

MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL.
ESTABLISHED 1843.

VOL. CLII. No. 67
Whole Number 4031

DETROIT, MICH., SATURDAY, FEBRUARY 8, 1919

\$1.00 - A YEAR
\$3.00 FOR 5 YEARS



The Michigan Farmer

Published Weekly Established 1843 Copyright 1919

The Lawrence Publishing Co.
Editors and Proprietors

39 to 45 Congress St. West, Detroit, Michigan
TELEPHONE MAIN 4525.

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TERMS OF SUBSCRIPTION:

One Year, 52 Issues \$1.00
Two Years, 104 Issues \$1.50
Three Years, 156 Issues \$2.00
Five Years, 260 Issues \$3.00
All sent postpaid.
Canadian subscription 5c a year extra for postage.

RATES OF ADVERTISING

50 cents per line 20 x 25 type measurement, or \$7.00 per inch (14 space lines per inch) per insertion. No advt. inserted for less than \$1.50 each insertion. No objectionable advertisements inserted at any time.

Member Standard Farm Papers Association and Audit Bureau of Circulation.

Entered as Second Class Matter at the Post Office at Detroit, Michigan, Under the Act of March 3, 1879

VOLUME CLII. NUMBER SIX

DETROIT, FEBRUARY 8, 1919



CURRENT COMMENT

The Conservation Issue

THE conservation of national resources was made an important public issue by the late Colonel Roosevelt. While adequate provision has never been made for the preservation or development of our vast public resources for the public benefit, the hand of private exploitation has been stayed as a result of the campaign for conservation then inaugurated and to that extent the public interest has been conserved.

Conservation is still an issue, but the public mind has been temporarily diverted from its consideration by the great war and the many other great public problems growing out of it. The present importance of this issue is emphasized by the progress of legislation now pending in congress which may forever determine whether our remaining natural resources will be properly conserved for the public benefit or exploited wholly or mainly for private gain as in the past.

It is probable that the average man has little conception of the extent and value of the natural resources which still remain under government control. In addition to the timber resources still available in our forest reserves, it is estimated on good authority that the people of the United States own lands that contain four hundred and fifty billion tons of coal and six hundred million barrels of oil, besides two million acres of phosphate lands and more than fifty million undeveloped water horsepower. Surely this is an estate worthy of the most thoughtful public attention.

During the past four years various bills have been introduced in congress providing for the lease or sale of these lands for development by private resources, it being the contention of the advocates of these measures that the only value of these lands to the public lay in their development, and that any plan which would insure the development of these natural resources would be beneficial to the public. Leading conservationists, however, prominent among whom is Gifford Pinchot, for-

mer forester under the Roosevelt regime, have freely asserted that many of these bills, and particularly that passed by the senate January, 1918, are thoroughly bad. Mr. Pinchot has issued a statement to the effect that this measure, masquerading as a leasing bill, would surrender, with the title, all control of waste, output, price and labor conditions; that it would foster speculation in coal, oil, gas and phosphate and give no assurance of prompt development; that even the leasing provisions afford no protection to the public against extortion or monopoly; that it gives title to fraudulent oil claimants, many of whom have already had their claims denied by the courts, and that finally there is a joker which would overthrow the present lease law for coal lands in Alaska, which was a victory for conservation, and turn them over forever to private hands.

In May of last year a bill for the leasing of these same lands, which is said to be much fairer to the public interest than the senate bill, was passed by the house. These bills have been considered by a conference committee of the two houses which reached an agreement last Saturday. The details of this agreement have not been made public at this writing, except that the measure agreed upon will contain a section affecting the naval oil reserve lands. The details of this bill as well as the result of the conference committee's deliberations on measures passed by the two houses providing for the leasing of undeveloped water power rights should be watched with interest by every public spirited citizen.

The best we can do is to advise our senators and congressmen regarding our views on this matter and hold them strictly accountable for their action on these measures.

If these remaining natural resources are to be developed for profit, the major portion of the profit should be applied to the payment of our vast war debt rather than to the production of a new crop of millionaires.

The 1919 Wool Market

EVERY sheep owner is vitally interested in the wool market prospects for the 1919 clip. A fair price for this year's clip is absolutely essential to the future of our sheep industry, under present conditions of abnormally high-priced feeds. There has been an abnormal consumption of wool during recent years, due to war needs and an undoubted shortage of this raw material, particularly in this country, which fact has been brought to the attention of every purchaser of woolen clothing in a most convincing manner. This fact would seem to insure a market for the coming clip at prices which would compensate the grower for his investment in its production.

But in this connection there is an influence to be reckoned with which may have a most important bearing on the proposition. In commandeering the 1918 clip, the government very properly provided for its maximum war needs of wool, releasing only the available balance for civilian consumption. With the unexpected early termination of the war, the government found itself with large stocks of wool on hand for which it has no present use. Naturally the disposition of this accumulated surplus will have an important bearing on the future wool market.

The present intentions of the government in this regard have been called to our attention by Hon. Milo D. Campbell, Michigan member of the Federal Agricultural Advisory Commission, who states that in the Official Bulletin, under date of January 24, the War Department announces that in order to protect producers of the 1918 wool clip it proposes to sell at auction the wool now held by the government, not needed for military purposes

but that it proposes to fix a minimum that will equal the "British Civil Issue Price." As a further protection to producers of wool the department announces the intention of suspending sales of wool from July 1 to November 1, thus giving wool growers the opportunity of selling their 1919 clip without government competition.

Possibly this contemplated action of the War Department may have been conceived in good faith by the officials in charge, but upon careful analysis it would appear that it could scarcely be less well calculated to accomplish the announced object if the scheme had been devised by the Boston wool dealers and speculators. Obviously, limited peddling out of a portion of this surplus at the present time will not relieve the present scarcity or benefit this season's consumers of woolen clothing to any considerable extent. Just as obviously the dumping of a large surplus on the market next November at a previously announced free trade minimum price will not stimulate the season's market for this year's domestic clip. The natural result of this policy will be for the big users of wools and the big speculators in this raw material to discount the coming sales in the making of prior purchases. In effect this announcement, if carried out, will practically fix the price of the 1919 wool clip at the British price, and at the same time favor the continued exploitation of consumers by maintaining a present low visible supply of the raw material.

It would be far better for growers and consumers alike if the government's surplus of wool were turned into the channels of trade at once, than to permit it to be held as a club over producers, while a further opportunity for the exploitation of consumers is insured to the woolen goods trade.

Growth of Federal Farm Loans

A STATEMENT of the loans made through the Federal Farm Loan Banks from their organization to December 31, 1918, shows that loans have been closed to a total amount of \$157,020,751, these loans having been made to a total of 657,882 borrowers. In addition to this, were 29,517 applications approved for a total of \$58,456,172, on which the loans had not been finally closed.

The largest aggregate amount of loans were closed in the Spokane district, and the next largest, or \$22,555,400, in the St. Paul district, in which Michigan is located. Of this amount North Dakota led with an aggregate of over \$11,000,000; Minnesota was next with nearly \$6,000,000; Michigan was third with a total of \$3,138,700, while Wisconsin was fourth with about a million less than the aggregate for Michigan.

In the month of December the Federal Land Bank of St. Paul closed loans to an aggregate amount of \$1,550,000, thus indicating that the farmers of the country are taking an active interest in availing themselves of the advantages offered for long-time loans to be used in the improvement of their farms and the betterment of their business under the Federal Farm Loan plan. The benefits to agriculture are, however, not to be measured solely by the amount of Federal farm loans made, since these loans have undoubtedly released considerable other capital for agricultural investment throughout the country, thus equalizing to some extent the interest rate on other farm credits.

Without doubt, the growth of the Federal farm loan business will be more marked during the ensuing year than at any time since the organization of the Federal Farm Loan Banks since the system is now in effective operation and the business can be handled much more promptly and satisfactorily than at the start.

News of the Week

Wednesday, January 29.

AUSTRALIA is formulating a land policy whereby she hopes to settle ten per cent of her returned soldiers on land.—The peace conference is debating the question of the control of the former German colonies.—An uprising of the peasantry in Roumania is reported.—England plans a memorial service for the late Colonel Roosevelt.—An administration bill appropriating \$1,250,000,000 to enable the government to carry out its guarantee to the farmer of \$2.20 a bushel for the 1919 wheat crop is before the senate and house agricultural committees.—Judge Weist, of Ingham Circuit Court, enjoins the federal government from controlling telephones rates within the state of Michigan.

Thursday, January 30.

A FURTHER retreat of the American forces in northern Russia is reported.—A strike in many cities of England is on and 250,000 workers are out.—Bolivia is claiming territory from northern Chile that would give the former country a harbor.—Mexico and Cuba resume diplomatic relations.—Administration men predict for America a period of unequalled prosperity and high wages following readjustment to a peace basis.—Flour prices are to be maintained on the present basis.—The United States Senate continues its investigation of the American packers who have been charged with combining to control meat prices and the markets.

Friday, January 31.

THE War Council sitting in Paris proposes the lifting of the blockade set around southeastern Europe.—The allied governments have ordered all fighting to terminate, thus settling the Polish-Bohemian frontier difficulties.—The aggregate expense of the American government in the twenty-two months of war is \$18,000,000,000.—The Supreme Court of Michigan upholds the decision of Judge Howard Weist in the telephone rate case.—German delegates are not to be called in at the peace conference until the Allies reach an understanding on the essential issues.

Saturday, February 1.

THE British government takes the necessary steps to preserve order in cities where strikers are out.—The American plan of supervising the German colonies by the League of Nations is accepted by the peace conference.—The house navy committee approves the war ship building program which carries \$750,000,000 with a proviso that work be stopped should the Peace Conference agree on a disarmament order.—The Postal Telegraph Company through its president asks congress to vote the immediate return of the properties of the company.—All price restrictions on fuel are removed by the fuel administrator.

Sunday, February 2.

ALLIED forces in northern Russia retreat forty miles toward Archangel; gas is being used by the Bolshevik forces.—German troops open a drive on the Poles in eastern Prussia and several villages have been occupied.—Approximately 10,000 American soldiers who participated in the major battles are unaccounted for after nearly three months from the signing of the armistice.—The United States Senate and House conference committees agree on a war revenue bill providing for \$6,000,000,000 by taxation this year and \$4,000,000,000 annually thereafter.—Miss Margaret Wilson, daughter of the President, is stricken with influenza in Brussels.—It is announced that the conquered regions of Armenia, Syria, Mesopotamia, Palestine and Arabia shall be detached from the Turkish empire.—The United States Labor Department reports 33,000 men in the city of Detroit who are out of work.

Monday, February 3.

FIVE great powers have submitted their claims to the Peace Conference: France, among other things, demands the right to fix buffer states along the Rhine, and indemnities amounting to \$13,200,000,000; Great Britain asks mandatory power over German southwest Africa and over German islands south of the equator in the Pacific; Italy requests for south Tyrol, Fiume and Trieste; Japan is willing to deed Tsing-Tau back to China; Switzerland asks that the Rhine be made a neutral route to the sea.—American government orders the return of all the Dutch ships requisitioned from Holland during the war.—Barley, corn, rye flour and meal made from these grains, oats and oat products, bran, middlings, beans, dried and split peas and sugar have been removed from the export conservation list by the government.

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TO
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QUALITY
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Agricultural Conditions in Europe

LAST August the secretary of agriculture, with the consent of the President, appointed an agricultural commission to go to England, France and Italy and study the agricultural conditions of those countries with a view to determine: 1. What those countries were actually doing in the way of agricultural production, with the aim of linking up their program with ours, and 2, to learn the actual status of agricultural resources and devastation with the object of mapping out a program for agriculture during the reconstruction period in this country so that production might be adequate and well balanced rather than top-heavy or over-balanced.

The commission appointed was composed of a number of the strongest agricultural men in the country from one ocean to the other. It was thirteen days crossing the ocean (on account of submarine menace). When it arrived in England, the ministry of agriculture provided it with guides, automobiles and an itinerary. Seventeen days were spent studying the rural conditions in England and while there Professor Rommel attended a cattle sale in Scotland. In France, similar governmental courtesies were extended. The members visited the famous home of the Percherons, the grape districts of France, and other typical agricultural communities. Moreover, they visited the English, French and American battle fronts to determine the extent to which the boche had damaged France's agricultural prospects as well as finding out at first hand the destruction wrought in the fertile valleys of the Marne, Somme and Vesle rivers. One member also visited Italy.

Dr. W. O. Thompson, president of Ohio State University, was chairman of this commission. What is in this introduction and what is to follow, he told before a large gathering in Indiana. A part of the lecture was illustrated by slides taken from pictures secured on the trip. I have read much about the agricultural conditions in the old country, a large part of it hearsay and "think." Dr. Thompson speaks authoritatively, statistically and interesting. He portrayed the conditions so vividly that I believe it will interest Michigan Farmer readers very much since the state has great

As Told by Dr. W. O. Thompson, President Ohio State University and Head of the American Commission to Study Agricultural Conditions Abroad.

interest in beet sugar production, sheep husbandry and dairying, not to mention other agricultural pursuits which must be profoundly affected by the conditions now existing in the old world. I shall not try to quote Dr. Thompson specifically but all said herein should be understood as being taken directly from his speech. I have put in nothing except this paragraph.

Labor Conditions as they Existed.

In England, the three main sources of labor supply during the war listed in the order of their importance were: 1. The Woman's Land Army. 2. The boche prisoners. 3. The returning soldiers. By far the greatest part of the labor was furnished by the Woman's Land Army which was a volunteer organization of women and girls recruited for the express purpose of helping on the farms with a view to increasing the food production of the British Isles. They did all kinds of work in which men engage, such as dairying, fruit production, truck growing, harvesting and even wood cutting and hauling manure. Next in importance were the prisoners which had been sent to prison camps in England. In general, this source furnished good and willing workers. One large farmer in England hired fifty of these men and found them quite satisfactory. Out of the thousands in England, not more than a hundred tried to get away. The returning and wounded soldiers helped considerably in England's production program but the distance from the front, and limited boat accommodations across the Channel made this of less importance. At one time last spring, seventy thousand men were taken from Britain's mines and these places were in a measure, taken by women.

In France the conditions were some different. France is the one country which really "went to war." Seven and a half million men were mobilized—one out of every five of the population—and these seven and a half million places vacated were promptly filled by the women. The proximity

to the battle fronts, however, made it possible to use furloughed and disabled soldiers on the farms to great advantage. Last July, one and a half million people left Paris and in all the time the commission was in France, not one man of military age (between eighteen and fifty) was seen that was not in uniform.

The Countries Need Five F's.

From the observation of the commission, what these countries need the most now may be summed up in five F's, namely: Food, feeds, fertilizers, fiber, and farm machinery.

The foods that the countries need are mainly wheat, meat and sugar. A total of about fifteen per cent of France's territory was invaded and it happens that this invaded portion embraced the largest portion of what had previously been the best producing territory. Not only was the land put out of use for production, but the beet sugar factories were systematically destroyed, demolished and carried away. The sugar supply was cut from sixty to twenty-five relatively speaking. In other words, where before they had sixty pounds, now they had but twenty-five. Candies and confectionery of all kinds practically disappeared and the small chance to import sugar made strict rationing necessary.

In the first year of the war, France lost forty per cent of her sheep. They were driven off by the boche or killed and this not only greatly reduced the meat supply but it also materially cut down the supply of wool. One-seventh of her cattle have been killed or destroyed and "while we were in Paris milk could not be had at cafes or eating houses." All the milk was reserved for invalids and infants and given out only when absolutely necessary. These great reductions in the sheep and cattle population of France puts her in imperative need of meat.

As to wheat, the situation was some different since the French people are much heavier bread eaters than the Americans. When an American eats three pounds of bread, the Frenchman

eats five. When the prices rose so rapidly at the beginning of the war, the French government saw that it would prove a serious calamity if bread rose in proportion to the other commodities. It therefore arranged with the millers to sell flour at pre-war prices and the extra cost of the wheat was reimbursed to the millers by the government direct. In this way, bread prices showed no advance and the government paid to the miller about thirty-seven per cent of the cost of each loaf of bread.

As a wheat exportation factor, Russia is undoubtedly not important, due to the civil incoherence and the Bolshevik movement. It may also be remembered that Russia lost about seven millions of men in the war which must make serious inroads on production. Hence all of the countries need wheat, meat and sugar.

Feeds, especially concentrated, have been and still are very scarce in the allied countries. It should be remembered that corn is grown but very little in England and Europe. The climatic conditions do not favor corn culture and perhaps this will be plainer when it is mentioned that Liverpool is seven hundred and fifty to eight hundred miles north of our corn belt and much of France is also north of the corn-growing latitudes. The great bulk of the concentrates, such as linseed and oil meal, came from America and so when soldiers and munitions took up all the eastbound space of the boats, no concentrated feeds could be had except a very limited supply that was produced at home.

Fertilizers or foods for the soil are also greatly needed. Under normal conditions, France imported most of her fertilizers from America and Germany. When both these sources of supply were cut off, her production fell off. This was also the case in England but the effect was not quite so great.

"Fiber is a factor that will be a long time catching up with its normal program," is a very cogent statement of Dr. Thompson's. When France's sheep were driven off, the wool supply was greatly reduced and it was impossible to rebuild, and if done, at very great expense. There had been but few farm machines imported since hostilities started in 1914. (Con. on page 232).



The First Great Problem of the Nations of Europe is the Reconstruction of their Agriculture.



Shall Land Owners Pay all Taxes?

SINGLE tax is levied upon the value of land exclusive of all improvements. How would this affect the farmer? Some of the opponents of the method will tell the farmer that the single tax is a tax on land, and that he should be opposed to it for that reason. The purpose of these parties is to enlist the opposition of the farmer to a change of any kind from our present stupid tax system, which enables opponents of the single tax to pocket large amounts of public value.

The single tax wherever adopted, has been found to be the lightest tax the farmer can pay and secure the greatest amount of public welfare in return. This is due to the fact that most farm land has little value compared with municipal, village and town property. In the city of Detroit you may find single building lots, the price for which is two or three times as great as for the largest farm in the state. In the central section of the city, on the main business street, a pinched-up lot (just the land) would represent the land value of several hundred acres of land.

This is because very little of the farm values of the state are land values; they are labor values. An ordinary farm worth \$10,000 has about \$500 worth of land value. Deduct the labor values represented by the house, barn, outbuildings, fences, drains, orchards, crops and conditions of culture, not more than \$500 would remain that could be said to be real land value.

Let us take New York state as a typical illustration. If we were to assess five per cent on the land values of New York state, the sum total raised from all the agricultural lands would not exceed \$25,000,000, while the land values of New York city alone, at this same rate, would raise over \$300,000,000. Then there are all the other cities, towns and villages of the state yet to be assessed. It is little wonder that the land speculators are opposed to the single tax. They desire to continue a system of taxation that exempts the land values of cities and loads down with taxes the labor values of the country districts.

Under the existing tax methods the farmers are overtaxed. In New York state the entire value of all the farms, exclusive of improvements, does not amount to \$400,000,000, while in New York city the assessed value of lots, excluding docks and the valuable land franchises, amounts to \$5,000,000,000.

Taxation is payment for social service. A citizen should pay for what he gets from society. It is clear that the value of that service is not what a man does for himself. If a farmer builds a new barn, is that a service rendered by society? If not, what moral right has the township, county or state to send an increased tax bill, having rendered no service for the farmer? The building of the barn was a service rendered to the farmer by himself. He gets nothing more from the county or state than before he built it, and any tax collected thereon is plain stealing by due process of law.

We all recognize under the present system that a man must pay a penalty for improving his property and making the community more attractive, pleasant and desirable to live in. This fact was forcefully brought to my attention right in my own community. A man was caught stealing chickens, taken before the court and fined \$10.

Earl W. Gage, Secretary and Treasurer of a National Farm Loan Association Tells How the Single or Site Tax Would Benefit the Farmer.

He was an undesirable citizen, unsafe to be at large. My neighbor erected a new poultry house, in which he is keeping 500 laying hens. These hens will add eggs and meat to the nation's menu at a time when there is a need for both. The assessors came along, and seeing the new poultry house, jumped my neighbor's assessment so that he paid \$10 more tax this year than previous to building the poultry house. He was fined for being a good patriotic food producer.

The first man is undesirable; the second is desirable. Nevertheless, both were fined \$10, the difference being that the first man paid his fine to the court, which in turn handed the money to the county treasurer; the second paid his money to the tax collector, who turned his funds over to the county treasurer. One man's money was to be used in furthering the strong arm of the law in protecting the community; the other man's fine was to be an object lesson against improving the community. This characterization applies to all taxes levied upon labor values. If we were to assess a tax of five per cent on the land values of New York, Michigan or Ohio we would raise enough money to cut down immensely the amounts unjustly collected from the rural districts in general.

An ordinary farm of one hundred acres, worth \$10,000, with improvements, we would assess \$500 in land value. If money was worth five per cent in the open market, supposing the single tax system to be applied in its fullness, that farmer would pay \$25 per year in full payment for all services rendered him by society. This is a small amount, and it should be a small amount, for the services society renders the farmer are very few. Water? Yes, the wheezy pump in the well the farmer dug himself, or from the drilled well he paid for with his own money. Sewer? Slops fed to the hogs or turned out the back door. Light? John D's energy bought by the gallon at a good price, or the modern lighting outfit, purchased and installed with his own money. Roads? Mainly made by the farmer himself. Schools? Not to compare with those of the city. The true measure of the value of social service, is the value of the land, exclusive of improvements, a man possesses. All social service, such as water, sewers, light, police and fire protection, sidewalks and street paving, cleaning, etc. are reflected in the value of the land, but not in the value of the

buildings or in any of the improvements of the premises.

The man living in the principal residential section of Detroit, on a small lot where the land may be worth \$10,000, gets more from society than the farmer in the center of the state, whose farm consists of labor values amounting to \$9,500 and land values of \$500. The Detroit man is within a few minutes ride of several railroad depots, stores, churches, theaters. He is close to natural history and art, museums, libraries, schools, colleges, etc. The best stores in the world are within delivery distance. He receives from society the maximum advantage and the sum total of all these things is registered in the enormous land values of the city.

The farmer complains—and not without great and just reason—that he is over-taxed. His attempt to throw off this unjust burden is not unlike the blind mule in the swamp—the more he struggles the deeper he sinks into the mire. The reason may be laid to the farmer's lack of economic knowledge, for he did not know that to tax labor values is to increase the cost of living and to restrict production. When we tax stocks of goods we but increase the price of the goods to the people who use them. When we tax mortgages, we either raise the rate of interest, or make it harder to raise money on mortgage. When we tax money in the bank, it is with the same result. These facts the war has brought home to us as nothing else. Every time Mr. McAdoo has issued an order raising the wages of the railway, express, telegraph employes, he has raised the rates we have to pay for this service. The people—not the government controlled agencies—pay the increased wages. They pay more for the same old service.

You cannot tax the wealthy person by taxing wealth. Again, we should not tax men, or attempt to do so, simply because they are wealthy. We should tax or charge men for the full value of what they receive from society. A man should pay for what he gets, not for what he has.

The disastrous effects of the present tax system cannot be overestimated. We raise the cost of living by taxing labor products, and failing to tax land values. The high rents of our cities has a ruinous effect upon the city dweller's ability to purchase farm products in the quantities he would like to, or the total annual volume he really needs to be well fed. Milk con-

sumption alone shows this. If the price of milk is raised two cents per quart there is an immediate reduction of a given city's consumption; if rent jumps up two dollars per month we do not note people moving away.

