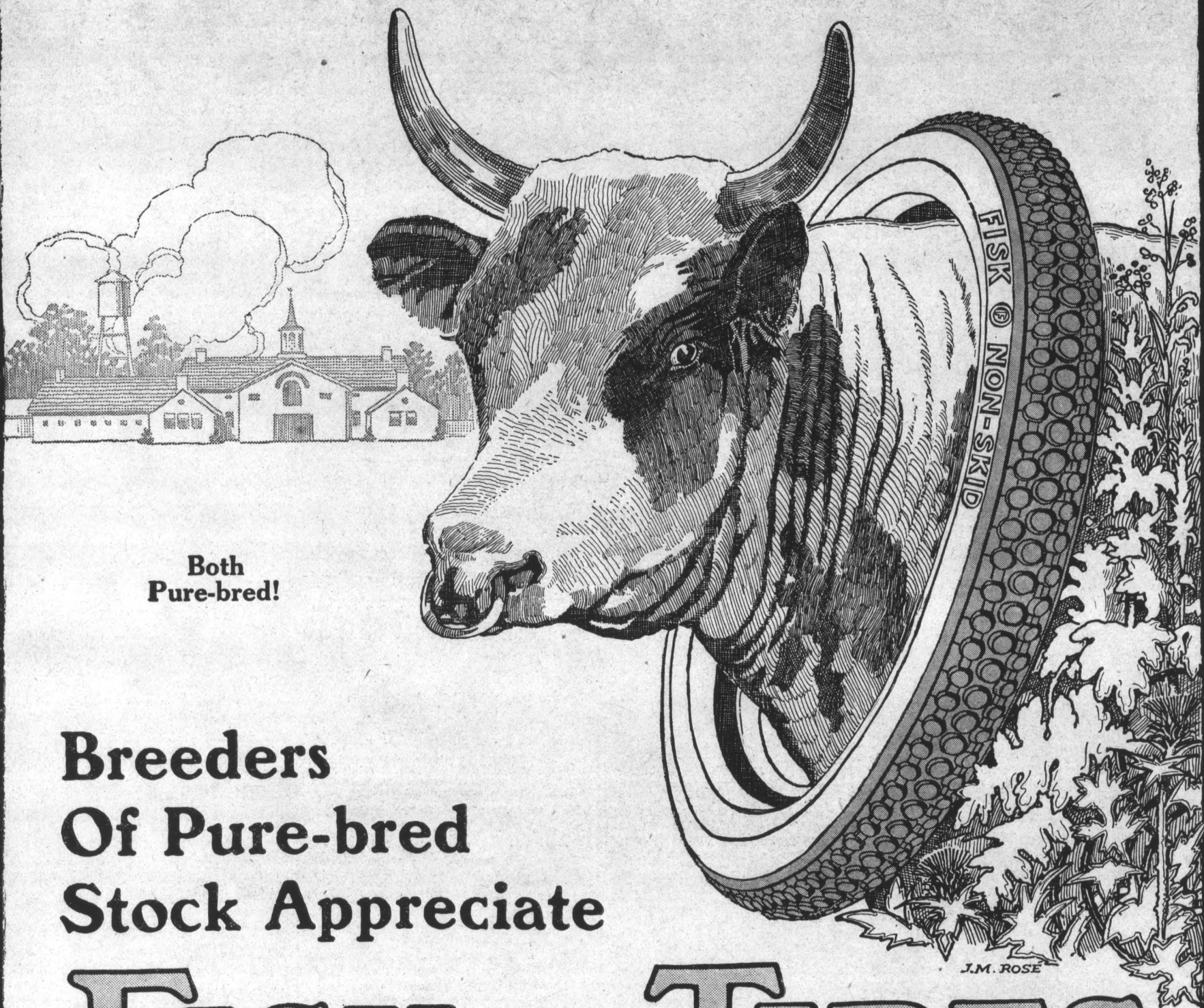
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Shropshire Ewes Mostly yearlings with lambs by side, extra good ones, come at once if you want them.

Kope Kon Farm, Kinderhook, Mich.

OXFORD DOWN SHEEP We have a few rams for sale. M. F. Ganssley, Lannon, Mich.



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