We shall succeed in placing the tax burden where it belongs and where it can most easily be borne only when we take social value for social use. Our present stupid tax method punishes the good and rewards the evil. It fines those who use their opportunities and gives a premium to those who do not. We have made it more profitable to be an idler and a grafter than to be a producer and a worker.

A man named Wendell recently died. He was noted for just one thing—he never did anything useful. He was a large owner of land, but he never spent a dollar for a pound of nails, a foot of lumber, brick or mortar—never rendered any service or produced a dollar's worth of wealth. Yet he died worth \$80,000,000. After such a life of idleness, you will ask, "How such remarkable results? What was the mystic power that secured for an idler \$80,000,000?" It was our thieving tax system that gave public-made property or value to this man. Then to add to the sum of its folly, the city, after giving away its true and honest revenue, must commit grand larceny by taking large sums of private property to replace the revenue which it should rightfully have claimed and taken.

Our present tax system is a fraud and a humbug. Our tax rolls are but a collection of guesses flavored with favoritism and fraud. Our whole method of raising public revenue is but grand and petit larceny, legalized, from beginning to end. We rob the producing citizen of his private property for public use, and rob society of its public property by giving land value to private citizens.

If a farmer paints his house, or improves it, we fine him. If he plants an orchard, builds a new barn, erects a useful fence, cleans up his farm and makes it by labor more productive, we punish him. We have made it more profitable to hold land than to make it productive. For that reason in all our towns, cities and villages we may see vast stretches of idle land and few and scattered useful land. On many of our principal streets we may see a small percentage of our buildings in modern attractiveness, and where up-to-date, the rents so excessive that the few and not the many may reside or do business there. We should raise public revenue from the area benefited by social utilities and not from private production. If we follow this principle it would relieve the farmers of a great burden they now carry, and make the men pay who are in reality best able to pay, because they get the most from society.

Who oppose the single tax, aside from those who are ignorant of its principles? The opponents of the single tax consist of the easy-money fraternity, polite grafters, the men who desire to enjoy the fruits of labor without the annoyance of toiling.

The single tax will relieve labor and capital from an enormous and unjust burden. It will lower the cost of living, increase the earnings of labor and real capital. It will force into use land now held out of use for speculation, and thereby increase the opportunities for labor and capital. It will

(Continued on page 204).



Putting New Life In Sandy Soil

Building Up a Few Acres of Unproductive Sandy Land is the First Step Toward Increasing the Average Crop Yields on Thousands of Michigan Farms. By Lester J. Meredith.



A PERPLEXING problem confronting many land-owners in Michigan is that of growing profitable crops on sandy land. In many localities, where the sand is not underlaid with a heavy subsoil, the cost of adding sufficient vegetable matter and the leaching of plant food renders the proposition of building up this type of land too hazardous for the average farmer to take up on a large scale. On the other hand, however, there are thousands of farmers who have considerable areas of sandy land that is in need of some kind of restorative treatment before it can be made to produce profitable yields of crops. A little special attention to fields where this type of soil predominates may be made to pay handsome returns. The work of adding vegetable matter and mineral fertility to these soils can be carried on at such a moderate cost, and so distributed over a series of years, that it will prove profitable and be the means of increasing the average yield of the several rotation crops.

A few acres of unproductive sandy land, like a similar area of wet and marshy land, may so reduce the average yield of crops on a large field as to make the entire field a liability rather than an asset. The main idea in profitable crop growing is to eliminate all profit-sinkers, and there is no better way to accomplish this than to begin with the few acres that are unproductive and get them in shape to contribute their share toward maintaining a high average for the entire farm. Loafing acres must be put to work before the farmer can maintain a high average production of crops on his farm; and it is averages that count in these days, rather than some exceptional yields on portions of the farm.

The Life of the Soil.

The first point to demand attention in building up sandy land is that of continually adding to the supply of vegetable matter at the surface of the ground to make new soil which acts as a mulch during the hot weather and prevents the supply of moisture and plant food from being lost in the drainage water. A large supply of vegetable matter can be secured by using no fire in clearing the land and burying all of the natural growth with the plow. Afterwards the supply must come from growing grasses and legume crops, either for feeding the live stock or for green manuring purposes. Common red clover and other legumes furnish the most vegetable matter and plant food, and are better suited for the use of the land whether fed out on the farm and made into manure or plowed under. The more concentrated forms of manures and fertilizers are better adapted to land of finer texture. Growing grasses and forage crops,

either for feeding or for green manuring means a constant increase in soil residues and a consequent improvement in the physical and chemical conditions of the soil. The real necessity for a wider growth and more general use of forage crops is shown by the present tendency of depleting the fertility of such soils until they are not in condition to produce paying crops of anything.

From a careful study of the way plants grow and secure their supply of food from the soil and atmosphere we find that they get the bulk of their food from near the surface, therefore, it is important to keep an abundant supply of vegetable matter near the surface, rather than buried beneath a thick layer of lower bottom sand. The principle is thoroughly understood and acted upon by southern farmers who object to deep plowing. The subsoil below should be stirred, though it should not be brought to the surface. Plant roots in search of moisture will go down deep into the ground, and decaying will in time help form a soil of the proper depth. As soon as a deeper soil has been established, the depth of the furrow may be gradually increased. This result may be hastened by the free use of ashes and lime which makes the soil more retentive of moisture and encourages growth of plants which add to the supply of vegetable matter and plant food.

Until a good depth of rich soil has been formed, the surface only should be turned over, and the sub-soiler so adjusted that the bottom of the furrow will be broken up without burying the decayed vegetable matter too deep and yet enable the plant roots to go down deep enough so they can obtain plenty of moisture.

Sandy Land Produces Quality Crops.
Wherever there is sufficient vegeta-

ble matter in the ground to grow the plants, no land produces grain, root crops or vegetables of so fine quality as sandy lands. The wheat grows heavy in the grain and the straw seldom lodges. Corn matures quickly and is always ripe and sound. Early vegetables, root crops and squashes grow better on sandy land and produce more perfect specimens than elsewhere. Potatoes yield much larger crops, ripen early and are smoother and more nutritious than those grown on heavy soils. To these lands our large cities and villages must look for their supply of early home-grown vegetable, truck and fruit crops.

Whatever crops may be grown on sandy lands, those are preferable which yield a large amount of leaves, stubble and straw and other vegetable matter to be left where they grow, or returned to the ground in the form of manure. Clover and other members of the legume family stand foremost of all crops for this type of land, followed by grasses, corn and small grains. These crops need no special notice, as all will grow them who grow any crops successfully on sandy land. But a few special crops that have a high money value may be profitably grown on the farm that includes a few acres of sandy land, especially if it is situated in proximity to a village or city.

The Live Stock—Legume Formula.

The cheapest and most effective way to build up sandy land is to grow forage crops and utilize them for pasturing sheep and hogs. In this way the land can be made to pay something and gradually gain in fertility until it is in shape to yield profitable crops of grain, vegetables and fruit. By adopting a system of growing early forage crops such as rye, alfalfa, clover, field

peas or rape and such like, and having a few acres of soy beans, field peas and rape for feeding later in the summer and fall one can grow lambs and pigs very cheaply and finish them for market with a minimum of grain feed. The residue from the forage crops after being grazed moderately and the droppings from the stock will build up the soil very rapidly, especially if the land is well limed and a large portion of the crops plowed under before they are grazed too closely.

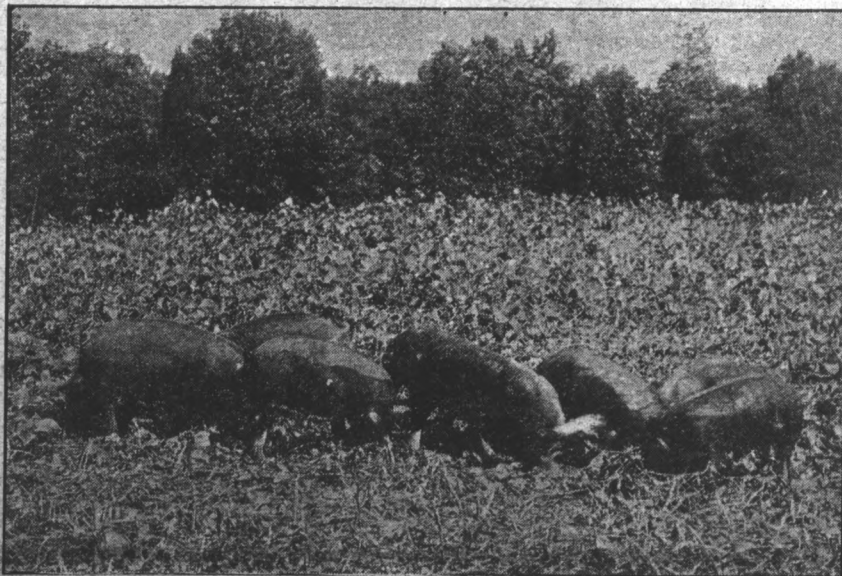
A moderate sum of money will buy sufficient woven wire fencing to inclose these sandy areas and provide for the necessary cross-fences so that they may be utilized for pasturage. Then you can improve the soil and grow lambs and pigs to beat the band. With a few acres of forage and the same acreage of corn, by alternating the forage and corn ground you will be able to make some money and conduct your feeding without going out and buying large quantities of grain feeds. The way lambs and pigs will fatten on these crops, while doing their own harvesting, will surprise one who has never tried such a system of mutton and pork growing, and the way the corn will grow after the land has been used for feeding the lambs and pigs in this manner will also surprise you. If you cut and harvest a portion of the alfalfa, oats and peas and other crops, and raise a supply of root crops, it will go a long way toward feeding the ewes and sows in the winter. Then too, you can sow rye and vetch in the corn field to help out the stock during the late fall and spring when the weather is fit for them to be out.

Follow up this system for a few years and you can grow anything on your sandy land and change your pigs and sheep to other parts of your farm that need building up. If you can grow these green manuring or forage crops for grazing without too great an expenditure for fertilizers it will surely pay to bring your sandy land under a system of crop growing such as is outlined above as quickly as possible.

It is not the purpose of the writer to convey the impression that any novice can take run-down sandy land and make it pay big profits at the outset, but rather to show how it is possible to make a few unproductive acres yield crops without investing too heavily in purchased manures and fertilizers. As soon as the land is brought to a condition to grow large crops of forage and corn, provided the vegetable matter is maintained by the growing of legume crops and the use of lime and mineral fertilizers, it may be safely used for growing farm crops.

Some Crops that Pay.

In many localities potatoes are the
(Continued on page 228).



Legume—Live Stock Formula—An Elixir of Life for Sandy Soil.

A Cooperative Farm Tenancy

(Article Three)

Choosing a Suitable Tenant

By C. B. Ford

HUMAN nature is the unknown quantity in choosing a farm tenant. It is this evasive quantity which cannot be figured out with accuracy that makes it difficult to establish principles that will work out successfully with different tenants. Every land-owner who is developing a system of tenant farming is backing his farm, money and judgment against this unknown and evasive quantity. He has to do it or look after the management of his farm himself; and if his judgment fails he has to do both. This means that the most important factor in developing a profitable system of farm tenantry is the ability to select men who are qualified to become valuable tenants. There are thousands of land-owners who might truthfully subscribe to the confession that their farms are not paying because they do not know how to select good tenants. Others have this ability highly developed. It is the key to success in these days when so many land-owners are finding it difficult to hire competent help.

As good farming is the basis of successful farm tenantry, let the tenant's ability as a farmer be first considered. Not long ago a wealthy land-owner in one of the most prosperous sections of Indiana retired from his farm because he had made a comfortable fortune and wished to be free to enjoy it. He owned four hundred and sixty acres of land and made a clean-up by selling his herd of registered cattle. He had started on a farm with a moderate capital, and through shrewd management had paid off every indebtedness and won considerable fame as a breeder. Four years ago he hired a young man for two years with the agreement that if mutually satisfactory at the end of that time he would lease him the farm on a partnership basis for ten years. In discussing the terms of the two-year agreement and the ten-year lease he said: "I hired James so that he might grow into the work and be fully prepared to go ahead with the farm along the same lines that have proved successful for me. To my mind about the poorest policy that any land-owner can pursue is to rent his farm to some man who is not familiar with the fields and system of crop growing in vogue. That was why I hired James and got him started in my own way. One may be able to teach the professional tenant new tricks, but one will seldom be able to unteach him the faults acquired during years of careless and indifferent farming. Besides there are many other reasons why adopted tenants are not equal to those who have been with you several years and become familiar with your ideas and methods. When you get a tenant from some other farm you are, generally speaking, able to do so from one of two causes—because you are willing to give him a larger share of the proceeds in order to get him away from the other farm, or because he has proved a failure. In either case the result is likely to prove unsatisfactory.

"Then, too, there is the question of confidence; loyalty and enthusiasm. My idea is that the man who has the making of a good tenant generally holds that man's confidence and loyalty so long as he stays on the farm. He is perfectly at home in his surroundings and his heart is in his work when he knows that it pays. Besides, it is many times necessary for the land-owner to finance the acquisition of live stock, this tends to develop a system of tenantry that embraces a long tenure of land holding with live stock as the

foundation of its original scheme. Land-owners derive from such a system much advantage in increasing values in land, so naturally they should be the men to aid tenants to acquire live stock that are suited to their land and environment."

"In discussing the problem with a banker-farmer in Michigan he said: 'Several times I have been tempted to offer extra inducements to secure tenants who had made good on other farms. My first experience was with a man whom I had to back up with money, stock and tools. He was so very plausible and ambitious that I loosened my purse strings and gave him the chance of his lifetime. I thought that I had found an ideal tenant—but the fellow had not been on my farm two months before he began knocking my business instead of minding his own, and I had to buy him off before he did any more damage. That experience helped mightily to convince me that something is wrong with the tenant who begins to show an unwillingness to deal openly and above-board.

"After several disheartening experiences with tenants I arrived at the positive conclusion that the way to keep my tenants loyal and satisfied was to take on young men rather than men who had proven failures elsewhere. The relationship between the land-owner and his tenants is not so hard and heartless as it often seems from mere surface indications. When I lease my farms to some young fellows I feel that they are getting a chance at a bigger future than if they remained hired men. I always make it a point to keep close watch of a few of the best farm hands in my community, visit with them occasionally and learn something of their disposition and home life. When I know what kind of a wife and family a prospective tenant has and have studied his home life I can form a pretty accurate estimate of the sort of backing he will have in his efforts to make the farm pay. The wife of the farm tenant can make or break him, provided his other points of equipment are good. My little visits with prospective tenants and the study of their home life have been worth many times the trouble they have cost. I have passed up more than one good man because I had met his wife and concluded that she was not of the kind to give him the sort of support that a man on a farm must have to succeed. On the other hand, two of my tenants—who are not quite so competent—are making good because they have wives who help to keep the business moving.

"At the outset of my experience in dealing with tenants I found that the fellow who is constantly moving from one farm to another brought more trouble and loss than the professional tenant with a long experience in leasing farms. I consider the floater a menace that must be eliminated before we can build up a profitable system of farm tenantry in Michigan."

"There are three things," said a successful Michigan land-owner, "that I am willing to furnish my tenants: A silo, manure spreader and a fanning-mill. It is clearly to my interest to

have them feed good live stock, return the manure to the fields and sow grain that is free from noxious weed seeds. If they will do these three things and do them efficiently we usually get along right well. If they do not take enough interest in my property to do these things we close our business relations at the end of the first year. To encourage the improvement of live stock I furnish pure-bred sires for my farms, and this has proved the very best investment I have ever made.

"Another practice that I believe in is that of training my tenants to the duties and responsibilities of citizenship. My form of lease compels my tenants to participate in the activities of the state, county and district in which they live; they pay the various taxes. This saddles on them the duties of citizenship which engender a patriotic interest in the community. It broadens their interests, begets a concern in the social and political welfare of the district, county and state, and gives to farm tenancy adignity and intelligence which it sorely needs in this country. My tenants have a personal pride in the district school, the roads and in their farms. They are full-fledged citizens, exercising the functions appertaining to that role. Tenants under the usual forms of farm leases have little if any interest in the common weal of their communities. To sap the land and get away with the fat is their paramount object. What is best for the tenants is best for the land-owners."

Another Michigan land-owner who owns several farms and who has had a wide experience dealing with tenants makes it a point to investigate the intelligence, the character, the experience and the general ability of the prospective tenant. In a recent interview regarding his success in farm management on a tenant basis he said: "My first aim is to find a man who has sufficient sagacity to look out for his own interests. So many men who are looking for farms to rent are willing to enter into any sort of an agreement that I prefer the man who will drive the best bargain possible. Second, I want a man who knows how to do things and who can size up a job at a glance and be ready to meet it when it comes to him. Third, I want a man of good habits, good appearance and with a good family. One who has reasoning faculties and who can come in to my office and discuss farming problems of the day in an intelligent manner. Fourth, I want a man who has the ability of growing good crops and handling good live stock. One who has sufficient strength to go ahead with the everyday work on a farm and keep the business moving along smoothly during the year. Of course, I have made mistakes in my estimates of men, but as a general proposition my tenants are loyal and satisfied. Three years ago one of my tenants left and I took a chance with rather an unpromising fellow. He was a husky young chap, so lacking in the ideas of successful farming that some of my friends had considerable fun at my expense. There were two things about this fellow that impressed me. He was honest and willing to follow

my advice and he had a physical equipment that could stand any strain. By spending considerable time on the farm myself and getting things started he made a very good tenant, but I never saw him without thinking of what he might accomplish with a sound mental equipment to go with his physical driving power.

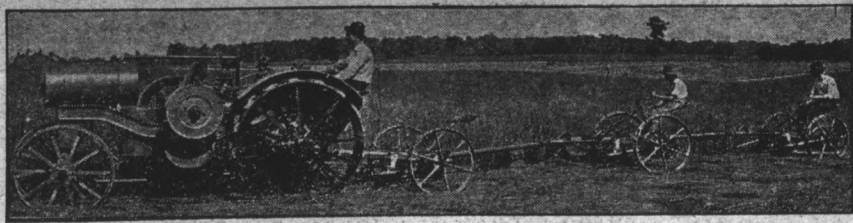
"One of the things which have been drilled into me by experience is that too much importance may be laid on the nature and extent of a man's experience. Some of the best men I have on my farms have come to me with little previous experience other than working on farms. One has to deal rather cautiously with such men the first year or two, but once they get started and become familiar with the new order of things they become more loyal and contented than older men who have become accustomed to moving from farm to farm looking for a better chance. By helping the young man get started one gains their confidence and I find that is about one-half of the game in dealing with my tenants.

"During the past ten years I have had a varied experience in dealing with tenants on six farms. We have been trying to work out an efficient system of tenant-farming with breeding of pure-bred Holstein cattle as the main product. I use my home farm as sort of a breeding ground for my best cattle. In this way I always have a few good pure-bred sires and a few good individuals to place among my tenants. I can also buy and test a number of promising young animals each year that my tenants do not have time or inclination to test. I have experimented with all kinds of tenants, both amateur and professional, but I always aim to get hold of capable young men who are willing to listen to my advice. Several of my former tenants now own farms of their own. One young man came to work for me nine years ago. He was a likable young fellow and one of the best dairy-men I ever had in my employ. I put him on one of my farms, and loaned him the money to buy one-half of the stock and the necessary equipment. Last year, at the expiration of his six-year lease, he bought a farm of his own and paid \$7,000 down. He has a herd of twenty-six pure-bred Holstein cattle and a full stock of horses and equipment. He will pay out in five years; in fact, he could today if he disposed of his stock and crops. During all of the years we did business together not an unpleasant word passed between us, and many a pleasant Sunday afternoon we have spent visiting and going over the farm and inspecting the crops and stock. I would back that young man to the limit if he needed financial help today. I like to take that kind of risks."

The reason why so many land-owners have trouble in dealing with their tenants is simply that they are asleep to the real importance of their end of the business. They figure out what their farms ought to pay under a system of good farming; and when it comes to choosing tenants they show an ignorance of the real importance of the problem. It is a safe bet that any land-owner who really wakes up to the vital relation between good farm tenants and the net profits from his farms will get improved results from a more sensible and definite method of choosing and dealing with tenants. The success of any system

of tenant farming is measured by the efficiency of the tenant and willingness of the land-owner to co-operate.





The Tractor a Success in Michigan

By G. W. McCuen

THE tractor is not the failure we hear some pessimistic men say it is or there would not be so many repeated orders from the older users. Men who have made a study of tractor farming and have planned their work so there will be as little loss of time as possible, are the real boosters. They have made it a business proposition. If we should study the failures it would no doubt be found that they were among men who were not the leading farmers in their community or perhaps they considered the initial cost when purchasing a tractor and bought a cheap machine put out by a company that did its experimenting at the expense of the farmer. Such companies will be out of business in a short time, for good business gives one hundred cents value for a dollar.

A view of the automobile industry ten years ago will bring to our minds that the automobile was not a great success in the hands of the novice. A great many of the leading automobile firms weathered a hard storm, and having standardized their products have today goods that are above reproach. The tractor is now largely in the hands of the novice and it will be but a short time until the most skeptical will say, "I don't see how I got along without it." Do you recall of ever hearing men making a similar remark about automobiles in general? Today these same men would not part with their cars if they could not go right to a dealer and buy others.

More Small Thrashers, Shredders, Silage Cutters.

The large sale of small tractors has given a wonderful impetus to the sale of small threshing machines, huskers, silo fillers, etc., throughout the state. It has caused alarm among commercial threshermen as it cut down their number of customers this year to some extent and will continue to do so each following year. A great many bushels of grain were saved this year by timely threshing with the small rigs. Cooperation between two or more farmers in buying and operating a small rig has been quite noticeable throughout the state. With the small machine they were able to thresh from the shock and thus time and labor were saved by one handling of the grain. The tractor was used to the greatest extent as a source of belt power to drive the silage cutter. This outfit did not require such a great investment and is a popular combination. With it the owner was able to cut his corn for silage at the time it would give the greatest feeding value. He was also able to do considerable work for his close neighbors, and in many instances was able to earn enough to pay for his cutter and some on his tractor. The commercial proposition should not be looked upon as a means of making the tractor pay for itself, however.

The tractor of today does not resemble the tractor of yesterday—it is an entirely different design. The tractor of yesterday was the large, cumbersome machine using a heavy, slow-running motor, coarse pitch, rough-cast exposed gearing. The tractor of today is a refined product—the same

as our automobiles. It is light and easy to handle. The best and most expensive machines have cut hardened gears, completely enclosed and running in oil. In some of the latest machines the only moving parts that are visible when the motor is in operation are the fan and the belt pulley. Such enclosing adds greatly to the longevity of the tractor.

Tractors Being Standardized.

Tractor construction is fast becoming standardized. Accessories manufactured for tractors are also standardized. Two of the outstanding features of standardization that manufacturers are trying to incorporate are (1) a standard height of drawbar, which is seventeen inches; (2) a standard belt speed of 2,600 feet per minute at the rated R. P. M. of the motor. These two features seem to be points of design that should be considered above all others. With a standard height drawbar the plow manufacturer can design his plow so that it can be easily hitched behind any tractor and properly adjusted. For belt work the standard belt speed will make it possible for the manufacturers of power-driven machinery to furnish the proper-sized pulley with their machine and know that it will be driven at its correct speed. The present system is to furnish different pulleys for different belt speeds. Such standardizations are being incorporated by the most progressive tractor companies.

Air cleaners are attracting considerable attention by the up-to-date companies. The tractor, especially when disking and harrowing, works in a cloud of dust and if this grit is not taken out of the air before it enters the carburetor, the motor will soon be cut out. The three leading types of air cleaners used are: (1) The cloth cleaner; (2) the centrifugal cleaner, which takes out dust and dirt by centrifugal force, and (3) the air washer, where the air is required to pass through a body of water which positively removes all dirt and grit.

Improved Ignition and Combustion.

The question of using the lower grades of fuel, such as kerosene, has brought out many devices which aid in the proper burning of these fuels. Pre-heating the air before it enters the carburetor, heating the mixture to insure complete vaporization, heating the fuel and heating the mixture in the carburetor are some of the methods used quite satisfactorily. A motor to burn kerosene efficiently should be kept as near as possible to 180 degrees Fahrenheit. The thermo syphon is one of the latest designed devices which automatically controls the temperature of the water irrespective of the load pulled. It will maintain the same temperature in the motor whether pulling one-fourth load or full load. Electrical equipment, such as starting and lighting devices, is of value to the farmer who can arrange his work to be able to use his tractor to its greatest capacity. He can plow or do other work after dark as well as in daylight. The self-starter saves one's disposition, as it will crank the motor a considerable length of time before it will

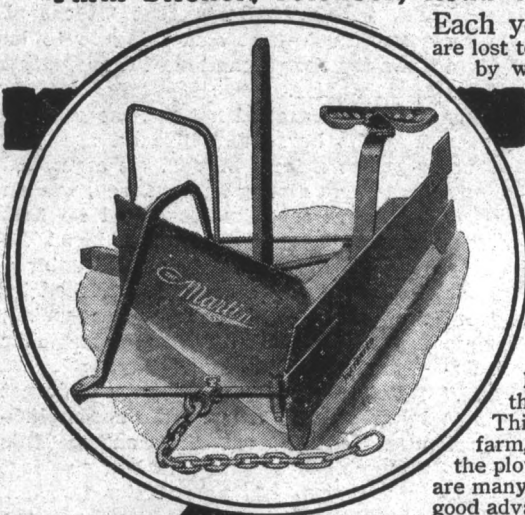
(Continued on page 7)

DITCHING AND SOIL WASHING Problems Solved

Here's an inexpensive machine that has solved the problems of ditching and soil washing for thousands of farmers, and will solve them for you, too.

THE Martin
O.D. & G. CO. REGISTERED

Farm Ditcher, Terracer, Road Grader, Dike Builder



Model No. 20
Adjustable
Reversible

Each year many acres of grain are lost to the individual and to the nation by water standing on the fields because of improper drainage. Isn't it high time this frightful waste be stopped and that the farmer be insured of bigger crops and better returns for his labor? We must raise more food than ever in America this year to help feed the starving peoples of Europe. This is the farmers' opportunity. Prices of all food products will remain high for some time to come.

Many a farmer thinks he has no need of the MARTIN, but that's where he is dead wrong. This machine is needed on every farm, and was needed there before the plow. Even on well tilled land there are many places where it can be used to good advantage, and will quickly pay for itself. Stop a minute and study closely the many uses of this handy little implement.

Here's Just a Few of the Things It Does—and Does Well

Cuts a mile of 3-ft. V-shaped ditch, for tiling, open surface drains or irrigation, in a day. Goes down 4 feet. Solves the labor problem so far as ditching and dirt moving work are concerned. Cuts down the high cost of tiling; backfills; cleans out old ditches; builds farm terraces to stop soil washing and to conserve moisture; reclaims old abandoned hillsides and swampy land and converts desert areas into cultivatable lands; makes roads from ditch to crown; tears down dredge ditch banks and old levees; fine for throwing up rice levees; cleans barnyards; moves snow and does a host of other things. There's always something for the MARTIN to do. Can be used every week in the year. Easy to operate. Works in any soil. Saves your crops and soil. Saves labor, time and money. Does work of 100 men. 2, 4, 6 horse or tractor sizes.



The Martin cuts a "V" shaped ditch down to four feet deep



10 DAYS FREE

Try the MARTIN 10 days free. Give it a good, fair trial on your farm, where you can be both judge and jury. If it doesn't prove all that we claim and more, ship it right back to us at our expense and we will refund every cent of your money, including freight charges. Catalog is free—send for it today.

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As a road maker and keeper, the Martin has any grader you ever saw beat to a stand-still.



Earn Big Money Cutting Wood
With a Howell Drag Saw Machine. Turn your timber into cash. Big coal shortage. The demand and prices for fire wood are greater than ever. Our drag saw cuts more wood in less time and at less expense than any machine built. Send today for our FREE catalog K and prices. R. R. Howell & Co., Mfrs., Minneapolis, Minn.

Investigate Now.

Washtenaw County Farmers Active

A NOVEL which was popular a few years ago depicted a certain mountain community as eagerly watching for a spring freshet which should boat their winter's harvest of logs to market. So keen was the urge of their desire that on Sunday the local pastor prayed somewhat after this fashion: "Oh, Lord, send us rain;—not a sizzle-sozzle, but a sod-soaker and a gully washer." According to the vivid story, the minister's prayer was abundantly answered.

Well, in Washtenaw county for a long time a few zealous souls have longed to see the farmers organize on a wider scale and for more tangible ends than they have done. That such a desire is being fulfilled, anyone present at the second annual banquet of the County Farm Bureau on Saturday, January 18, can testify.

At that time two hundred and fifty men, women and children, after a substantial and social half hour, listened to the first report made to them by the man whom a year before they had hired as their county farm business agent. These people came from many sections of the county; they had never been together before. Those of us, accustomed to meetings of county country folks, recognized this at once. We saw many new faces and, introducing ourselves, found on one hand a man and wife from one corner of the county and, on the other, folks from the opposite extreme. These people were there as the fruits of H. S. Osler's work among us as our "agent." His calls at their farms, their calls at his office, his letters, his group meetings in their neighborhoods, his activity as buyer of seed grains, his assistance in organizing business associations—here were all these represented in this enthusiastic bunch of farm folks.

But enthusiasm and numbers were not all. A year ago, at the first banquet of the farm bureau people, there

was more or less of distrust, even among the most sanguine, of the ultimate advisability of calling an agent to help run our business. We went into it with some misgivings and looked askance at the man who had the nerve to venture upon such an errand for us. But the end has apparently justified the effort made to attain this second annual dinner together.

Dr. Eben Mumford, in his address said it struck him as a "family affair," and what greater compliment could he have paid this county family group? Mr. N. P. Hull gave a stirring appeal for greater study of the true standing of farming among business enterprises. Speaking of the occasion, later, he said: "When that number of farm men and women sit down to eat and confer together, it means something." The discrimination and deep interest shown in the election of officers and directors for the coming year did, indeed, indicate that "it meant something"—that something is to be done for the promotion of the county's rural affairs.

Washtenaw did not put the cart before the horse and hire an agent to organize a farm bureau. It organized its bureau among its own men, women and farm organizations, held its first annual banquet, and then hired its man. He came among us and entered into the spirit already established by the bureau—which, freely interpreted, is "Get acquainted with your neighbor—you might like him."

But the bureau and the agent do not by any means sum up the accomplishments of the past few months. This dinner together was, rather, the last in a series of noteworthy farmers' meetings that had occurred in the county within a fortnight. True, all these meetings were represented in the bureau—gathered by it, as a hub collects the spokes of a wheel to facilitate speed in getting over needed ground.

Besides the local and county organizations of the Grange, Gleaners, Horticultural and Farmers' Clubs, which have existed for years and are still doing good work, there is now a notable group of new associations, formed mainly to better farm economic conditions. Foremost among these later organizations which, for the most part, farmers have started and officered on their own initiative, is the Ann Arbor Dairy Company. This is a cooperative company formed by the local milk producers around the city who have taken over the largest distributing business, and hired the managers of it to conduct their business in a very modern new building. This beautiful, sanitary building, equipped with the very latest systems of pasteurizing, refrigerating, bottling and cleansing, was opened for use last November. The annual meeting, held the middle of January, was attended by nearly all the stockholders who followed every detail of the reports made by the officers with intent of interest. The reports showed how, step by step, the quality and care of their milk had improved, how obstacles were being overcome, how prices to producers have increased and how incentives are being offered for still greater returns through payment on a butter-fat basis and special awards for low bacterial count. The progress of this company seems to have been made with careful caution on the part of its management and promises a sound future growth.

Then there is now a group of cooperative stock shipping associations—one of which was organized a year ago on a county scale, although it has thus far operated only at Ann Arbor. Its annual meeting was held on the afternoon of the same day the dairy company met, and reported a year of hopeful financial results. An address at this meeting was made by Mr. Hale Tennant upon the policy and management of cooperative associations in

general, but the northern Michigan potato associations in particular. A few days later the first branch of the county stock shipping association was organized at Chelsea with a membership and prospects that threaten to eclipse its parent organization. Another similar stock shipping association at Manchester has just closed its first year of operation, showing that it has sold nearly a quarter million dollars' worth of live stock for its members and other farmers, and returned all money to the community. At Saline a cooperative elevator has been in operation for four or five months, and at Dexter another project is in process of organization to meet the grain, produce and stock needs of farmers about that town.

Thus, within a year and a half, what seems little short of a miraculous innovation has been accomplished. If we ask "How?" the answer is found in two facts: One, that the times are ripe for cost-accounting on the part of farmers everywhere, demanding economic changes in their methods of handling their own business. The simplest, the sensible, and the soundest method at their hand is the cooperative, which they are rapidly coming to recognize as theirs by right. The other fact is that the old line farmers' organizations have trained the leadership and had it ready with which to run these new business associations. Looking about at the farm bureau banquet, referred to above, one recognized those who had served apprenticeship in local farm organizations—masters, presidents, secretaries and so on, of Grange, Gleaners and clubs; women, too, who were accustomed by practice in setting forth delightful menus and serving banquets in order and with promptness.

By these tokens is country life entering into its own "reconstruction period."

JENNIE BUELL.

News of the Agricultural World

ADVANCE IN FARM WAGES.

AVERAGE farm wages in the United States in 1918, as ascertained by the Department of Agriculture, were \$34.92 a month with board, and \$47.07 without board. There has been a progressive advance for the past five years. The average in 1914 was \$21.05 with board and \$29.88 without board. The lowest average in recent years was \$10.42 with board and \$16.42 without board, in 1879.

Day labor at harvest averaged \$2.65 with board and \$3.22 without board, in 1918. In 1914 it was \$1.55 and \$1.91, respectively.

Highest monthly wages last year were paid in Nevada, \$65 a month with board and \$85 without board. Lowest wages were in South Carolina, \$21 with board, \$28 without board.

The average in Kansas was \$40.80 and \$56.40; in Missouri, \$35 and \$45; in Iowa, \$50 and \$64; in Illinois, \$38.20 and \$52; in Oklahoma, \$35 and \$50.

Highest day averages at harvest were paid in North Dakota, averaging \$4.50 with board and \$5.50 without board. The average rate in Kansas was \$4.15 with board and \$4.65 without board.

Farm wages generally were sixty to seventy-five per cent higher last year than before the war.

Average farm prices in November, 1918, compared with those of November, 1914, show the following percentages of advance. Hogs, 127 per cent; beef cattle, 50 per cent; sheep, 116 per cent; wool, 200 per cent; hay, 70

per cent; wheat, 107 per cent; corn, 112 per cent; oats, 60 per cent; butter, 85 per cent; eggs 85 per cent; chickens, 94 per cent; cotton, 300 per cent. The latter comparison is with an extremely low price in 1914, but cotton shows an advance of 136 per cent over the average for four years prior to 1914. Most other commodities were selling in November, 1914, at about the average prices of several preceding years.

PRIZES FOR RAT-KILLERS.

A FEMALE rat produces an average of sixty young each year. A pair of rats, breeding uninterruptedly and without any deaths for three years, would have 359,709,480 descendants. The female begins breeding at the age of three or four months and ten young rats make up an average litter.

On an average farm, enough destruction is wrought by rats in a year to more than pay the farmer's taxes, and besides the destruction of two hundred million dollars worth of crops and other property in a year, rats are conveyors of disease.

A rat killing campaign is only one step in their extermination; the rest must be accomplished by rat-proofing all buildings and depriving them of all nesting and hiding places.

But a great saving can be accomplished by killing them and to encourage boys and girls to undertake such a campaign, the Howell county, Missouri, Farm Bureau, offers a cash award of twenty dollars to be paid to

the school reporting the largest number of rats killed from now till the end of the school term, and a second prize of fifteen dollars for the school reporting the second highest number, ten dollars for the third prize and five dollars for fourth prize, the money to be spent for any school improvement the school may prefer.

SEED TRADE BOOMS.

EVERYTHING is all set for a big year in the vegetable seed business, and the trade is expected to show large proportions in the course of another month. Last year was one of the most restrictive and disconcerting seasons known, because of government red tape and limitations and because stocks were hard to get, local dealers say, but prospects for the coming season are bright.

Dealers generally believe that vegetable seeds will be bought in much larger quantities because, with the war over, labor will be more plentiful and much attention which was diverted by the war, will be returned to the production of vegetables. "The prices of vegetables are bound to remain high for another year," said one dealer, "and that will be a great incentive to heavy planting."

With the exception of a few kinds, vegetable seed stocks will be plentiful this year for domestic planting needs, and some exporting will be done. American exportation of vegetable seeds has never attained large proportions, but large quantities will be sent to our

allies in Europe this year. Vegetable seeds have been removed from the Export Conservation List by the War Trade Board, and the Seed Reporting Service indicates a good surplus on hand.

AGRICULTURE IN BELGIUM.

WE in this country can learn a wonderful lesson of thrift from the people of Belgium. It has been aptly said that farming in Belgium is like gardening on a large scale. The soil, for the most part, is thin. Yet so carefully does the Belgian farmer cultivate every inch of ground that the crops per acre often double in quantity those raised in our own country.

The farms in Belgium are smaller than those in any other European country. The average size of a farm is less than six acres—5.7 acres to be exact. Although the people of Belgium are, as a whole, by no means wealthy, there are surprisingly few paupers. Farm hands, it is said, stand a better chance of becoming land owners than in almost any other land.

Before the war there were in Belgium are, as a whole, by no means cattle to the square mile. This is a greater number than in any other country in Europe. The Belgians are excellent dairymen. The most scientific methods are followed; the health and productiveness of each cow are carefully guarded and great pains are taken that there shall be no wasting of the milk and cream which are produced.

NOW 32 WORLD'S CHAMPIONS

To The
Credit of

SCHUMACHER FEED



Once more the value of SCHUMACHER FEED as the carbohydrate or maintenance dairy ration is proven in the record recently made by SOPHIE'S AGNES. SOPHIE'S AGNES produced 16,212 lbs. of milk and 1000.07 lbs. of butter fat in 365 days—a record that makes her the Champion Jersey Cow of the World—the first Jersey cow to produce 1000 lbs. of butter fat in one year. The ever increasing frequency of World's Championship milk and butter records that have been made with SCHUMACHER FEED as the carbohydrate part of the ration proves conclusively that

is in a class by itself. All other feeds in the world combined cannot show records equal to those obtained by this wonderful feed. 32 *World's Champions*—cows of nearly every breed—have made their world's records while being fed SCHUMACHER FEED as the carbohydrate part of their ration.

The reason for SCHUMACHER supremacy as the long-distance "record maker" is because it is composed of the necessary elements to supply dairy cows with reserve vitality, strength and endurance so necessary for long-distance milk production. It keeps cows "on their feed"—its palatability induces them to eat heartily, and the result is maximum milk and butter production.

If you are not feeding SCHUMACHER FEED to your dairy cows, give it a fair trial. This "old reliable" result-producing feed—the feed that has proven BEST for the world's Champions—will prove the BEST for YOUR cows. Get it at your dealer's. If he can't supply you, write us.

The Quaker Oaks Company

Address: Chicago, U. S. A.



The first Jersey Cow in
the world to produce 1000
lbs. of Butter Fat in one year.

(113)

SOPHIE'S AGNES
Owned By Ayredale Farms
Bangor, Maine

Test made under supervision of
Mr. J. E. Dodge, of Hood Farm, Lowell, Mass.

FOR FOOD CONSERVATION



The Big Profit Maker that Pays for Itself

ON MORE than 60,000 farms the Indiana Silo has already paid for itself in crops saved, in fatter cattle, in more milk, and is returning big profits to every owner, every year.

High meat, milk and butter prices make it doubly important to preserve the full food value of your crop—to keep it succulent, whole and tasty. These prices increase the profits from the

INDIANA SILO

One year's saving with an Indiana under present conditions more than pay back the investment. And the silo can do the saving before you pay for it.

Our large purchasing power enables us to supply better materials and better workmanship than can be had in silos that cost more. Ask the owners of Indiana Silos in your neighborhood. Prove to yourself that there is no silage better than that made in an Indiana. It's a big profit maker for your farm, and lasts a lifetime.

Write for our easy payment plan and descriptive catalog.

INDIANA ALL-ROUND TRACTOR

"The World's Tractor"

This tractor does all kinds of farm work with the horse implements you already have and without special and expensive hitches or equipment. Weighs no more than one large horse. Replaces four horses and one man. Costs less than horses and 60 per cent less to keep going. Cuts time spent on chores. The Indiana plows, harrows, drills, cultivates, mows, pulls a binder and does belt work.

Write for folder that tells what the Indiana Tractor can do on your farm.

THE INDIANA SILO COMPANY

826 Union Building Anderson, Ind. 826 Indiana Building Des Moines, Iowa
826 Silo Building Kansas City, Mo. 826 Live St'k Exch. Bldg. Ft. Worth, Tex.

FOR FOOD PRODUCTION

BLUE BARLEY

Choice Hulless Blue Barley (bearded). A wonderful yielder—this seed weighs 64 lb. per bushel. Five cents per pound F. O. B. Adrian.

THE CUTLER-DICKERSON CO.
ADRIAN, MICHIGAN

QUALITY FIRST. Our first effort is to supply the best quality that skill, experience and money can produce, making

DePUY'S SEEDS FIRST AID TO GOOD CROPS They are Northern Grown and must stand the most severe tests for purity and germination.

OUR QUALITY SEEDS give the grower practical crop insurance at low cost. Light overhead expenses enable us to give the buyer an advantage in **QUALITY and PRICE.**

OUR 1919 SEED BOOK and Samples of any Farm Seeds you wish to buy. Free on request. Don't buy anything for either Garden or Field until you investigate our values.

THE C. E. DePUY CO., PONTIAC, MICH.

When You Write to Advertisers Please Mention This Paper.

News for Farmers

MORE MILL FEEDS AVAILABLE.

WITH the return of all wheat bread to American tables following the relaxation of substitute regulations farmers may expect a somewhat in-amount will be further enlarged by the recently increased purchases of flour by the Food Administration Grain Corporation for export.

A third factor which is expected to increase the supplies of mill feeds is the cancellation of the milling extraction rule, which diverted into flour a considerable proportion of the wheat berry ordinarily used for feed.

There will be a continued shortage of mill feed as compared with the pre-war years. The price of these feeds is being maintained by regulation at a level which stimulates an abnormal demand.

ADVANCE REFRIGERATION RATES.

FOLLOWING the late advances in freight rates throughout the country, the carriers are now trying to put into effect even a more drastic advance in refrigeration charges, which if adopted will cause an actual further loss to shippers of fruits and vegetables of millions of dollars per year. The new rates as proposed apply to the handling of perishable freight to all points in the United States, under the title Perishable Freight Tariff No. 1, in which an effort is being made to consolidate all the various tariffs of the kind in the country. Advances are proposed in heater car rates as well as refrigeration rates.

A few illustrations will serve to apprise the public of the almost confiscatory advances as proposed:

Refrigeration charges from the eastern seaboard to the middle west as proposed are \$80 per car; previously the charge was based on the actual ice used to Chicago or the Mississippi River, with a stated charge beyond of \$38 from the river and \$42.50 from Chicago. The increase here is approximately thirty per cent.

From Colorado to Kansas City a car rate of \$65 is proposed; formerly the charge was \$40.

Citrus fruit shippers of California will be especially hard hit. The proposed rates are \$110 per car on these from California to Missouri, compared with a former rate of \$60, and the proposed rate to New York from California is \$125 against the former rate of \$75. This is an advance of \$50 per car and if 30,000 cars are shipped within a year's time to points as far away as those mentioned, which is not out of reason in a big crop year, it will cost the citrus fruit shippers of that state alone an extra \$1,500,000 per year.

Deciduous fruit shippers of California also are hit hard. The proposed rate from that state to Missouri is \$120 per car whereas it has been \$65, and the proposed rate to New York is \$135 against the former rate of \$80. If 20,000 cars are shipped yearly to points as far away as the destinations mentioned, another \$1,000,000 is lost to the California people shipping deciduous fruits.

Under another proposition, that of pre-cooling and pre-icing, the shippers again are the goats. The new tariff as proposed provides that when the car is pre-cooled only by the carrier and shipped without ice and not to be iced in transit, there will be a charge of \$25 per car, shipped anywhere.

Where the car is pre-cooled by the shipper and pre-iced by the same, not to be re-iced in transit, a charge of \$30 per car is to be made to Missouri River points.

Where the car is pre-cooled by the shipper and initially iced by the car-

rier and not to be re-iced in transit, a charge of \$50 to Missouri River points is proposed.

The tariff as proposed, under the subject of handling perishable freight in less than carlots, makes a provision that the shipper must specify on the bill of lading either box car service, owner's risk of damage by heat or cold, or refrigeration service, with an additional charge for such refrigeration service of ten cents per cwt. for 100 miles and under with increases for each one hundred miles up to twelve cents for 500 miles, which service includes artificial heat when available and necessary. It further provides that when less than carlot shipments are under ice, a further charge of thirteen cents per cwt for 100 miles and under shall be made, with an increase to twenty-four cents per cwt. for a distance of 500 miles, which is about the maximum distance for shipping in less than carlots.

VEGETABLE SEED SURVEY.

ANNOUNCEMENT has been made of the intention of the Department of Agriculture to conduct an intensive survey of the vegetable seed production, both for 1918 and for 1919. The survey should have been completed by February 1, so that the results may be in the hands of all seed men by the middle of the month.

Reports are required from all commercial seed growers, and also all seed farmers who grow vegetable seed without previous arrangement or understanding as to sale or disposition of the seed produced by them. The total production of each item grown by each grower will be given. Acreage already planted and that to be planted and harvested in 1919 will be fairly accurately estimated.

APPLE MARKET IN ENGLAND.

RECENT cablegrams from England show the apple market over there to be just as strong as ever and maximum prices are expected for some time to come. Two steamers sailed from here last week bound for Liverpool. Prices quoted are \$16.07 for barrels and \$4.70 for western boxes regardless of quality. Eastern Baldwins have been selling at \$4.75@5.75 and the freight on barrels has been \$5 and \$1.25 on boxes. Some discriminations are reported being made by buyers as to condition and Baldwins in some instances have been reported as considerably spent.

A well known operator said recently that from this time on plenty of ship space would be available and no inconvenience suffered on this score but the annoyance now is whether an embargo will be put on shipments February 14 as announced some time ago.

Apples are now selling at wholesale in Liverpool for twelve cents a pound and eighteen cents at retail.

STABILIZING TRACTOR INDUSTRY.

The tractor industry is fast becoming one of the most stable industries of the country. Thousands of tractors are being sold to farmers who are buying their second machines. This fact alone goes a long way to prove that the tractor is here to stay. The size of tractor that a farmer needs is not the tractor that will enable him to do his work in the way he has in the past, but a machine large enough to plow deeply and swiftly and one that in seed-bed preparation will enable him to disk, harrow and pack in one operation. Tractor farming ought not to mean entire replacing of horsepower; it should mean the multiplying of one's power as much as possible.



High in
Quality

En-ar-co National Motor Oil

For Use in Airplanes

Met Every Government Test

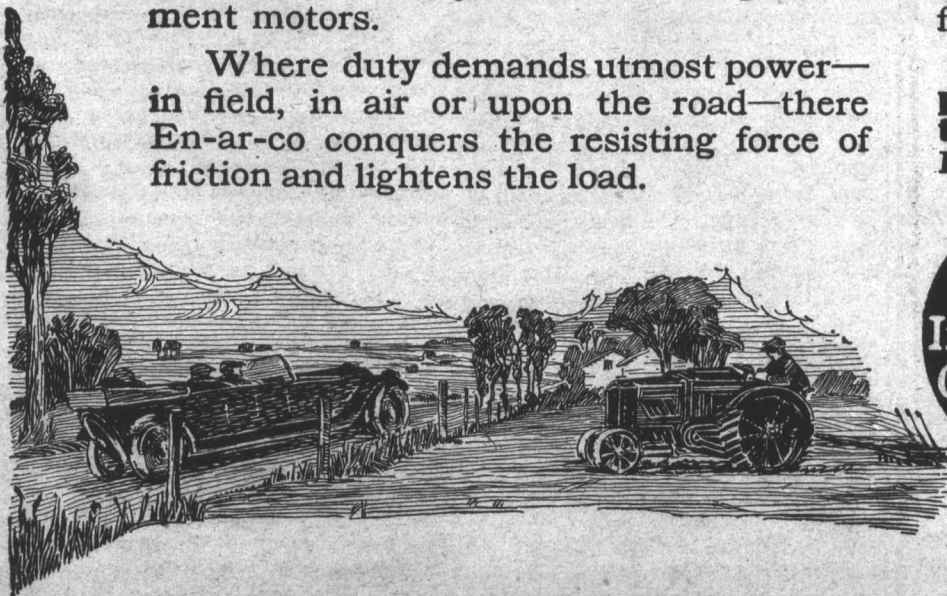
THE natural demands of war have made it necessary for us to withhold information concerning the important part that En-ar-co played. Now, however, we can announce that thousands of gallons of this famous lubricant aided materially in the mastery of the air as well as in developing utmost power in passenger cars, auto trucks and other motors of war.

In airplanes the terrific ordeal of a single day in the air with engines running hour after hour at top speed, under full load, is more than equivalent to a month's service in a motor car where the limit of speed is seldom reached and the demand for the last bit of power is rarely made.

Power Your Automobile and Tractor With En-ar-co National Motor Oil

Used in any automobile, tractor or other gasoline motor, En-ar-co National Motor Oil will develop power for you as it has in government motors.

Where duty demands utmost power—in field, in air or upon the road—there En-ar-co conquers the resisting force of friction and lightens the load.



The National Refining Co.
Branches in 78 Cities
(125)
General Offices : Cleveland, Ohio

WAR DEPARTMENT
OFFICE OF THE CHIEF SIGNAL OFFICER
August 26, 1917.

From: Office Chief Signal Officer
To: National Refining Co., Cleveland, Ohio
Subject: Order for oil

In accordance with verbal quotation given Major Martin of your Company (RMV), I am directed by the Chief Signal Officer of the Army to place an order with you for the articles listed below:

1. 50,000 gal. Oil, heavy airplane, Enarco,
2. 25,000 gal. Oil, extra heavy, Enarco,
3. 25,000 gal. Oil, transmission, Enarco,
4. 15,000 lbs. Grease, cup, Enarco, at

Aviation Concentration Station,
Minneapolis, L. I., marked for Aviation Expeditionary Forces,
General B. D. Foulke,
France.

NOTE:—Early shipment is urgent, therefore please apply for Government Bill of Lading in ample time to avoid any delay in delivery. A close observance of marking instructions and the enclosure of packer's lists is requested and will be appreciated.

The above to be delivered in export wooden barrels at the earliest possible moment.

ACT NO. 1921 WILL FOLLOW.
(1917)

PC-dqm-con5-min-3

A.C. Downey
Captain, Signal Corps

Try En-ar-co now and note the better service your motor will render. Note how it stands up day in and day out. And note, too, its freedom from excessive carbon.

Buy of your local dealer if he has En-ar-co products in stock. If he cannot supply you, then mail your order direct. But do not fail to try En-ar-co at once.

Use
This Coupon
If Your Dealer
Cannot Supply
You

Send This Order Coupon Now!

THE NATIONAL REFINING COMPANY
1788 Rose Bldg., Cleveland, Ohio

My Dealer
located at
cannot supply me. Please ship the following from your
nearest branch. Check enclosed for \$.....

..... Gallons En-ar-co National Motor Oil

..... Gallons White Rose Gasoline

..... Gallons National Light Oil

..... Pounds En-ar-co Motor Grease

..... Pounds Black Beauty Axle Grease

My Name is

Street or R. F. D. No.

Town

State

Shipping Point



Ask Mr. Favor

How To Get Big Fruit Crops

HUNDREDS of thousands of dollars worth of fruit is lost each year by growers who fail to properly care for trees. *Experts Seldom Suffer These Losses.*

If you are not reaping a maximum yield from your trees and do not know the reason, "Ask Mr. Favor."

Mr. Favor is a nationally recognized expert on fruit growing. For many years he was editor of one of our foremost Fruit Journals. He was also associated with two state experiment departments.

Mr. Favor's experience is at the disposal of any one interested in fruit growing. This does not mean users of Hayes Apparatus alone. It means you—no matter where you live or what apparatus you use.

Just "Ask Mr. Favor" about any problem that bothers you. He will reply in a personal letter.

Also send at once for a copy of Mr. Favor's new masterful Spraying guide—"Successful Spraying."

Write for Big-Spraying Guide

This Guide is a real text book—a veritable encyclopedia on spraying. Finely printed and durably bound. Published price \$1.00. We will however, mail a copy and include our big catalogue of Fruit-Fog Sprayers, if you send 25c. coin or stamps. Worth thousands of dollars to American fruit growers. Write for your copy at once.

HAYES PUMP & PLANTER CO.
Dept. L. Galva, Illinois



Shall Land Owners Pay all Taxes?

lower rents in cities and improve the market for farmers' products. It will produce a normal and natural parity between the value of the opportunity to produce, and the value of the things produced and take for social use, social value. It will not offer any reward to idleness, but it will secure to honest labor and capital their full production.

What is the fruit of this evil tree we have planted and nourished in all these years? Idle men and idle capital, low wages and low interest, the streets filled with beggars, the homes of the workers with poverty, the lives of business men and hard-working farmers with care. Social value for social use; private property for private use—are the only sound principles upon which to base a system of public revenue.

Single Tax in Actual Operation.

The reader may by this time have reached the conclusion that the single tax method has been pictured as too good to be true; that it looks nice on paper, but would not work out under practical employment. It was my pleasure to travel nearly six thousand miles through Canada during the harvest season of 1918, and, in making a study of the various agricultural features of the progressive three wheat and live stock provinces, namely, Alberta, Saskatchewan and Manitoba, the single tax system was investigated. I talked with several hundred farmers, and secured their side of the story.

I have yet to meet a farmer who is displeased with the single tax method; one who does not feel that he is taxed along a more sensible line, and who feels that he pays for about what he receives. And you must remember that none of these three western provinces of Canada have what we know here as industrial or commercial centers, like Detroit, New York, Cleveland or Pittsburgh. The country is essentially agricultural, for from the soil comes the wealth of the western country. The average value is what we might call land value, not "commercial or industrial center value." If anything, the single tax method would work greater hardship on these farmers than on farmers of this country, since greater total resources would need to be raised from the land values.

In Alberta I visited a farm of one hundred and sixty acres. This farmer went from New York state about fifteen years ago. He today has buildings and farm equipment valued at approximately \$18,000; he has stock worth \$10,000; he had a \$12,000 wheat crop ready to harvest; \$2,500 worth of alfalfa; \$2,000 worth of flax, and several smaller crops. In this country, under our system of taxation, he would be forced to pay a tax bill for state, county, township and school, of about \$150. And he has better school facilities than abounding in the average rural section of the states, only one mile distant; is two miles from a main line railroad; handy to church and other social conditions. He paid a 1918 tax under the single tax method of \$35, and enjoyed fully \$200 worth of social privileges as measured by the standard existing in our country.

When the Alberta assessors came along to this man's farm, they did not see the crops, buildings, live stock, modern machinery as taxable property. They were mighty glad that this

man was progressing and making money, but they were not there to fine him for being progressive; they were there to ascertain a value on the land itself, and therefore they appraised land only. They did not raise his assessed valuation one penny because he had built a new tool house and painted his farm home. That was progress, but it was not used as a club to raise money for the social furtherance of the community.

But the assessors of Alberta did fine the owners of 8,000,000 acres of land. These owners had purchased the land in hope of an increase in land values. The land was idle and was doing no one any particular good. Therefore a vacant land tax of one per cent was levied on this land, and the men who were idle paid fines, whereas the man who had been progressive and were good citizens were not fined for being good citizens. The total valuation of Alberta's idle land was decided to be worth \$70,000,000. Therefore, this idle land was taxed so as to bring in a revenue of \$700,000 toward the development of roads, bridges, better and new schools, etc., for the men who were working hard.

In our country these men have the lighter end of the load. The man who permits his land to go to weeds, the barns to fall in, pays the smaller tax, presumably because he is an idler, while the man who is progressive and keeps his fields clean of weeds, paints his buildings, and aids in bringing up values as to social conditions, pays the heavy tax bill. The average tax on 160 acres of land in Saskatchewan, under the single tax is \$23.50. Here likewise only the land itself, exclusive of either improvements or personal property or of the increase in land values caused by the erection of improvements, is taxed.

(Next week will appear an article on this same subject by Dr. W. O. Hedrick, head of the Economics Department of the Michigan Agricultural College.—Eds.)

THE TRACTOR A SUCCESS IN MICHIGAN.

(Continued from page 199).

think of using language not meant for the ladies to hear. The four-wheeled tractor has not been universally adapted to all farm work, as a one man proposition. It was a waste of man power to have one man operate the tractor and another operate the mower, grain binder, or whatever machine is being drawn. The use of universal joints, an extension rod and sliding coupling for the steering apparatus and ropes for the application and release of the clutch has made it possible to use this type of tractor quite extensively.

A great many farm shave been completely motorized. The two-row motor cultivator with planter attachments makes an ideal rig for planting and cultivating corn. The writer was fortunate to be able to observe and keep track of a motor cultivator last year. The owner was able to cultivate in the same length of time about one-fourth more corn than his neighbor who had two single-row horse-drawn cultivators. The steadiness, dependability and ease of turning at the end of the row were features that attracted one's attention.



More Bushels per Acre!

That means more profits—and that's what you want. That's what you get when you sow

APEX BRAND FIELD SEEDS

For over 25 years Michigan farmers have found Apex Brand Seeds the same uniform quality—exactly suited to Michigan soil and climate; for they are all northern grown. Re-cleaned and tested by experts. Backed by the largest exclusive field seed house in the state.

For a bigger yield and greater profits this year, tell your dealer you want only Apex Brand Seeds.]

Ask your neighbor about them.

CAUGHEY-JOSSMAN CO.

Detroit, Michigan

Northern Grown Seeds

(44° to 47° North Latitude)

Alfalfa: Grim and Liscum.
Clover: Mammoth, Alsike, Sweet.
Barley: Wis. Ped. No. 5 and Oderbrucker.
Peas: June, Chang, Ogemaw.
Spring Speltz. Spring Rye.
Robust Beans. Soy Beans.
White Cap and Smoky Dent Corn.
Wis. Ped. No. 25 Corn, grown within 60 miles of Lake Superior.

EDW. E. EVANS, West Branch, Mich.

Married Man For Farm Wanted!

We need a young married man with small or no family to work at Brookwater farm. No man who cannot furnish best of references as to character and dependability need apply. Wife must be a good cook and willing and able to prepare meals for 1 or 2 extra men as required. We are looking for clean capable people who are ambitious to find a permanent place where faithful efficient service will be appreciated. Must demonstrate ability, willingness, loyalty, before unusual wages will be paid. BROOKWATER FARM, R.F.D. 7, Ann Arbor, Mich. Herbert W. Mumford, Owner J. B. Henderson, Mgr.

HELP WANTED

Married Dairy Farmer. Must be extra good dry hand milker for herd of fine Registered Holsteins, about twenty milking. Forman and third hand help. House fuel, light, milk, potatoes and garden spot furnished. State wages required and age. Describe family and give full particulars of experience. Only hard working, reliable, respectable man wanted. H. B. Route 3, Birmingham, Mich.

BINDER TWINE

Guaranteed A1, bug treated, f.o.b. factory near Chicago. Small or Standard February car lot price 19¢/lb. Small lots 20¢, later shipment, 5¢ per bale per month more. Consumers Cordage Co., Minneapolis, Minn.

WANTED Young married couple and single man on Dairy farm. Best of wages, fine house; experienced men only. Best opportunity in State. Apply James B. Jones, Clothing Department, Crowley, Milner & Company, Detroit.

Cull Beans For Sale Carlots or bag lots. YOUNG-RANDOLPH SEED CO. Owosso, Mich.

OAT Read's Green Mountain. Best new variety. Yield, 130 bus. to acre. Absolutely rust proof. Also Seed Wheat, Catalog FREE. G. A. Read, Charlotte, Vt.

White Sweet Clover seed. Test 99.94% pure, germ. 76.6. Write for sample and Price. C. A. THOMAS, Shepherd, Mich.



How about Your Garden Seeds?

You want big crops of vegetables for family use or for market, and you want them to come early. Wise gardeners will use this year, and every year.

Michigan-grown Seeds for Michigan Planting

Michigan-grown seeds produce the biggest and best crops; they are acclimated, hardy, and the plants mature quickly. Our central location means prompt shipments; we give helpful service to our customers; we offer only fresh tested seeds. SAIER'S GARDEN BOOK gives definite reasons why Michigan planters should use Michigan-grown seeds in the garden. It lists and prices all the best varieties. Write for a free copy.

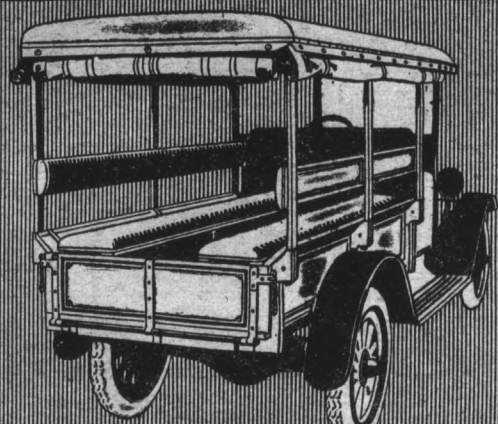
HARRY E. SAIER, Seedsman
Box 20, Lansing, Mich.

Farm Equipment

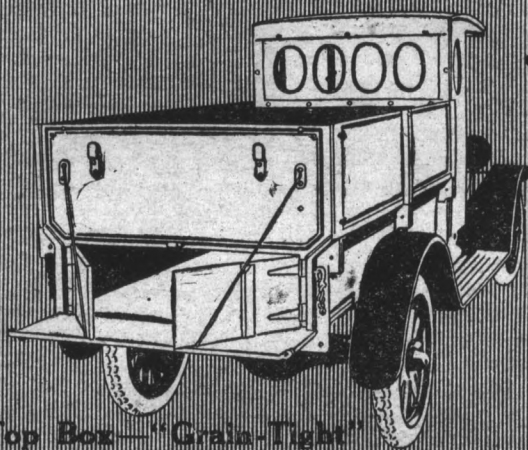
Every up-to-date farm has its clipping machine for horses and dairy cows. Horses work better when relieved of winter coating—cows give cleaner milk when flanks and udders are clipped. Agricultural schools and Government farms use clipping machines. You should have one. Get a Stewart-Ball Clipping Machine No. 1, \$9.75. Send \$2.00—pay balance on arrival. Or write for 1919 catalog.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. 127, 12th Street and Central Ave., Chicago

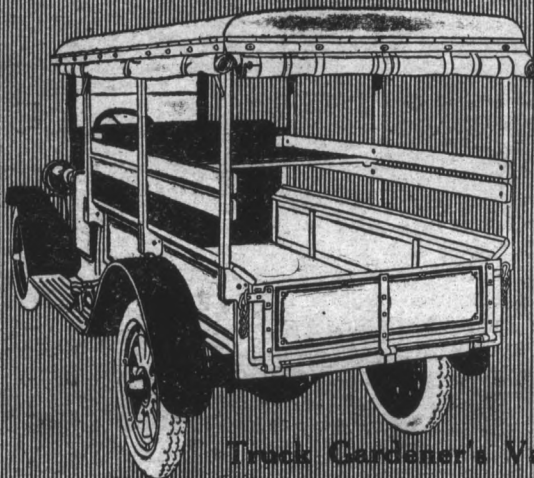
REO



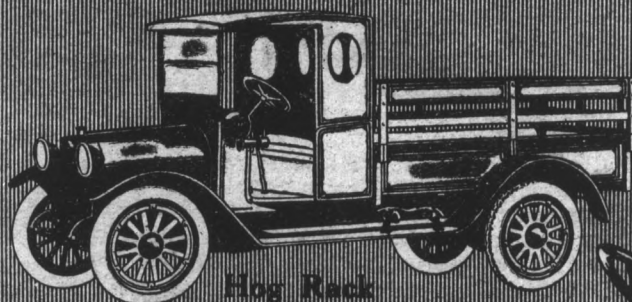
Passenger Car or "Carry-All"



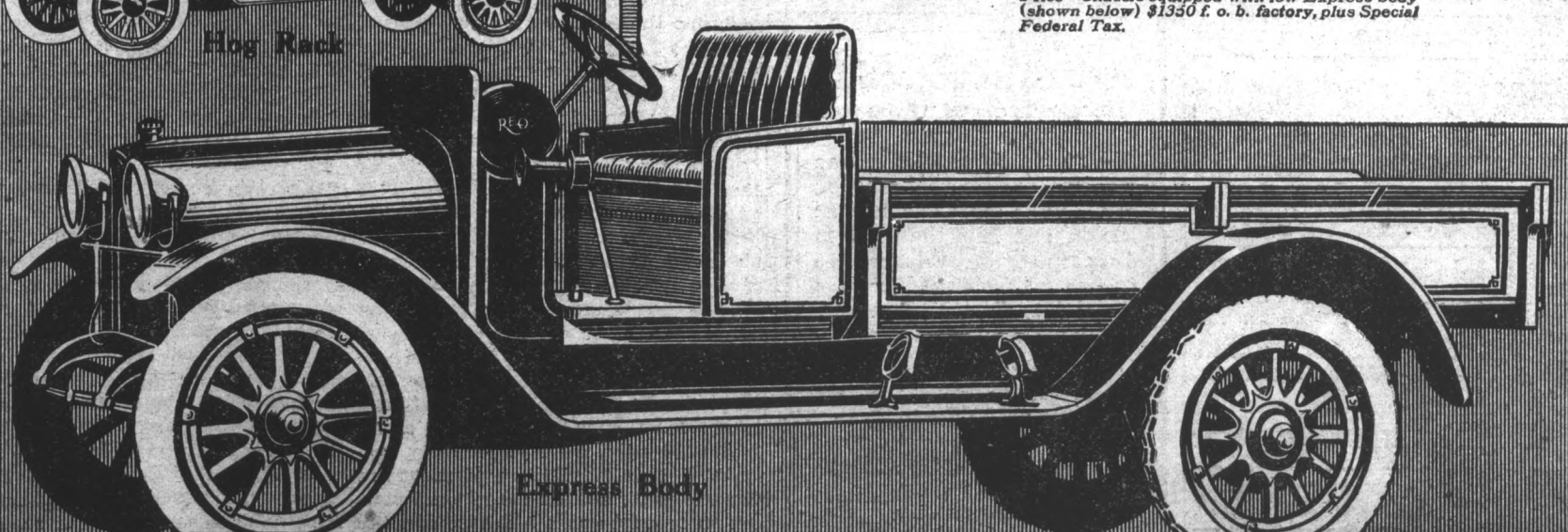
Top Box—"Grain-Tight"



Truck Gardener's Van



Hog Rack



Express Body

Another Triumph for Reo Engineering

There has existed a great need for a more adaptable motor truck.

The need was not for a chassis, for the Reo "Speed Wagon" had proven, in several years of use, that this chassis is ideal for every class of farm hauling.

But there was great demand for a body that would enable you to carry a maximum load of any commodity regardless of its density.

Many attempts have been made to develop a body that would be readily convertible into several practical forms.

Some of these have been successful to a degree.

Fault with all of them, however, was too much complication—too many adjustments and connections to get out of order.

Such construction also ran into a lot of needless weight to be carried all the time.

It remained for the Reo engineers to solve the problem in the simple, direct, substantial Reo way.

And they did it, not by making a convertible body that would fold first into one form and then another, but by a set of sectional units with one basic body as a foundation.

This basic body itself performs fully fifty per cent of all delivery service.

No user will need all the extra sections.

Each user will, however, need one or several of them.

You buy the Reo chassis equipped with the basic—low express—body shown below.

Then, to fit your special service, you select such other attachments or sections as you find most applicable to your work.

This Reo body in its several forms meets every requirement of speedy, economical hauling—in city and suburban as well as rural service.

There are seven forms in all.

On the left we show four forms of this body.

The other forms you may obtain at a few dollars extra cost.

Need we add that the chassis on which these body types are mounted has been longer in service and has been more conclusively proven than any other?

It is, in fact, the pioneer of its class—the first motor truck to be mounted on pneumatic tires.

Also, lest you forget; Reo was the first to see the need for, and to equip a motor truck with electric starter and lights.

The very classification "Speed Wagon" was original with Reo.

This Reo proved the superiority and the greater economy of the pneumatic-tired truck.

In operation and upkeep cost this Reo easily surpasses all others.

And so it should—for it represents the ripest experience and the soundest engineering known to the industry.

Your own Reo dealer will show you this versatile Reo "Speed Wagon" with the seven styles of bodies and quote you price on such as you may select as best suited to your own requirements.

Demand is—tremendous. Always is for Reos, but this season more so than ever before.

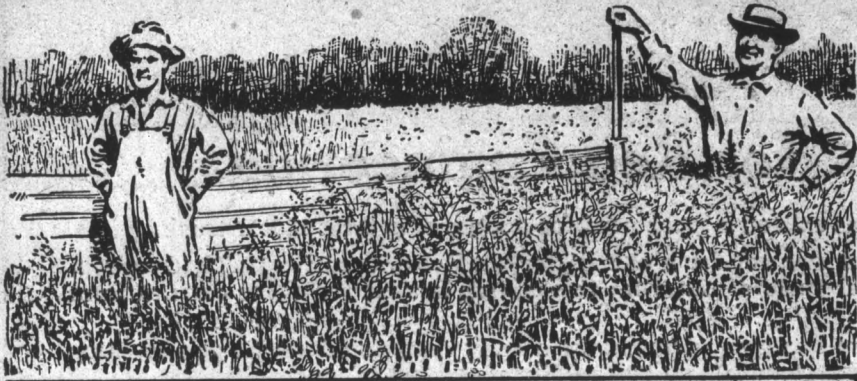
Only way to be at all certain of getting a Reo "Speed Wagon" for early delivery is to place your order at once.

Today won't be a minute too soon.

Reo Motor Car Company, Lansing, Michigan

Price—Chassis equipped with low Express body (shown below) \$1350 f. o. b. factory, plus Special Federal Tax.

"THE GOLD STANDARD OF VALUES"



Showing the Difference between Unfertilized and Fertilized Oats

JARECKI Fish Brand Fertilizers

An Investment for Profit - Not an Expense

SINCE 1881 thousands of farmers have used Jarecki Fish Brand Fertilizers. They have proved profitable when farm products were high and when farm products were cheap.

Farmers who grow grain for the market know that Jarecki Fertilizers have often doubled their yields—giving them double the return from the same land—labor and machinery.

Farmers who raise livestock have found that fertilizing their crops enables them to raise all their feed and have some to sell at a profit, or will enable them to carry from 50% to 100% more livestock on the same land—not to mention the added manure.

The illustration above shows the difference between fertilized and unfertilized oats. All too often oats are grown simply for purposes of rotation or as a nurse crop for grass and clover. But with proper fertilization this need not be so. Fertilizer will enable you to grow more oats per acre and at a lower cost per bushel—produce more energy for your horses and more straw for the manure pile.

Jarecki Fish Brand Fertilizers are mixed to feed the plant continuously. They supply every crop requirement. For more than 35 years they have been used by thousands of farmers. Write us for full information and name of dealer near you.

Dealers wanted in unoccupied territory.

THE JARECKI CHEMICAL CO.

SANDUSKY, O.

CINCINNATI, O.



Eureka Potato Planter

Pays for Itself in Labor and Time Saved

One man and team with an Eureka Potato Planter needs no hired help to plant the whole crop. Whether you plant 4 acres or 400, the Eureka Planter will pay for itself many times over. Better than hand planting. Increases yield. Does 5 operations at once, automatically—accurately.

Opens furrow, drops seed any distance and depth, drops fertilizer (if desired), covers up and marks next row. Furrow opens and seed drops in plain sight—an equal distance apart, at uniform depth, with absolutely no injury to seed. Easy to operate in any soil, made of steel and malleable iron—assuring long life, light weight and few or no repairs.

Write for free catalog on this great line of potato planters—the largest line made. Sizes for 1 or 2 rows, with or without fertilizer attachment. In Stock Near You. A success for over 20 years. Whether you are a large or small grower—write today.

EUREKA MOWER CO. Box 832 UTICA, N.Y.



SHEEP

To The Kids of Mich. I have 75 beautiful registered Hampshire and Shropshire ewes that will have lambs this spring. I wish to sell them to you and buy back the ram lambs next fall at a mighty good price. Start now in a small way. Liberty Bonds taken. Write at once for particulars.
KOPE KON FARM, S. L. Wing, Owner.
Kinderhook, Mich.

200 Bred Ewes Choice natives, coming two years, bred to Shrop Rams, in lots to suit.
ALMOND B. CHAPMAN, South Rockwood, Mich.

Shropshire Rams Yearlings and Ram Lambs of Quality.
B.D. KELLY & SON, Ypsilanti, Mich.

FOR SALE SHROPSHIRE LAMBS, ewes or rams.
ARMSTRONG BROS. R 3 Fowlerville, Mich.

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

OXFORD Down Ram lambs, also a few ewe lambs. Berkshire both sexes. Booking orders for fall pigs.
CHASE STOCK FARM, R. 1, Mariette, Mich.

For Sale Registered Oxford Down rams and ewes; can be seen at FAIRVIEW STOCK FARM, Fred Wolfe, Snover, Mich.

When writing to advertisers please mention the Michigan Farmer.

Are You Protecting Your Child?

If you teach the little one regular bowel movements, you can almost guarantee normal health, and help the child to develop strong resistance to disease. Valuable information about your child is given in a booklet called

"As The Twig Is Bent" which will be mailed you free on request. Write today to

Nujol Laboratories

STANDARD OIL CO. (NEW JERSEY)
50 Broadway, New York

SEED CORN Early Yellow Dent, field selected. Early Amber, cane seed and Regenerated Swedish select oats. Sample and price for stamp. Square deal. WOODBRIDGE FARM, Camden, Mich.



Fitting Stock to Farms

It Always Pay to Make a Careful Study of One's Farm and Markets Before Selecting Breeds of Stock.

IN selecting breeds of domestic animals adapted to the different conditions of soil and climate, both in regard to heat and cold, moisture and dryness, care and feeding it is a fact that considerable changes are manifested in their form, size, age of maturing, breeding qualities and milk secretion. It is noticeable that cattle reared for several generations on rich soils become large and fat, and are distinguished by the shortness of their limbs, while, in drier or colder situations, their whole bulk is less, and their legs are more muscular and strong, which very plainly verifies the truth that good cattle are coincident with good soil, and are not found as a race in a district where the land is poor.

In the tropical countries the cow also undergoes some remarkable physical changes; she furnishes a diminished supply of milk for a shorter period, and her descendants mature slowly and weigh less at maturity than their ancestors. Large animals are at a great disadvantage in standing the heat. Their surface area is too small for the volume that generates heat. Cows, as well as men, need to be lean to stand the heat of a southern climate. Flies and other insect pests are also much more injurious to large cows. Then, the scarcity of tender, nutritious grasses in the south is not conducive to rapid growth and perfect development of young cattle. Southern farmers must learn to care for their cattle in summer as well as northern farmers do in winter before they can successfully compete in the breeding and growing of large animals.

In studying the adaptability of our leading breeds of cattle we find that in regions where the farming is highly specialized there is corresponding demand for a breed of cattle adapted to specialized conditions. For example, years ago the Shorthorn predominated in the eastern and central states, and was the first blood to be crossed with the Longhorn of Texas. In the great bluegrass regions this breed found its best environment, and became then, and it still remains, the leading breed and favorite of the general farmer. Further west the rise of the beef industry followed the use of good Shorthorn bulls.

But as the country began to show signs of agricultural maturity and farming practices in the different regions became more settled there began to arise a demand for specialized breeds of cattle. As the all-round mechanic gave way to the skilled workman, so the pioneer herds of Shorthorns have been replaced, in many regions, by the more particularly specialized breeds. Milk production on the one hand, and the exceptional powers to convert grass into meat on the other hand, make special appeals to the farmer and ranchman respectively in favor of the dairy breeds and Herefords. In the corn belt, where early

maturity and a compact carcass has found the most profit the Aberdeen-Angus has taken the lead, but the Shorthorn is giving it a great battle for supremacy as is evidenced by its rapidly increasing numbers.

Then we find that such breeds as the Polled Durhams and Polled Herefords have proved of great value as dehorners of farm beef cattle, while the Red Poll has demonstrated its ability to produce a good carcass and an abundant flow of milk. In the great northwest the Galloway, on account of its heavy coat, compact build and early maturing qualities has become the favorite breed of many farmers and ranchmen.

In further study of the adaptability of different breeds of cattle we find that as dairy farming has become more specialized that the different breeds are beginning to predominate in different parts of the country. For many years so much attention has been devoted to obtaining a foothold among the red, white and roans that a dairy cattle breeding has been almost a cooperative effort between the advocates of the different dairy breeds, but at present some of the breeders' associations are making a hard fight to retain supremacy in different localities.

The writer recently spent several weeks among the farmers in northern Ohio and Michigan where black and white cattle predominate. On a few farms Shorthorns are kept, but in most herds of twenty cows there would usually not be more than four or five that did not show the characteristic Holstein-Friesian markings. In the great dairy belt of these states the big dairy cows have gradually replaced many other cattle. It is also the predominating breed in many other regions, especially where whole milk is to be sold to the city trade or condensed. In the northern part of the country, where feed is abundant and the large cities demand fresh milk the Holstein breed is leading the field. Where feed is less abundant or where milk production is a side issue, the other breeds are holding their own. In proximity to cities the Jersey and Guernsey breeds maintain their great popularity.

Wherever commercial dairying, with milk production the chief object, is practiced the Holstein cow is best adapted. By years of selection this breed has been developed to eat great amounts of bulky feeds and to produce tremendous amounts of milk. Then, too, the more general use of milk solids other than fats has resulted in condensers and big manufacturing and distributing concerns paying higher prices for Holstein milk than was the case when they had to compete on equal terms with the other breeds in the production of butter-fat alone. In regions where the land is thin and where the farmers do not feed cows liberally the Holstein cow cannot

(Continued on page 230).

You Can Save More Cream To Buy More And Better Cows

THERE is a world-wide shortage of milk cows. Today, America has only 24,000,000 cows. In 1914 we had nearly 35,000,000. And European herds have been almost annihilated. One ordinary milk cow sells for over \$600.00 in Sweden today!

America must furnish milk and milk products (condensed and evaporated milk, powdered milk, cheese and butter) for all the world.

We need 45,000,000 milk cows to completely perform this gigantic task. Increase of dairy herds is absolutely imperative. Furthermore, the more and better cows that you add to *your* herd, the *more money you are bound to make!* For, while prices on other farm products may decline, the

world-wide shortage of milk cows absolutely guarantees that prices for butter-fat (cream) *must remain high* for years to come.

Save more cream! Stop the unnecessary waste that the old, obsolete method of shallow-pan or dilution cream separation methods are costing you—\$20.00 per cow per year—and you can save enough in one year to add more and better cows to your herd.

Make Your Cream Savings Pay For More and Better Farm Machinery

With a VIKING, you can easily add \$20.00 to every cow's net income. That addition to your bank account will be a wonderful help in paying for the new binder—gas engine—tractor that you have long needed.

That much per cow added to your yearly money, will aid much in buying that new phonograph, the piano or piano player that the family has always wanted. The extra cream-saving efficiency of the—

VIKING CREAM SEPARATOR

Will Save Enough Extra Cream to Pay For New Clothes For the Whole Family

If you are trying to make an old, worn-out or inferior separator "do" or if you are "getting along" with shallow-pan or dilution methods of cream separation, **YOU ARE ACTUALLY FEEDING 70-CENT BUTTER FAT TO YOUR CALVES AND PIGS!** Get a VIKING and make every cow

net you \$20.00 more. Investigate. Ask your dealer to show you how a VIKING works; *why* it is the closest-skimming device ever made; *why* it is the easiest-operated and easiest-cleaned separator on the market; *why* it can be and *is* GUARANTEED FOR A LIFETIME! Also—

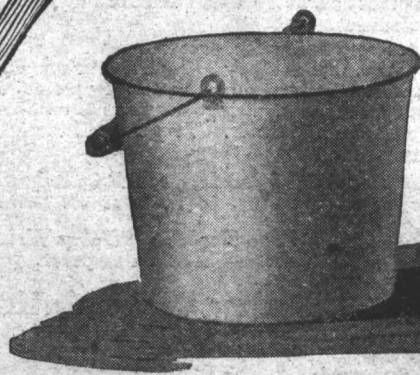
FREE



Get These 2 New Books That Show How to Get \$20.00 More Net Income From Each Cow

Just send your name and address on coupon or postcard.

Swedish Separator Co.
Department BG
507 So. Wells St., Chicago, Ill.



Swedish Separator Company, Dept. BG, 507 So. Wells St., Chicago, Ill.

Send me your 2 New Books immediately and tell me the name of the dealer nearest me who is handling VIKING CREAM SEPARATOR.

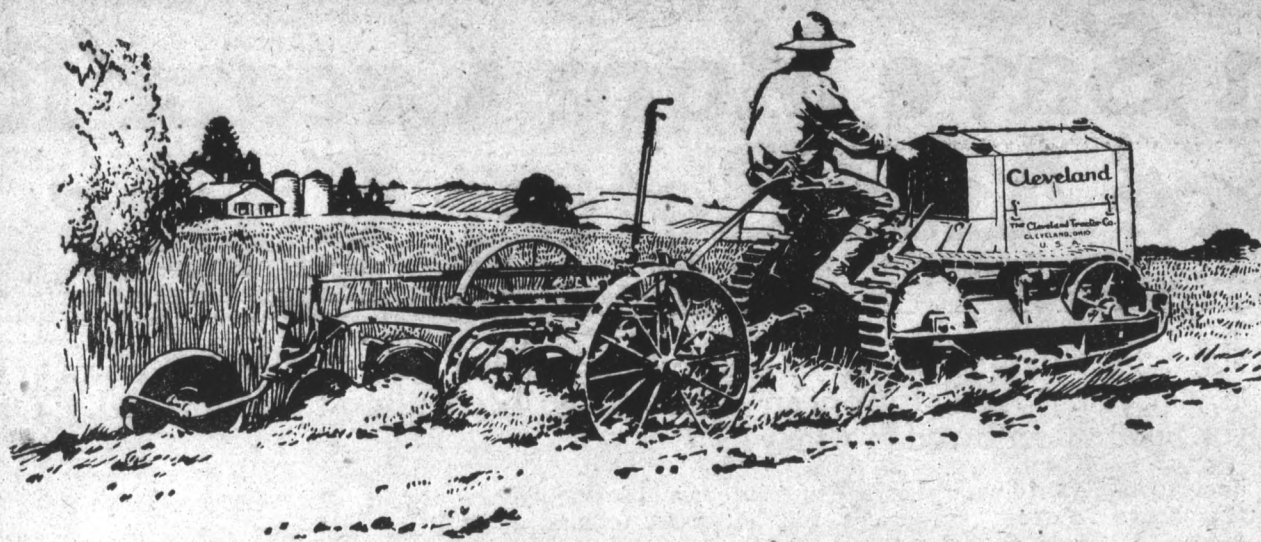
Name _____

R. R. No. _____

Post Office _____

State _____

I own the following number of milk cows _____



Does all the Seed-Bed Work

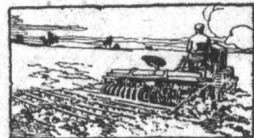
In the important work of preparing the seed-bed, the Cleveland Tractor does more than merely plow.

Any tractor will plow.

But the Cleveland because of its track-laying construction travels on top of the soft plowed ground with harrow, seeder or other implements.

It does its work rapidly and economically under conditions most difficult for the ordinary machine.

The Cleveland, with its tremendous traction surface, rides on top of the ground like the great battle tanks—without wallowing, sinking in or packing down the soil.



The Cleveland uses its power to pull the implement—not to pull itself out of the ground. That is one reason why it operates on so little fuel.

The Cleveland will pull a roller over your young wheat without injuring the crop.

It does the hauling, the manure spreading, the ensilage cutting, the stationary engine work and the hundred and one other things that every farmer expects a tractor to do.

And it does the work better, as well as faster than before.

Orders for spring delivery should be placed now. Write for booklet and name of nearest Cleveland dealer.



The Cleveland Tractor Co.

19021 Euclid Ave. Cleveland, Ohio

The largest producer of track-laying tractors in the world

Cleveland Tractor

HORSES

Pure Bred Belgian Draft Horses

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

Saginaw Valley STOCK FARM

Belgian and Percheron Stallions and Mares and registered Holstein Cattle, of the best breeding, for sale.

Eli Sprunger & Son, Saginaw, W. S., Mich.

Horses Will Be Horses Soon

We have on hand at all times a choice selection of young Percheron Stallions.

PALMER BROS.,

Belding, Mich. R. R. Orleans.

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

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

For Sale Reg. Black Percheron 3 yr. old Stallion and a number of good sound grade draft colts.
CHAS. BRAY, Okemos, Mich.

For Sale Reg. Percheron Stud colt 7 mos. old from ton stock a good one come quick.
JOHN LONGNICKER, Montague, Mich.

NOTICE. If in the market for one of the best 3 yr. old Reg. Percherons in the state write
J.M. HICKS & SONS, Williamston, Mich., Bell Phone.

BAG BALM

MADE BY THE KOW-KURE PEOPLE

Makes the Milking Easy

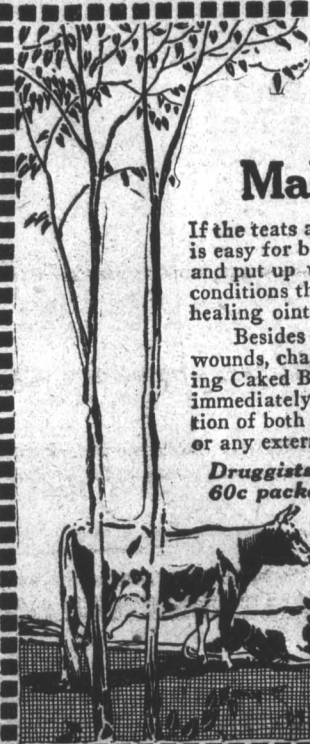
If the teats and udder are healthy and comfortable the milking is easy for both cow and milker. No need to punish the cow and put up with reduced milk flow through sore or diseased conditions that can be so easily removed by using this great healing ointment.

Besides its wonderful soothing and healing effect on wounds, chaps, scratches, etc., Bag Balm has no equal in treating Caked Bag—so common at the calving period. It penetrates immediately and quickly brings about a normal, healthy condition of both teats and udder. Very useful in treating Bunches or any external hurt.

Druggists and Feed Dealers sell Bag Balm, in liberal 60c packages. Be sure to have it on hand always.

Free Booklet, "Dairy Wrinkles" sent on request.

Dairy Association Co.
LYNDONVILLE, VT.



Quality Goods
at Money-Saving Prices
Direct from Factory
Fence, Gate, Roofing,
Paint, Implements,
Silos, Tanks, Troughs, etc.
Write today for Catalog
STANDARD SUPPLY HOUSE
40 W. Logan St., Noblesville, Ind.

Make Money Spare Time

A few counties open for resident farmers, as exclusive selling representatives for high-grade line of Star-O-line Building Products. Liberal arrangements for men who are well known in their locality and enjoy the confidence of their neighbors. No capital investment required. Write for full particulars. Address
Building Supply Department M-100
White Star Refining Co., Detroit, Mich.
Manufacturers Extra-Quality Motor Oil and Star-O-line Products



Michigan's Big Poultry Show

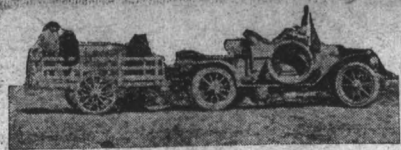
THE poultry show at Detroit brought out many of the best birds in the state and proved that the farmers and fanciers own some fine foundation stock to help in the rejuvenation of the poultry industry. The farmer can learn much about poultry by visiting a show of this kind. The chance of observing and studying the birds has always been valued by men who like poultry for pleasure and profit and the lover of poultry on the farm is inspired by the exhibition and is convinced that there is something beside profit to be gained through the work of rearing pure-bred fowls.

The poultry school conducted by Prof. Burgess is a step in advance and this work will do a great deal to keep the farm poultry breeders and fanciers informed concerning the latest developments in their business. In Mr. E. C. Foreman, M. A. C., is a man who is making his mark in the poultry world. His ability to select high-producing fowls proves that he is a keen student of the poultry business and it is to be hoped that Michigan will have his services for many years to help in the up-building and improving of our farm flocks.

The opportunity of visiting with experienced breeders is worth money to the farmer poultryman. The writer met a Michigan poultryman who has been in the business for thirty years and made it constantly a success. In an hour's visit he told many of the practical points which he gained by experimenting with his poultry and also many of the points which are more or less "inside information" among the breeders or at least points which are not commonly published in the poultry press. Such personal information concerning breeders and breed history, is a stimulation to the poultryman. It is at the poultry show that the farmer has the best chance of the year to learn many of these points which are so valuable and practical.

Study the different breeds at the show and compare them with the home flock. Note the vigor of the show birds and determine if the birds at home are in the same class. It is better to learn about the breeds at the poultry show than to experiment with them at the home farm as it saves money. Many poultrymen lose money because they change from one breed to another in an effort to compare them all on the home farm and after wasting several years they decide which breed they like best and which breed is best for their market requirements. Often this information can be picked up at the poultry show and the right breed selected at the beginning of the business. This is a long step toward success and a fine insurance against discouraging results.

The writer found that the visit to the poultry show this year was a paying investment. It gives a man an increased interest and enthusiasm for the business. Right now the poultry business looks better than at any time for several years and the breeders who attend the shows pick up all poultry information they can find and will be able to take advantage of the increased profits from their farm flocks. Prof. Burgess reports that the results on the college demonstration farms have been favorable. On one farm the labor income was \$1.19 per hour and on another only .02 per hour. The average was about .50 per hour. With results of that kind during war times the chances of success are even greater now if proper methods are observed.



THE FUTURE FOR TRACTORS.

A SHORT time ago one of the little military tractors passed the farm and quickly glided over the hill down the road. It was hauling a line of ammunition carts which were painted with various blending colors to conceal them from the gaze of enemy observers. A short jump of the imagination pictured tractors of the same type and speed hauling loads of produce to the city or possibly loads of peaches and apples from distant orchards to the boat docks where they can be further distributed to consumers in far away cities.

The future of the tractor cannot be told now, but many farmers are thinking of its possibilities in the farming business after the war. In some sections farmers can cooperate and own a partnership tractor. Some believe that this will not always be satisfactory. They feel that one farmer who is able to buy a tractor can succeed by doing his own work first with the machine and then hiring out to plow for his neighbors. In that way a lot of necessary work which takes time, can be finished up with a minimum of energy and then there will be more time to devote to other work.

Down the road a team of horses were sweating at the plow on a warm fall day. The plowman was tired after a long day of following the furrows. Not far away a small tractor was gliding along the field turning up ribbons of soil and laying them over neatly and rapidly. It was not difficult for any farmer to tell which kind of plowing he liked the best.

Some farmers are prejudiced against tractors because they have heard of accidents with the machines and they know of farmers who have apparently wasted time because their tractor has frequently broken down during a busy season. Other farmers are not interested in the tractor because they feel that at least two horses will be necessary on their farm even if they have a tractor.

There are two sides to the question, but that little tractor chugging up over the hill looked very business-like. There will be a great advancement in mechanical farming equipment. Even now the auto trucks occasionally go by loaded with corn fodder, but these trucks are usually owned in the city. When will the farmers own tractors that can plow the soil and market the crops? It has always seemed a long way off but now it looks as if it were coming nearer every day. Practically every community would be benefited if some farmer in the section could own a tractor which he could use for plowing for the neighbors whenever they need and are willing to pay for his services.

R. G. K.

PEDIGREE IN POULTRY.

Gradually poultry breeding is becoming more like live stock breeding. It will not be many years until every buyer of a cockerel to be used in the breeding yard will insist on knowing the sire and dam of the cockerel before he buys the bird. The buyer will also want to know how many eggs the dam of the cockerel produced, and how many eggs were produced by the dam of the sire of the cockerel he is buying. Right now many buyers—some of them farmers, too—are demanding to know what's back of the birds they contemplate purchasing before laying down any money. The day of the scrub rooster in the farm flock has just about passed.

Send for this Free "No Smoking" sign

It may save your barn from burning down

NO SMOKING

USE HAVOLINE OIL It won't smoke

This Blue-and-White Sign is made of sturdy metal and will last for years. Size 9 by 18 inches.

THIS sign guards many of America's leading farms from fire. Send for it today. It is free of charge. Tack it on the outside of your barn, above or beside the door, where it will serve as a constant warning to smokers against entering your barn with lighted pipes, cigars or cigarettes.

You should lose no time in sending for this useful sign. Tomorrow may be too late. Just fill out the coupon and mail it to us. The sign will go to you promptly, absolutely free of charge. It is a handsome blue-and-white sign, 9 by 18 inches. It is made of sturdy metal, and will last for years.

The object of this advertisement is to help you safeguard your barn and its contents. In later advertisements, we want to tell you how Havoline Oil will help save your tractor and automobile from wearing out before their time. One of the grades of Havoline Tractor Oil exactly fills the needs of your tractor, whatever its make, type, or length of service, just as one of the grades of Havoline Oil exactly meets your motor car requirements.

Havoline greases are compounded of Havoline Oil and pure, sweet tallow. Clean to handle and correct in body.

Indian Refining Company, New York

Incorporated

Producers and Refiners of Petroleum

HAVOLINE OIL

REG. U.S. PAT. OFF.

"It makes a difference"

COPYRIGHT

Indian Refining Company, Inc.
242 Madison Avenue, Dept. H.
New York City

Gentlemen:

Please send me at once the free "No Smoking" sign, carriage prepaid, described below.

Name _____

R. F. D. No. _____

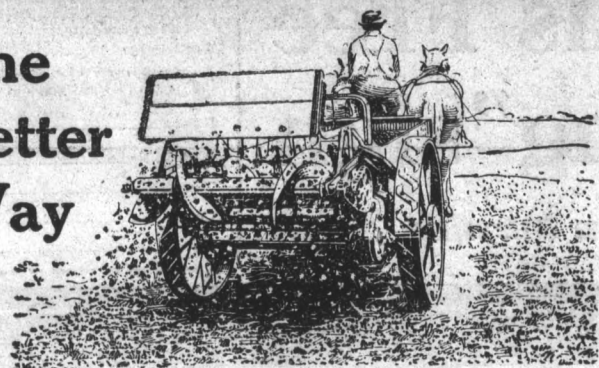
Town _____

County _____

State _____



The Better Way



THE FARMER who can get stable manure to spread on his fields this year and who fails or refuses to take care of it and spread it properly, is losing the chance of a lifetime to make his farm pay handsomely. No farmer can possibly raise too much of any of the staple crops in these times. Increased acreage is pretty nearly out of the question. There is a better, easier, less expensive way to grow bigger crops. Save stable manure, add phosphate as your soil requires, and spread it in a thin, even coat with a widespreading

Low Corn King, Cloverleaf, or 20th Century Manure Spreader.

Begin right after harvest. With one of these machines, and no additional power or help, you can increase immediate yields, and put your soil in better condition for future crops. They are low, light draft, narrow box machines, each made in three handy sizes—small, medium and large. The entire load is spread in 3 to 5 minutes, in an even coat that extends well beyond the rear wheel tracks. See our spreaders or any other machines in the list below at the local dealer's place of business—or write us.

THE FULL LINE OF INTERNATIONAL HARVESTER QUALITY MACHINES

Grain Harvesting Machines	Haying Machines	Belt Machines—Cont.	Dairy Equipment
Binders Push Binders	Mowers Tedders	Cream Separators	Cream Separators
Headers Rice Binders	Side Delivery Rakes	Feed Grinders	(Hand)
Harvester-Threshers	Loaders (All Types)		Cream Separators
Reapers Shockers	Rakes	Power Machines	(Belted)
Threshers	Combination Side Rakes and Tedders	Kerosene Engines	Kerosene Engines
	Stackers	Gasoline Engines	Gasoline Engines
Tillage Implements	Sweep Rakes	Kerosene Tractors	Motor Trucks
Disk Harrows Cultivators	Combination Sweep Rakes and Stackers	Motor Trucks	
Tractor Harrows	Baling Presses	Motor Cultivators	
Spring-Tooth Harrows	Bunchers		
Peg-Tooth Harrows		Corn Machines	Other Farm Equipment
Orchard Harrows		Planters Drills	Manure Spreaders
		Cultivators	Straw Spreading Attach.
Planting and Seeding Machines		Motor Cultivators	Farm Wagons
Corn Planters Corn Drills	Ensilage Cutters	Binders	Farm Trucks
Grain Drills	Husk and Shredders	Ensilage Cutters	Stalk Cutters
Broadcast Seeders	Corn Shellers	Pickers	Knife Grinders
Alfalfa & Grass Seed Drills	Threshers	Husk and Shredders	Tractor Hitches
Fertilizer & Lime Spreaders	Stone, Burr Mills	Shellers	Binder Twine
	Hay Presses		

International Harvester Company of America
(Incorporated)
CHICAGO U S A



How to Tell Potato Diseases

WITH seed, fertilizers, equipment and labor at present high prices the question of planting healthy seed and preventing the spread of diseases becomes of greater importance than ever before to the successful potato grower. Experts in plant breeding have pointed out that the formation of tubers deprives the potato plant of a requisite amount of nutriment and that in this way some of our high-yielding varieties become particularly susceptible to disease. Moreover, the plant formerly grew in isolation and now that we are planting it in large fields we are creating conditions especially favorable for the development and spread of diseases.

Thus we see that if we are to suc-

B—No prominent dead areas on foliage or if present confined to lower leaves.

(a) Leaves wilting or rolling or both.
1. Pronounced wilting of plant generally accompanied by rolling of the leaves.

(1) Part of stalk below ground black and rotten. Plant easily pulled up. Seed piece rotten, usually in plup. Soft rot in some of the tubers.—**BLACK LEG.**

(2) No rot at base of stalk. Seed piece usually sound. Brown discoloration deep in sap tubes at stem end of some tubers.—**WILT DISEASES.**

(b) Leaves more or less rolled without wilting.

(1) Plants of normal size. Rolling



Careful Field Inspection is Essential to Healthy Seed Potatoes.

ceed in growing large crops of potatoes we must do everything possible to create favorable conditions for the growth and perfection of this highly organized plant. It is of no use to claim that the plant is to blame, or that this or that variety is immune to diseases. By selection of those plants which are subject to disease it is probable that we can to a great extent eliminate some of this trouble. At all events it is very important that we have a knowledge of the more common diseases in order that we may present or ward off the attacks. A careful study of the following descriptions of plants attacked by different diseases should prove of great benefit in enabling potato growers to guard against some of these common diseases.

A—Prominent circular or irregular dead areas on foliage which are not confined to lower leaves.

(a) Dead areas not circular or irregular spots within the leaf blade, confined at first to tips and margins of most exposed leaves. May finally involve whole leaf. Dead spots harsh, dry and curling up. Appears only after very warm, sunny weather.—**TIP BURN.**

(b) Dead areas at first circular or irregular spots within the leaf blade or on part of margin. May finally involve whole leaf.

(1) Spots brittle, light brown. Usually patterned with a series of darker rings, one inside the other like a target board.—**EARLY BLIGHT.**

(2) Spots large, water soaked, dark brown when dry. Sometimes with light green margin and showing gray mildew on lower side; abundant in wet weather, sometimes killing foliage completely. Found usually late in season.—**LATE BLIGHT.**

most conspicuous on upper leaves which may show brownish tints but usually no general yellowing. Aerial tubers common. Dry reddish brown scars on stem below ground, on stolons or roots. Many small potatoes common. Found all through year.—**RHIZ-OCTONIA.**

(2) Plants more or less dwarfed. Lower leaves always rolled, leathery, often dying from the tips backwards. Other leaves may also roll. Plants have stiff upright habit or are bushy. Plants almost always pale in color. Yield very small and tubers usually attached close to stem. Found in June, July and August.—**LEAF ROLL.**

(c) Leaves neither rolling nor wilting.

(1) Leaves slightly corrugated and mottled with faint yellowish-green spots. Plant not conspicuously dwarfed except in very severe cases. Found all through season.—**MOSAIC.**

(2) Leaves that are strongly corrugated. Plants extremely dwarfed and resembling curly kale. Leaves dark green with no yellow spots. Dying prematurely.—**CURLY DWARF.**

EDUCATION PAYS.

A survey of 656 farms revealed the following: Of these farmers, 554 had only a district school education, while 102 had received more than that. It was found that the better educated farmers operated thirty-three per cent more land and owned four-fifths of the land they operated, as against three-fifths owned by those with only district school education; they kept one-sixth more stock, worked fourteen per cent more land per workman, and earned seventy-one per cent more clear labor income per year.

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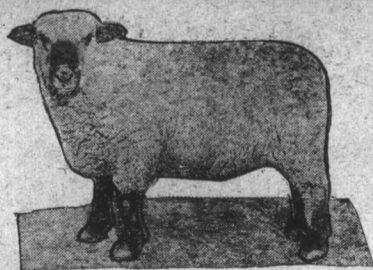
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SHEEP OWNERS GET TOGETHER.

OVER two hundred farmers and sheep owners of Kalamazoo county have organized a sheep owners' association for the purpose of combating the menace of the sheep-killing dog. This association proposes to secure the rigid enforcement of the law regulating dogs now on the statute books, and also intends to bend every effort to secure the passage of a new dog law modeled after the present law of the state of Pennsylvania.

In Schoolcraft township, Kalamazoo county, sheep owners have lost over two hundred sheep in the past eighteen months, and there is now due and unpaid to sheep owners over \$2,000 because of sheep killed by dogs; and the dog fund of that township is more than exhausted, and under the present law it will be several years before the dog fund will contain funds to reimburse the farmers for their losses. And no reimbursement can be made for the damage that a miserable cur does to the sheep not killed.

This association has caused a bill to be introduced into the present session of the legislature revising the law regulating dogs, the new bill being patterned after the dog law of the state of Pennsylvania. The secretary of the association was in Lansing recently and talked with various members, and found a decided feeling that a new law is necessary and that the state of Pennsylvania seems to have the best method. The Department of Agriculture at Washington endorses the Pennsylvania law.

It is to be hoped that farmers and sheep owners all over the state will write to their member of the legislature and urge the passage of proposed new law. The Kalamazoo County Association requests that sheep breeders and owners throughout the state will forward statements of the losses suffered in their communities from dogs, in order that such information can be compiled and used at the present session of the legislature.

Henry M. Kimball, Vicksburg, Mich., is the secretary.

STURGIS COOPS. CHEERFUL.

WITH over a hundred members of the Sturgis Cooperative Association present at an all-day session in Grange Hall in Sturgis recently a review of the business of the year was presented by Secretary-treasurer Clare Bordner, and interesting talks were given by Joe Sturgis and C. L. Harrison Secretary-Treasurer of the Constantine Cooperative Association.

At the all-day session a noon lunch was served and the good eats were dished up under the supervision of Jerome Fox who acted as chef. The following directors were chosen: C. J. Lublow, R. F. Zelt, J. A. Wyborn and E. C. Zable. These directors elected the following officers: President, W. H. Arney; vice-president, G. W. Taylor. As manager for the ensuing year J. D. Sturgis was elected and Clare E. Bordner secretary-treasurer.

The report of Secretary-Treasurer Bordner shows that in the year 1918 the total receipts were \$180,818.40, and there was paid to shippers \$178,960.39. During the year shipments of eight carloads of potatoes and seventy-four decks of stock were made. The stock shipments were made up as follows: Cattle 406; hogs 3,274; calves 432; sheep 842. The report shows a balance of \$674.36 on hand.

Why Tractor Makers Choose Oliver Implements



Scene at National Tractor Demonstration, Showing Tractors Working With Oliver Plows

Every year—at the National Tractor Demonstration—tractors and tractor implements have a public opportunity to prove their merits.

Prospective buyers from all parts of the country are in attendance.

Tractor manufacturers are especially anxious that their products show maximum efficiency.

They realize that their success depends upon the quality of the plowing and seed bed preparation—that the performance of the tractor is often gauged entirely by these facts.

Naturally they select the tractor implements that will work with their tractor to the best possible advantage.

Actual test has proved to them that these implements are—Oliver.

This increasing recognition of Oliver by tractor manufacturers is best evidenced by the records of successive tractor demonstrations.

At the National Tractor Demonstration in 1913 there was but one tractor that pulled an Oliver implement. On the strength of that single showing, and the Oliver organization's unequalled equipment for the task in hand—keeping pace with the great tractor industry—the popularity of the Oliver line has steadily risen.

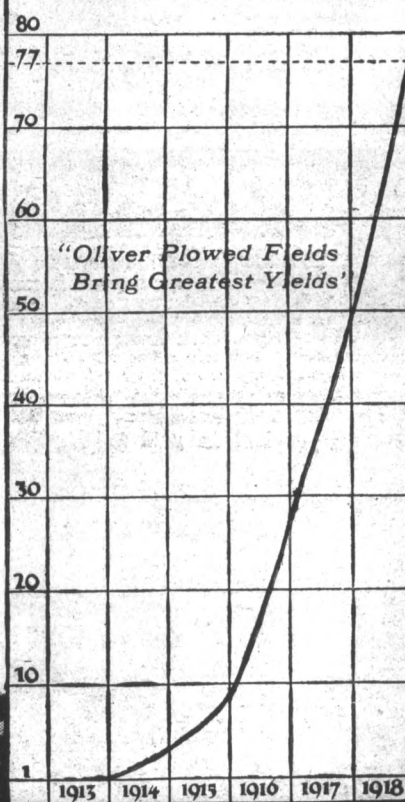
Dominance was reached in 1918 when 85% of the tractors at the National Tractor Demonstration at Salina, Kansas, pulled Oliver tractor implements.

Endorsement so unanimous and authoritative can admit of only one verdict: Oliver Plows are the most advantageous for use with tractors—and the best seed bed preparation is secured through the use of Oliver tractor implements.

Oliver Chilled Plow Works South Bend, Indiana



Chart showing number of tractors pulling Oliver implements at National Demonstration 1913-1918.



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Tractor Implements

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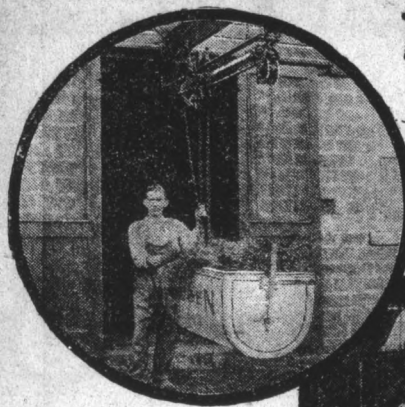
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Queries Answered

TANKAGE FOR YOUNG PIGS.

How much tankage should I feed a
four-months-old pig? Am feeding a
slop of one-third bran, two-thirds oats
and corn twice a day, with two ears of
corn at noon. Have three pigs and
wish merely to keep them growing
until pasture.

Van Buren Co. Mrs. E. J. J.

The two most important factors to
be considered in feeding pigs are econ-
omy in gains and rapidity of gains.
Tankage has been demonstrated to be
the cheapest and most generally sat-
isfactory help in attaining these re-
sults. The question of rapidity of
gains must not be overlooked in these
days of high-priced feed stuffs.

Though it has been demonstrated
that tankage is an excellent and econ-
omical feed, it is easily possible to
be wasteful in feeding it. Pigs will
eat and digest two or three times as
much of it as they can use to advan-
tage. Consequently it becomes very
easy to overfeed pigs on this concen-
trate. If they are thus overfed their
vitality will be reduced, and they will
be rendered more susceptible to chol-
era or other diseases. There are a
number of grades of tankage, and the
proper amount to feed must be deter-
mined by the percentage of protein
which each grade contains. The pro-
tein content in the different grades of
tankage runs from thirty to sixty per
cent. Only a sufficient quantity should
be fed, in accordance with the age of
the animals.

With the feeds you have I would
suggest feeding one part of fifty per
cent protein tankage to twelve parts
of corn and oats. Bran is not an eco-
nomical food for growing pigs, espe-
cially at present prices. If the tank-
age contains less than fifty per cent
protein more of it should be fed. After
the pigs have access to good pastures
the tankage may be omitted from the
ration.

W. M. K.

GRAIN WITH CLOVER AND SILAGE.

I have Jersey cows giving about fif-
teen pounds of milk, testing 4.5 per
cent butter-fat, a day from a ration of
clover hay and corn silage. They fresh-
ened in November, and seem active
and in good health but are losing flesh.
Would you advise me to feed a grain
ration, and if so, what kinds of grain
and how much per cow per day?

Monroe Co. C. J. M.

Clover hay and corn silage are ex-
cellent feeds, but they are too bulky
to produce good milk yields. You
should feed some grain to make up a
greater proportion of easily digestible
nutrients and maintain the vigor and
flesh condition of your cows. Give
them all of the clover hay they will
clean up twice a day and about thirty
pounds of silage per day.

At present feed prices a grain ration
made up of 400 pounds of ground oats,
200 pounds of bran, 200 pounds of cot-
tonseed meal, 200 pounds of oilmeal
should give good results at a reason-
able cost. Feed one pound of this mix-
ture for each four pounds of 4.5 per
cent butter-fat milk produced by each
cow. Some feeders recommend one
pound of grain for each three pounds
of milk testing above four per cent
butter-fat, which is sound advice, in
case your roughage is not of the best
kinds, but with good clover hay and
corn silage the lighter grain ration
should give equally as good results. In
case you had timothy hay and corn

silage it would undoubtedly pay to
feed more grain to cows that freshen-
ed in November and were producing
milk testing 4.5 per cent butter-fat. At
present prices of hay and grain feeds
one must feed a ration pretty well bal-
anced as regards bulk and concen-
trates, as well as nutritive elements,
if one succeeds in deriving full profits
from his cows and feed stuffs.

W. M. K.

HENS NOT LAYING.

What is the trouble with my hens?
I bought nine pure-bred White Leg-
horns last August, one year old last
spring, had a 200-egg record. I also
bought six Barred Rock pullets and
six Rhode Island Red pullets hatched
in April and May last. Have a good
warm coop. Feed plenty of corn, oats,
bran, tankage and oyster shells. Give
plenty of fresh water. The Leghorns
have not laid since last August and
as yet the pullets have not laid. Would
you advise putting a cockerel in with
them?

St. Joseph Co.

C. C. C.

The White Leghorn hens from two-
hundred-egg stock were probably forced
for egg production until the owner
knew that they were in need of a
long rest. He sold them and they have
had a chance to renew their vigor and
they may make first-class breeders
this spring. When year-old hens which
have been laying heavily go into the
moult early in the fall it often takes
them until early spring to return to
laying. The change of ownership also
brings a change in housing and feed-
ing and this is apt to delay their re-
turn to laying. If they have been re-
ceiving the rations above mentioned in
a dry, well-ventilated house, they will
be apt to begin laying soon. Breeders
who sell year-old hens to beginners in
the poultry business should not give
them the impression that such hens
will lay many eggs before the next
spring or at least until late in winter.
The beginner who fights for winter
eggs with old hens often finds the
campaign discouraging.

The Barred Rock and Rhode Island
Red pullets cannot be expected to lay
eggs until they have reached maturity
which will be at about eight months
of age if they have been properly de-
veloped. Some pullets do not lay until
the spring after they are hatched, due
to late hatching or uneven growth
during the preceding summer. Some
pullets are stunted or partially stunted
by crowding or underfeeding and
such birds lay few if any winter eggs.
If these pullets are fairly good birds
the fact that they have not laid eggs
before January first should not be too
discouraging, because undoubtedly they
will soon begin to lay.

As these hens consist of three dif-
ferent breeds we would not place a
cockerel with all of them and use the
eggs for hatching. If the Leghorns are
of a two-hundred-egg strain, why not
purchase a bred-to-lay White Leghorn
cockerel and raise pure-bred Leghorns.
If the Rocks or Reds are liked the
best, buy a Rock or Red cockerel and
use it with the corresponding breed of
hens. There is little progress made
with any flock of fowls unless they are
pure-bred. Yearling hens are the best
for breeding stock. The chicks which
will be hatched from their eggs will
be more vigorous than the chicks from
pullet eggs. We would use those
year-old bred-to-lay White Leghorns as
the foundation for a good flock.

R. G. K.

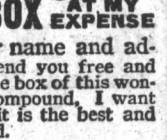
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derful healing compound. I want
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A Reply to Secretary Reed

I HAVE just finished reading the article, "New Era Confronts Our Dairymen," which was published in the last issue of the Michigan Farmer, January 11, 1919, and am very much dissatisfied with the results of the commission meeting as it seems to me to be anything but a fair deal to the producer. Would be pleased to have you publish what I have to say.

In the Detroit Milk Commission I find represented politics, financial interests, homes, city labor, and distributors, but where does the producer come in? Mr. Reed may be there to represent the farmer, but with due justice to Mr. Reed, he cannot place the production side and cost before the commission as could the man who actually has to do the work.

As far as the consumers of Detroit are concerned I am perfectly willing that they should have a stable supply of milk at a reasonable price. But I am not willing, nor is it fair, that the farmer produce this milk at a loss.

The distributors came to this meeting after being "coaxed" with a "big holler" about not making any money in December. Did the producer make any money on his milk in December? No! To apply business principles and figure up investment, up-keep, overhead expenses, etc., he did not. Yet who was there at that meeting to make a plea in his behalf? The commission lowered the price of milk in the face of advancing price of feeds. To smooth matters over it was determined to keep up the prices for the next few months in order to make up for the lowered price. Now heretofore it has always been the policy of distributors to decide each month by itself; but now they want to consider several months since it is to their advantage. Besides, they are simply "determined" to do this. This determination will be considerably weakened in a short time.

Also the distributors agreed to better prices for the months of July, August and September, providing that conditions remain normal in Detroit, but there is the loop-hole. It needs no prophet to foretell now, that next summer business conditions will be adverse to the \$4.00 price. And then to think that Mr. Reed, himself, hits back to that old threadbare joke, "That the farmer doesn't handle his business to make it pay and hasn't good enough cows." Why didn't Mr. Reed tell the distributors that if they didn't make any profit in December it was their own fault because their business was not managed efficiently? That would have been just as fair and just as the way he tells the farmer. I happen to know that one Detroit distributor discharged their efficiency expert, who saved the plant thousands of dollars, because he discovered big leaks among the officials. Let them manage their plants more efficiently, they can then make a profit!

Mr. Reed tells about the dairy feed he found for the producer, which was a big step in the right direction. But he says that the farmers bought small amounts at retail rather than accept the offer, which admits that the farmers did not have capital with which to buy only a small amount of feed at a time. The farmer must have a profit from his milk before he can get the

LaCrosse TRACTOR

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The new La Crosse Tractor is the standard three plow tractor. It contains every feature which has made the La Crosse Happy Farmer Tractor so successful. It is the tractor which is up to date in every respect.

The tractor situation today is much like the automobile situation a year ago. The man who bought a standard automobile a year ago, can sell it today for more than he paid for it. To purchase a standard La Crosse Tractor today is to purchase a tractor which is not only the most practical type of farm machine but which is in addition a good financial investment.

12-24 Horsepower for \$1250

The new La Crosse Tractor at its minimum rating offers you 12-24 horsepower for \$1250, or practically one drawbar horsepower for every \$100 invested. In the La Crosse Tractor you secure full three plow capacity under all ordinary conditions, with a guaranteed drawbar pull of 2000 pounds.

In buying a La Crosse Tractor you profit directly by the size and strength of this Company. Our immense buying and manufacturing power make it possible for us to offer you maximum power for the minimum price at which a successful tractor can be built.

The La Crosse is the real one-man tractor. You can run it, together with La Crosse Tractor Implements,

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The La Crosse is the tractor which is self-guiding in the furrow and which turns in its tracks to right or left within a radius of nine feet. With its wide tread and perfect balance you can't upset it. Either front wheel will clear an obstruction 23 inches in height. Its double brake differential makes it especially fitted for hillside work.

The La Crosse Tractor is the perfect kerosene-burning tractor. It is exceptionally economical on fuel, holding the year's lowest average record for fuel consumption; does not overheat and is in every way reliable.

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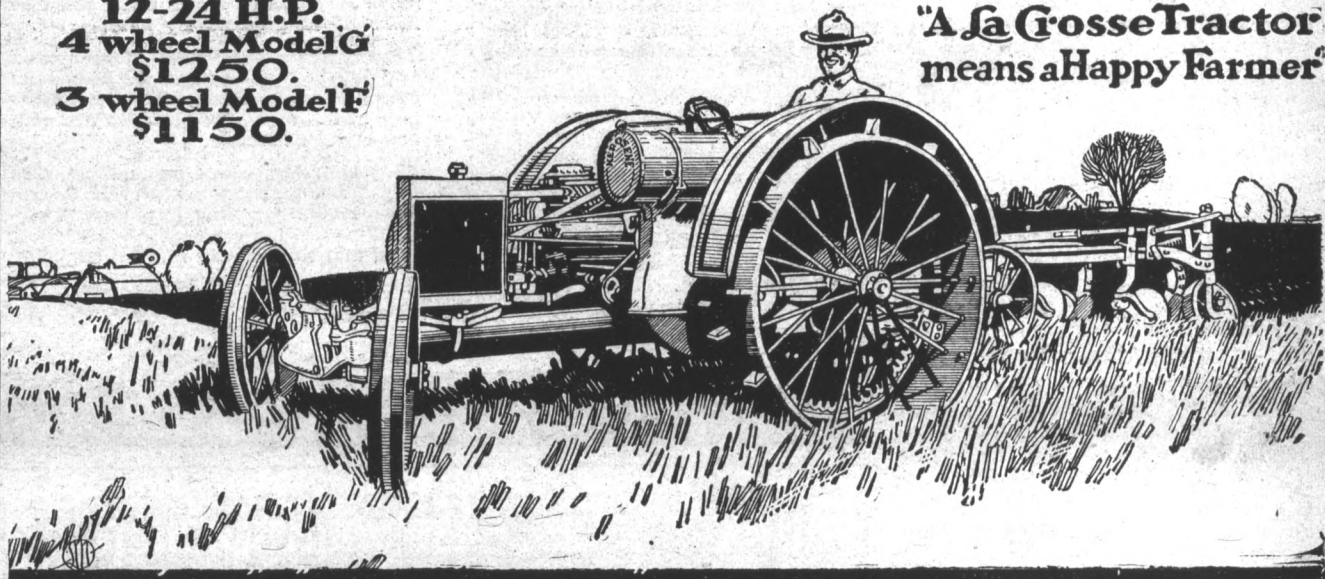
Dealer. You cannot see him too soon if you hope to own a La Crosse Tractor this season, as the demand for the La Crosse Tractor is greater than the supply. Write now.

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DEPARTMENT 9232

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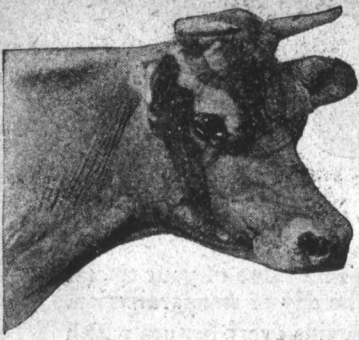
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Mr. Reed tells of sixty-five failures of distributors in Detroit, but I can tell him of a thousand farmers here in Michigan who simply couldn't make a living off from the farm. He cites the story of one man and his farm. He is one among a thousand and it is safe to say that to acquire what he has, he has had to work about sixteen hours a day, and deny himself and family of the comforts of life. And the chances are that his wife had to "help" even though she did have seven children for which to care.

Now I have nothing against the milk producers' association. It has done some commendable work and I hope that it does more. But I do hate to see it kneel before the distributors and beg for their cooperation and a fair price, when it really should know the cost and reasonable profit on a quart of milk and go to the commission meetings as did the distributors, and say: "This price we must have in order to make a living and insure you a stable supply of milk." I can see no other fair or just principle involved except this. Many young men of college and university agricultural training are now going to the farms. They know the latest and most efficient methods but they must either borrow beyond the limit or plod along for years in the old way, because they have not the capital with which to improve. Give these men the cost and small profit on their milk and other produce and you will soon find all of their cows of the best pure-bred stock and their equipment up-to-date. But as it is, they must grin away for long hours and take for their products what the buyer will pay. I believe a better day is dawning when the farmers will be organized to demand the cost and a profit on their products which is their just due.

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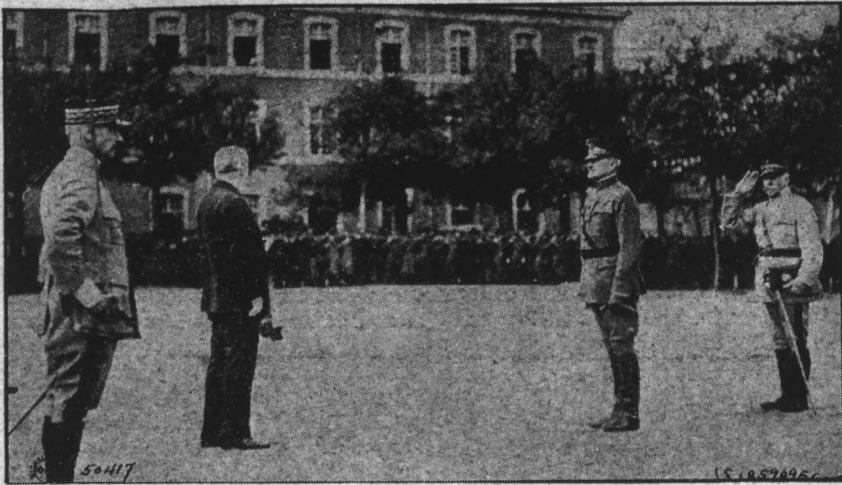
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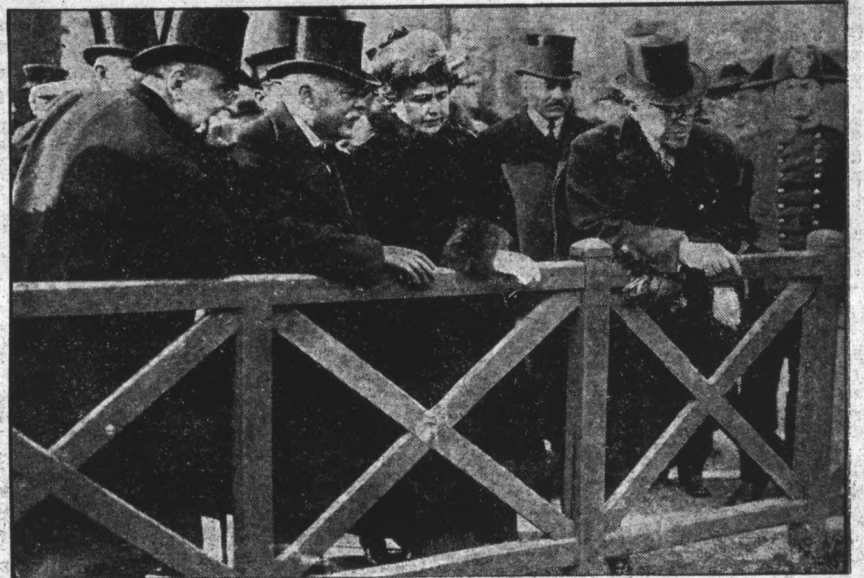
General Pershing Receives Grand Cross of Legion of Honor of France.



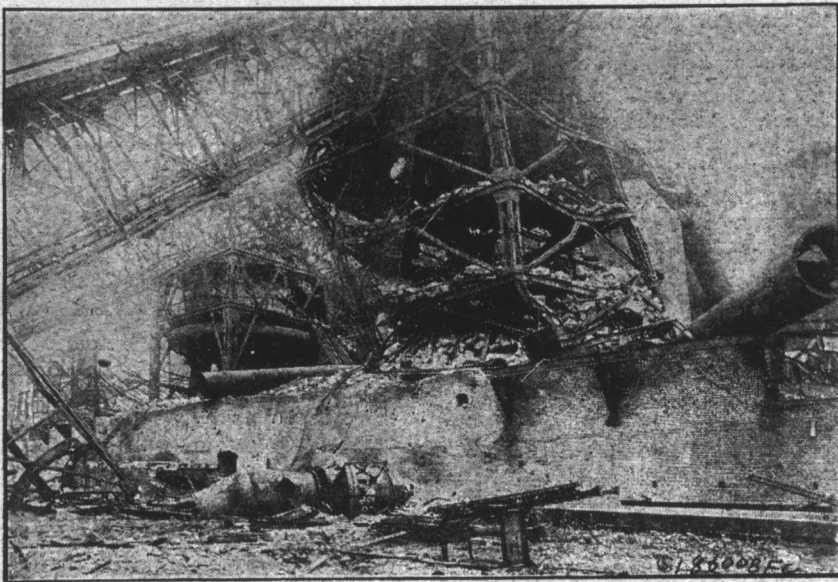
Army and Navy Men Discard Khaki and Blue for Civilian Clothes.



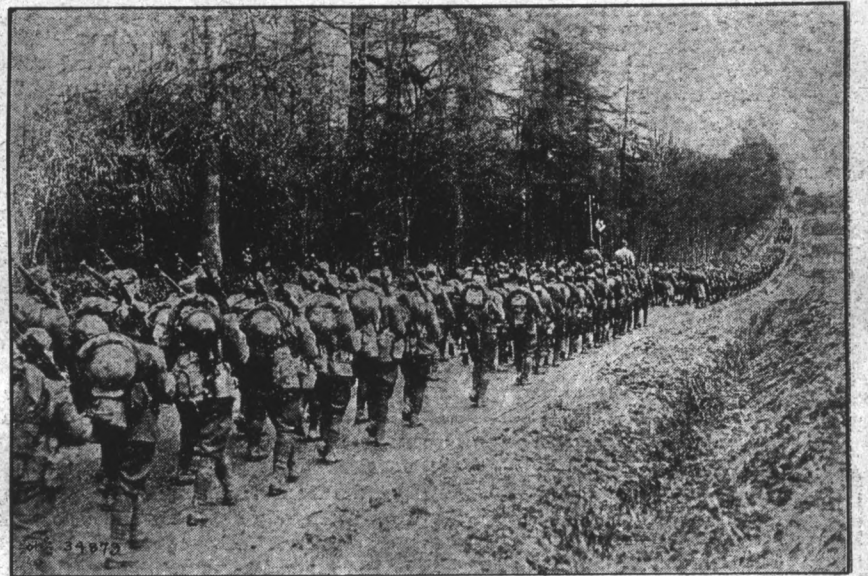
Regiment of American Artillery Ferrying Moselle River in March to Rhine.



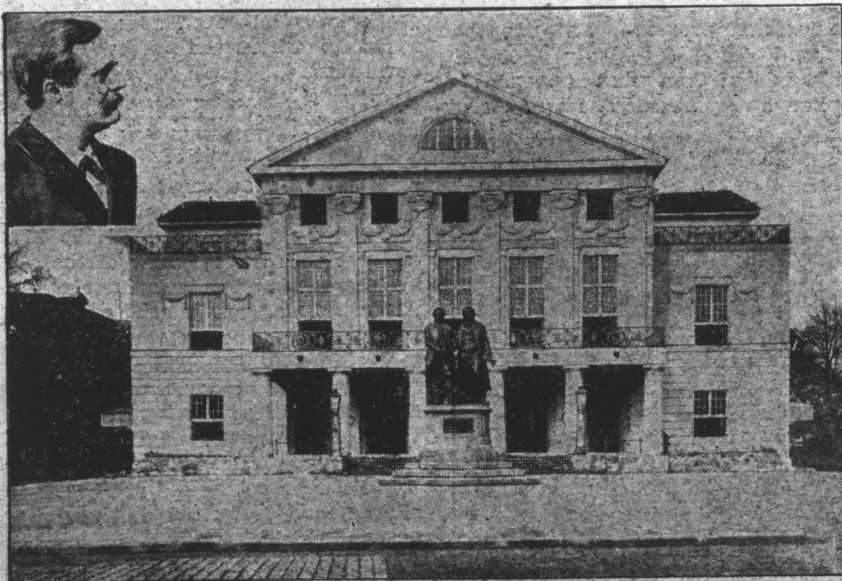
President Wilson and Mrs. Wilson Visit Grave of Garibaldi in Milan, Italy.



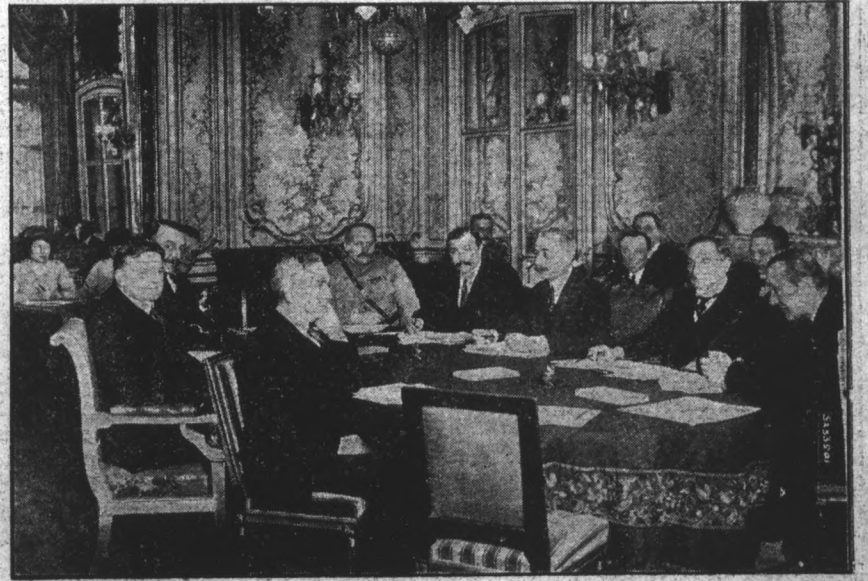
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"Beyond the Frontier"

By RANDALL PARRISH

I drew back, almost frightened, half inclined to flee before he could attain the summit. What could I say? How could I meet him? What if Cassion had followed me up the path, or had despatched one of his men to spy upon my movements? Ever since leaving Quebec my one hope had been this interview with De Artigny, yet now that it was imminent I shrank from it, in actual confusion, my heart fluttering my mind blank, yet I was not a coward, and did not run, but waited, feeling my limbs trembling under me, and listening for the first sound of his approach.

He must have scrambled straight up the steep face of the bluff, for it could have been scarcely more than a minute, when I heard him crunching a passage through the bushes, and then saw him emerge above the edge. Clinging to a tree limb, his eyes sought eagerly to locate me, and when I stepped forward, he sprang erect, and bowed, jerking his hat from his head. There was about his action the enthusiasm of a boy, and his face glowed with an eagerness and delight which instantly broke down the barrier between us.

"You waved to me?" he exclaimed. "You wished me to come?"

"Yes," I confessed, swept from my guard by his enthusiasm. "I have been anxious to confer with you, and this is my first opportunity."

"Why, I thought you avoided me," he burst forth. "It is because I felt so that I have kept away."

"There was nothing else I could do but pretend," I exclaimed, gaining control over my voice as I spoke. "My every movement has been watched since we left Quebec; this is the first moment I have been left alone—if, indeed, I am now." And I glanced about doubtfully into the shadows of the forest.

"You imagine you may have been followed here? By whom? Cassion?"

"By himself, or some emissary. Pere Allouez has been my jailor, but chances to be disabled at present. The Commissaire permitted me to climb here alone, believing you to be safely camped above the rapids, yet his suspicions may easily revive."

"His suspicions!" the Sieur laughed softly. "So that then is the trouble? It is to keep us apart that he bids me make separate camp each night; and assigns me to every post of peril. I feel the honor, Mademoiselle, yet why am I especially singled out for so great a distinction?"

"He suspects us of being friends. He knew I conferred with you at the convent, and even believes that you were hidden behind the curtain in the Governor's office."

"Yet if all that be true," he questioned, his voice evidencing his surprise. "Why should our friendship arouse his antagonism to such an extent? I cannot understand what crime I have committed, Mademoiselle. It is all mystery, even why you should be here with us on this long journey? Surely you had no such thought when we parted last?"

"You do not know what has occurred?" I asked, in astonishment. "No one has told you?"

"Told me! How? I have scarcely held speech with anyone but the Algonquin chief since we took to the water. Cassion has but given orders, and Chevet is as much as an oyster. I endeavored to find you in Montreal, but you were safely locked behind gray walls. That something was wrong I felt convinced, yet what it might be no one would tell me. I tried questioning

the pere, but he only shook his head, and left me unanswered. Tell me, then, Mademoiselle, by what right does this Cassion hold you as a captive?"

My lips trembled, and my eyes fell. Yet I must answer.

"He is my husband, Monsieur."

I caught a glimpse of his face, picturing surprise, incredulity. He drew a sharp breath, and I noted his hand close tightly on the hilt of his knife.

"Your husband! that cur! Surely you do not jest?"

"Would that I did," I exclaimed, losing all control in sudden wave of anger. "No, Monsieur. It is true; but listen. I supposed you knew; that you had been told. It is hard for me to explain, yet I must make it all plain for you to understand. I do not love the man, his very presence maddens me, nor has the creature dared as yet to lay hand on my person. See; I carry this," and I drew the pistol from my dress, and held it in my hand. "Chevet loaned it me, and Cassion knows I would kill him if he ventured insult. Yet that serves me little, for my opposition only renders the man more determined. At Quebec I was but a plaything, but now he holds me worth the winning."

"But why did you marry him, then?"

"I was coming to that, Monsieur. You overheard what was said in La Barre's office about—about my father's property?"

"Ay! although it was not all clear to me. Captain la Chesnayne had lost his estates, confiscated by the Crown; yet before his death these had been restored to him by the King."

"Yes, but the report of the restoration had never been made to his rightful heirs. The papers had been held back and concealed, while those in authority planned how to retain possession. Cassion was chosen as an instrument, and sought my hand in marriage."

De Artigny smothered an oath, his eyes darkening with anger.

"It was to further this scheme that he induced Chevet to announce our engagement, and drive me to consent. Once my husband the fortune was securely in his hands—indeed, I need never know its existence; nor would Chevet suspicion the trick. Yet, as I see it now, La Barre had no great faith in the man he had chosen, and thought best to test him first by this journey to St. Louis. If he proved himself, then on his return, he was to have the reward of official position and wealth. I was but a pawn in the game, a plaything for their pleasure."

My voice broke, and I could scarcely see through the tears in my eyes, but I felt his strong hand close over mine, the warm pressure an unspoken pledge.

"The dogs! then what happened?"

"You know, already. I was discov-

ered behind the curtain, when you escaped through the open window. They were not certain I was not alone there as I claimed, but compelled me to confess what I had overheard. La Barre was quick to grasp the danger of discovery, and the only method by which my lips could be closed. By threat he compelled me to marry Francois Cassion, and accompany him on this journey into the wilderness."

"The ceremony was performed by a priest?"

"By Pere le Guard, the Governor's chaplain."

"And Hugo Chevet, your uncle? Did he remain silent, make no protest?"

I gave a gesture of despair.

"He? Never did he even conceive what occurred, until I told him later on the river. Even now I doubt if his sluggish brain has grasped the truth. To him the alliance was an honor, an opening to possible wealth in the fur trade through Cassion's influence with La Barre. He could perceive nothing else except his good luck in thus riding himself of the care of a poor niece who had been a sorry burden."

"But you explained to him?"

"I tried to, but only to regret the effort. Giant as he is physically, his intellect is that of a big boy. All he can conceive of is revenge—a desire to crush with his hands. He hates Cassion, because the man has robbed him of the use of my father's money; but for my position he cares nothing. To his mind the wrong has all been done to him, and I fear he will brood over it until he seeks revenge. If he does he will ruin everything."

De Artigny stood silent, evidently in thought, endeavoring to grasp the threads of my tale.

"How did you attain the summit of this bluff?" he questioned at last.

"Yonder; there is a deer trail leading down."

"And you fear Cassion may follow?"

"He will likely become suspicious if I am long absent, and either seek me himself, or send one of his men. This is the first moment of freedom I have experienced since we left Quebec. I hardly know how to behave myself."

"And we must guard it from being the last," he exclaimed, a note of determination, and leadership in his voice. "There are questions I must ask, so that we may work together in harmony, but Cassion can never be allowed to suspect that we have communication. Let us go forward to the end of the trail where you came up; from there we can keep watch below."

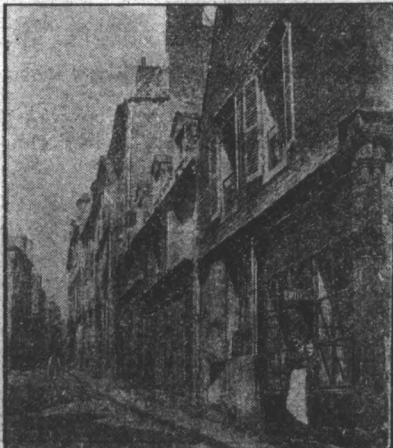
He still grasped my hand, and I had no thought of withdrawing it. To me he was a friend, loyal, trustworthy, the one alone to whom I could confide. Together we clambered over the rough rocks to where the narrow cleft led downward.

CHAPTER XII.

On the Summit of the Bluff.

SECURELY screened from observation by the low growing bushes clinging to the edge of the bluff, and yet with a clear view of the cleft in the rocks half way to the river, De Artigny found me a seat on a hummock of grass, but remained standing himself. The sun was sinking low, warning us that our time was short, for with the first coming of twilight I would certainly be sought, if I failed to return to the lower camp.

For a moment he did not break the silence, and I glanced up, wondering why he should hesitate. His face was grave, no longer appearing, as was its wont, young and careless, but marked by thought and perplexity. Something



In a French Village.

strong and earnest in the character of the man, brought forth by this emergency, seemed to stamp itself on his features. If I had ever before imagined him to be a mere reckless youth, with that moment such conception vanished, and I knew I was to rely on the experience of a man—a man trained in a rough wilderness school, yet with a mind and heart fitted to meet any emergency. The knowledge brought me boldness.

"You would question me, Monsieur," I asked doubtfully. "It was for that you led me here?"

"Yes," instantly aroused by my voice but with eyes still scanning the trail. "And there is no time to waste, if I am to do my part intelligently. You must return below before the sun disappears, or Monsieur Cassion might suspect you had lost your way. You have sought me for assistance, counsel perhaps, but this state of affairs has so taken me by surprise that I do not think clearly. You have a plan?"

"Scarcely that, Monsieur. I would ascertain the truth, and my only means of doing so is through a confession by Francois Cassion."

"And he is too cold-blooded a villain to ever acknowledge guilt. To my mind the methods of Chevet would be most likely to bring result."

"But not to mine, Monsieur," I interrupted earnestly. "The man is not so cold-blooded as you imagine. Arrogant he is, and conceited, deeming himself admired and envied by all especially my sex. He has even dared boast to me of his victims. But therein lies his very weakness; I would make him love me."

He turned now, and looked searchingly into my face, no glimpse of a smile in the gray eyes.

"Pardon; I do not understand," he said gravely. "You seek his love?"

I felt his manner a rebuke, a questioning of my honesty, and swift indignation brought the answering words to my lips.

"And why not pray? Must I not defend myself—and what other weapons are at hand? Do I owe him kindness; or tender consideration? The man married me as he would buy a slave."

"You may be justified," he admitted regretfully. "Yet how is this to be done?"

I arose to my feet, and stood before him, my face uplifted, and, with one hand, thrust aside the shade of my hat.

"Monsieur, deem you that impossible?"

His lips parted in a quick smile, revealing the white teeth, and he bowed low, flinging his hat to the ground, and standing bare-headed.

"Mon Dieu! No! Monsieur Cassion is to be congratulated. Yet it was my thought you said yonder that you despised the man."

"I do; what reason have I to feel otherwise? Yet there lies my strength in this battle. He laughs at women, plays with them, breaks their hearts. It is his pride and boast, and his success in the past has ministered to his self-conceit. He thought me of the same kind, but has already had his lesson. Do you not know what that means to a man like him? More than ever he will desire my favor. A week back, he cared nothing; I was but a plaything, awaiting his pleasure; his wife to be treated as he pleased. He knows better now, and already his eyes follow me as though he were my dog."

"And that then is why you send for me—that I may play my part in the game?"

I shrugged my shoulders, yet there was doubt in my eyes as I faced him.

"Is there harm in such play, Monsieur," I asked innocently, "with so important an end in view? 'Tis not that I seek amusement, but I must find out where this King's pardon is hidden, who concealed it, and obtain proof of the fraud which compelled my marriage. My only hope of release lies in compelling Francois Cassion to confess

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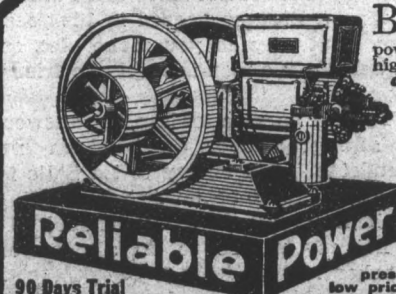
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all he knows of this foul conspiracy. I must possess the facts before we return to Quebec."

"But of what use?" he insisted. "You will still remain his wife, and your property will be in his control. The church will hold you to the marriage contract."

"Not if I can establish the truth that I was deceived, defrauded, and married by force. Once I have the proofs in my hands, I will appeal to Louis—to the pope for relief. These men thought me a helpless girl, friendless and alone, ignorant of law, a mere waif of the frontier. Perhaps I was, but this experience has made of me a woman. In Montreal I talked with the Mother Superior, and she told me of a marriage in France where the pere officiated under threat, and the pope dissolved the ties. If it can be done for others, it shall be done for me. I will not remain the wife of Francois Cassion."

"Yet you would make him love you?"

"In punishment for his sins; in payment for those he has ruined. Ay! 'tis a duty I shall not shrink from, Monsieur de Artigny, even although you may deem it unwomanly. I do not mean it so, nor hold myself immodest for the effort. Why should I? I but war against him with his own weapons and my cause is just. And I shall win whether or not you give me your aid. How can I fail, Monsieur? I am young, and not ill to look upon; this you have already confessed; here in this wilderness I am alone, the only woman. He holds me his wife by law, and yet knows he must still win me. There are months of loneliness before us, and he will not look upon the face of another white woman in all those leagues. Are there any French of my sex at Fort St. Louis?"

"No."

"Nor at St. Ignace, Pere Allouez assures me. I shall have no rival then in all this wilderness; you think me harmless, Monsieur? Look at me, and say."

"I do not need to look; you will have your game, I have no doubt, although the final result may not prove what you desire."

"You fear the end?"

"It may be so; you play with fire, and although I know little of women, yet I have felt the wild passions of men in lands where there is no restraint of law. The wilderness sees a great many tragedies—fierce, bitter, revengeful deeds—and 'tis best you use care. 'Tis my belief this Francois Cassion might prove a devil, once his heart was tricked. Have you thought of this?"

I had thought of it, but with no mercy in my heart, yet as De Artigny spoke I felt the ugliness of my threat more acutely, and, for an instant, stood before him white-lipped, and ashamed. Then before me arose Cassion's face, sarcastic, supercilious, hateful, and I laughed in scorn of the warning.

"Thought of it!" I exclaimed, "yes, but for that I care nothing. Why should I, Monsieur? Has the man shown mercy to me, that I should feel regret because he suffers? As to his revenge, death is not more to be dreaded than a lifetime passed in his presence. But why do you make plea on his behalf—the man is surely no friend of yours?"

"I make no plea for him," he answered, strangely sober, "and claim no friendship. Any enemy to La Salle is an enemy to Rene de Artigny; but I would front him as a man should. It is not my nature to do a deed of treachery."

"You hold this treachery?"

"What else? You propose luring

him to love you, that you may gain confession from his lips. To attain this end you barter your honesty, your womanhood; you take advantage of your beauty to enslave him; you count as ally the loneliness of the wilderness; ay! and, if I understand aright, you hope through me to awaken the man's jealousy. Is this not true?"

I drew a quick breath, my eyes staring into his face, and my limbs trembling. His words cut me like a knife, yet I would not yield, would not even acknowledge their truth.

"You are unjust, unfair," I burst forth impetuously. "You will see but the one side—that of the man. I cannot fight this battle with my hands, nor will I submit to such wrong without struggle. He has never thought to spare me, and there is no reason why I should show him mercy. I wish your good will, Monsieur, your respect, but I cannot hold this plan which I propose as evil. Do you?"

He hesitated, looking at me with such perplexity in his eyes as to prove his doubt.

"I cannot judge you," he admitted at last, "only that is not the way in which I have been trained. Neither will I stand between you and your revenge, nor have part in it. I am your friend—now, always. In every honorable way I will serve you, and your cause. If Cassion dares violence, or insult he must reckon with me, although I faced his whole company. I pledge you this, but I will not play a part, or act a lie even at your request."

"You mean you will not pretend to care for me?" I asked, my heart leaden at his words.

"There would be no pretense," he answered frankly. "I do care for you, but I will not dishonor my thought of you by thus deliberately scheming to outwit your husband. I am a man of the woods, the wilderness; not since I was a boy have I dwelt in civilization, but in all that time I have been companion of men to whom honor was everything. I have been comrade with Sieur de la Salle, with Henri de Tonit, and cannot be guilty of an act of treachery even for your sake. Perchance my code is not the same as the perfumed gallants of Quebec—yet it is mine, and learned in a hard school."

He went on quietly, "there are two things I cannot ignore—one is, that I am an employee of this Francois Cassion, pledged to his service by my own free will; the other is, that you are his wife, joined to him by Holy Church and although you may have assumed those vows under coercion, your promise is binding. I can but choose my path of duty, and abide therein."

His words hurt, angered me; I lacked power of expression, the ability to grasp his full meaning and purpose.

"You—you desert me then? You—you leave me to this fate?"

"I leave you to reconsider your choice of action," he returned gravely, his hat still in hand, his lips unsmiling. "I do believe your womanhood will find a better way to achieve its liberty, but what that way is I must trust you to discover. I am your friend Adele, always—you will believe that?"

I did not answer; I could not because of the choking in my throat, yet I let him grasp my hand. Once I raised my eyes to his, but lowered them instantly in strange confusion. Here was a man I did not understand, whose real motives I could not fathom. His protest had not yet penetrated my soul and I felt toward him, an odd mixture of respect and anger. He released my hand, and turned away, and I stood motionless as he crossed the open space between the trees. At the edge of the bluff he paused and glanced about, lifting his hat in gesture of fare-

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well. I do not think I moved, or made response, and an instant later he was gone.

I know not how long I stood there staring into vacancy, haunted by regret, tortured by fear and humiliation. Slowly all else crystallized into indignation, with a fierce resolve to fight on alone. The sun sank, and all about me clung the purple twilight, yet I did not move. He had been unjust, unfair; his simple code of the woods could not be made to apply to such a situation as this of mine.

I had a right to use the weapons of womanhood in my own defense. Ay! and I would; and whether voluntary, or not, this spotless knight of the wilderness should be my ally. Let him pretend to high virtue, yet surely under that outer armor of resolve there beat the heart of a man. He meant all he said; he was honest in it; not once did I doubt that, yet his apparent indifference, his seeming willingness to leave me to fate, and Cassion, was all assumed.

That one glimpse I had into his eyes told me this in a sudden revelation stronger than any words. I smiled at the recollection, the sense of power reawakening in my heart. He did care—no less than I cared, and this knowledge gave me the weapon I needed, and the courage to use it.

I heard no sound of warning, yet as I turned to retrace my way to the camp below, I became suddenly aware of the presence of Cassion.

(Continued next week).

The Farmer's Library

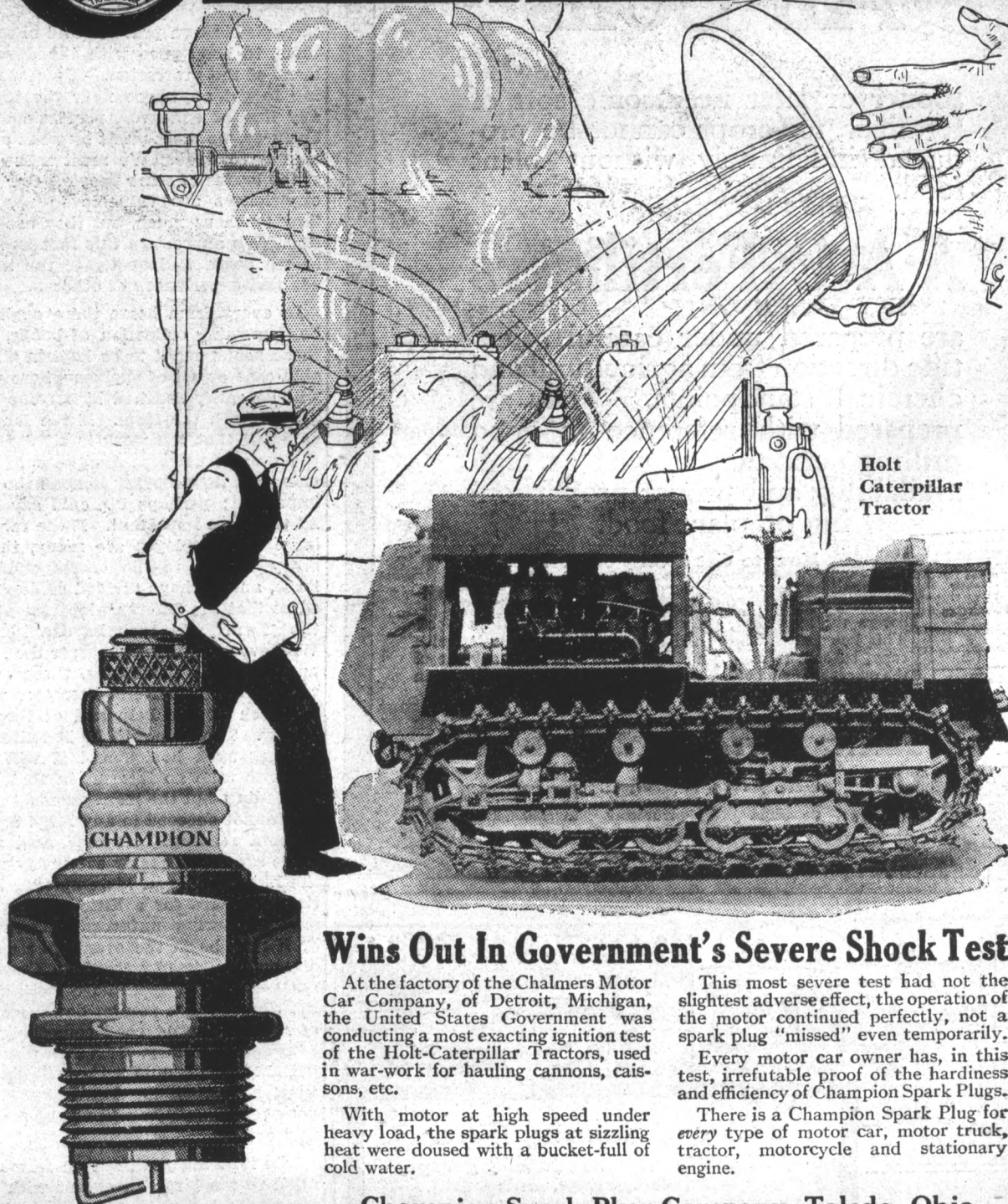
YOU perhaps are the one farmer in a hundred who appreciates the value of agricultural literature and spends more or less money every year to add to his collection of agricultural books. You may realize the advantage of having at hand the collected ideas of other men who have made a study of managing a farm, and yet it is likely that you do not regard what agricultural literature you have in the light of a library. Perhaps nothing is gained by calling your books a library, and yet I believe it does give added importance to it to allow it that dignity. And more than that, if you habitually view your business literature from that standpoint, you will be more likely to give it the care and attention it deserves.

A miscellaneous aggregation of books scattered here and there around the house or office will fail to attract the attention the books deserve either as individuals or as a class. It is left for each book to make its own appeal alone, and probably each book will be lost sight of much of the time because there is no place where it belongs. The lawyer, the doctor and the preacher, each has a library built up for the benefit of his profession. He has a place for his books, and the books are kept there in good order so that he can find what he wants when he wants it. Failure to arrange his books in an orderly manner renders his library of little value, or perhaps worthless in the emergency. Proper arrangement gives the books fifty per cent more value for actual use, and the collection of the books into the physical form of a library gives them a further value for the effect they produce on the mind of the visitor, and for the influence they possess over the mind of the owner.

The same rules that apply to the professional man's business library apply similarly to your agricultural library. The principal difference between your library and the lawyer's is in the number of volumes. For you to think you can achieve perfection in farming ability merely by adding to your stock of knowledge those facts and ideas you pick up in your own experience is the same as for the lawyer to think he can develop fast enough,



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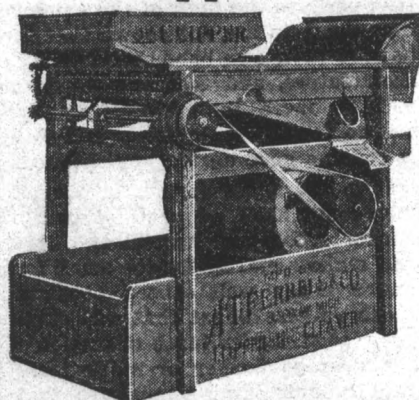
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through his own practice and observations, to keep pace with the development of the profession. If we are going to get anywhere near the top in any line of endeavor, professional or business, we must profit by what other men have done. We must make use of the brains of other people. Our own experiences are valuable to us, and they teach us much, but they are limited. We appreciate this fact as soon as we begin to investigate the methods and experiences of others.

In every farm home there ought to be a growing collection of books, and these books ought to be kept in a suitable case or set of shelves where they will be easily reached by anyone connected with the farm. If the farm is so small that the work is all done by the owner, or with the help of one man, this little library is none the less important; perhaps I should say it is all the more important. If the farm is large and employees are many, the library ought to be correspondingly large, and perhaps divided or duplicated so that the different departments of the farm will each have a library. Whatever the farm, whatever the labor and managing conditions, there ought to be good agricultural literature within reach of the help and of the employer. The help will be benefited by reading such books, and it will pay them to take an interest in that kind of reading, but the manager must read. He cannot succeed in any large degree without reading. On the small farm there are times nearly every day when the hired man and his employer have time to spare for a little reading. It may be during unfavorable weather, or it may be in the evening or at the dinner hour or on a Sunday. One cannot keep keyed up to hard work all of the time. When you let down, instead of merely loafing read something out of the farm library. If a man wants to get ahead he can do it through agricultural books. If he does not want to get ahead—well, he will not be reading this article.

The laboring positions on farms are filled to too large an extent with people who are simply waiting and hanging on. They are living from week to week with nothing more than a vague hope that sometime, somehow, luck will come their way. As a matter of fact, they give almost no thought to what they are going to do or become. It is perhaps the fault of the employer that the help are not shown that they have in their own hands the making of their future, and that one thing that will do more than almost anything else to develop their power and ability is reading good agricultural literature.

It is not necessary to have even a "five-foot" shelf of good agricultural books. A five-book agricultural library will make a starter for the small farm, and a dozen well chosen books will make an assortment that will cover a very good agricultural education for the average farmer or stockman. If the force is large enough so that a dozen books will not suffice, the dozen may be duplicated. It is naturally desirable to add to the collection such new and desirable books as are published from time to time. The method by which many farmers buy books is through some cheap farm paper that offers some wonderful bargain to attract his attention, or when some slick agent comes along selling books that are so out of date that they are of little practical value in his collection of books. What he should do is to keep his eyes open all the time, watching for the new books suitable to add to his library, and ones that will help

his manager and force. A new business book will mean new opportunities for the reader. He should be looking for opportunity instead of sitting back waiting for opportunity to find him. There are certain rudimentary lines that all farmers need to study; stock breeding, plant breeding, horticulture, farm sanitation, stock feeding, fertilizing the soil, farm management, gardening, control of weed growth, special branches of crop growing, stock management and caring for injured and sick animals. These and the other leading branches of agriculture and stock breeding are divided and subdivided in the many good books written by well qualified experts, and no one can read these books without being made more efficient and worth more salary.

The editor of any good farm paper will advise a subscriber at any time as to what books are best for him to use in his farm library. In fact, practically all agricultural books can be bought from the publishers of farm papers. If you know of a book you want and know its price, send the money to the farm paper and you will get the book without any trouble. My advice to the farmer who has never made a start toward developing a farm library is to ask the editor of this paper to name for him in importance the twenty best books for his library. While it is important to buy the books, it is more important to have them read. The attitude of the farmer should be that both he and his men should read the books. The owner himself needs the books to develop his ideals as much as the hired men. The farmer can no more stand still than can the hired man. We are all on our way up or down. The question as to which way is our way, can be very nearly answered by noting whether we are or are not readers of agricultural literature.

There ought to be a willingness to read agricultural books and papers, and this willingness ought to amount even to anxiety. We all ought to be anxious to get ahead and anxious to find means of doing so. The key to success is knowledge. Some knowledge we can get by our own experience, but more we can get from books and papers. The reading route to success is so much easier than the hap-hazard, pick it up as you go along way, that it ought to be the only way. The farm library ought to be a circulating library to the extent that everyone connected with the farm shall be allowed to take any book home to read. Employees ought to be encouraged to do such reading outside. They ought to be shown its great advantage to them. When the average farm hand is asked by the owner or manager to do anything like that, his first thought is likely to be that he is being crowded into extra effort. His first thought ought to be that he is being shown the way to make good, to develop into something more than a mere laborer.

With a good farm library it is possible to devise a course of home study based on the farm library, by means of which those who take an interest in reading may be given examination papers based on the books read. Employees may not take kindly to this, and it is probably not good policy to make it compulsory, but it ought to be obvious to every employe worth having that the great benefit in such things comes to the man who does the studying rather than to the man who is encouraging him to do so. I know of a farm manager who has made a practice of conducting reading courses for his men and who has an examination once a month and each employe is list-

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ed with points opposite his name, indicating the books he has read and the points he has memorized. The books read represent five points and the question answered one point, and five questions are asked. A prize of fifteen dollars to the two winners acts as a stimulus. These meetings in the manager's office have a tendency to maintain a friendly feeling among the employees and makes them more efficient in their work.

A most important feature of the farm library should be the farm papers. It is not enough to read agricultural books. There is much in the agricultural papers that never appears in a book, and in addition there is the news of the business that will keep everyone connected with the farm up to date, and informed on what is new in stock, tools, equipment, methods and practice.

Some employees take the position that it is not their business to keep themselves informed, that they are merely laborers, and all they have to do is follow orders put out by the manager or owner of the farm. This may be theoretically correct, but when it comes time to raise wages, or when it comes time to choose employees to be kept or promoted while others are discharged, the fortunate ones are those who have tried to see how much they could learn about the business, rather than how little. And when another farm owner wants a manager or herdsman, or when the owner wants to advance a man, the one that is capable of taking the position, who has read books, studied the farm papers and informed himself is the one that is selected. It is not enough to take one agricultural paper and keep it on file. There ought to be papers taken representing every phase of agriculture that is conducted, when there is a special publication for that branch of the business.

The farm paper is today so essentially a part of the agricultural development of its readers that it is very conservative to say that a farmer will succeed in direct proportion to the amount of attention he gives those papers. The farm papers ought to be an important part of the farm library, taken in sufficient numbers so the employees may have an opportunity to read them, either in the farm office or by taking them to their homes. Many farmers make it a rule to have subscriptions sent right to their employees' homes and the expense which at first glance might seem extravagant is in reality insignificant in contrast with the results obtained. Any hired hand who can thus be induced to read a farm paper will return the farmer a hundredfold on the cost of subscription. Farm papers, like desirable agricultural books, make more efficient men and result in increased profits. The farm library will be the biggest paying investment the farmer ever made, if he uses care and intelligence in the choice of literature and methods for getting it read.—C. B. FORD.

UNOBLIGING HENS.

Marie, the eight-year-old hopeful of a certain household, was seated at the breakfast table one morning. As usual, eggs were served.

Now, either Marie was not hungry or she had grown tired of the inevitable bill-of-fare, for very earnestly she lifted her eyes and exclaimed:

"I wish to goodness hens would lay something besides eggs!"

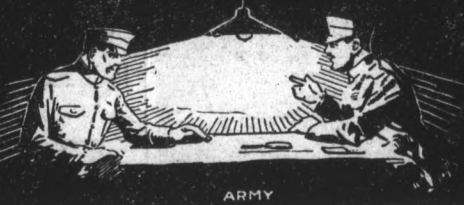
Diner—"Look here! Isn't that a hair in the butter?"

Waiter—"Yes, sir, a cow's hair. We always serve one with the butter to show that it isn't oleomargarine."

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The Complete electric light and power plant

*Specified and used by
the U.S. Army and Navy
the Red Cross and the Y.M.C.A.*



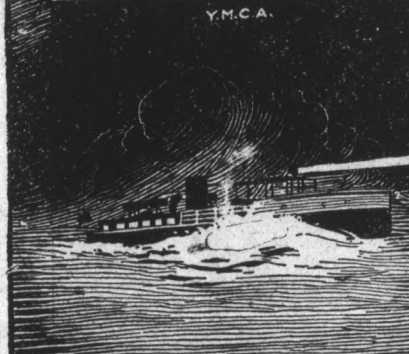
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RED CROSS



Y.M.C.A.



NAVY

More than four thousand Delco-Light plants were delivered to the U. S. Government for war work. They were used to supply electric light in camps, storehouses, hospitals, Y. M. C. A. huts, airplane hangers, sub-chasers and other branches of the service.

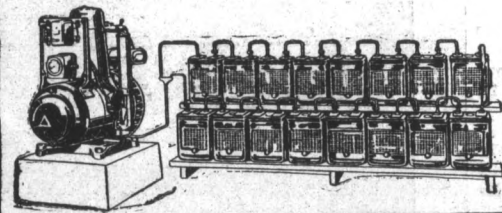
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It better living conditions,—increases farm efficiency, and soon *pays for itself* in time and labor saved.

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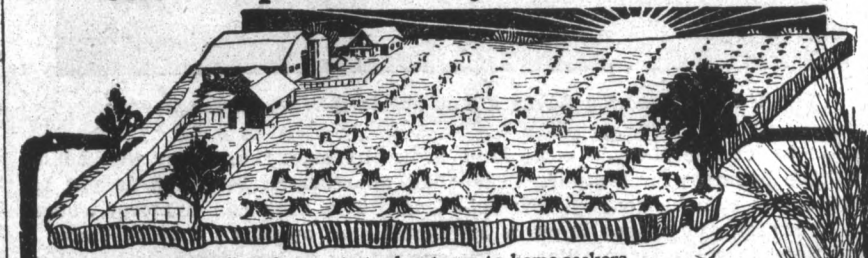


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land similar to that which through many years has averaged from 20 to 45 bushels of wheat to the acre. Hundreds of cases are on record where in Western Canada a single crop has paid the cost of land and production. The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta want the farmer to prosper, and extend every possible encouragement and help to Grain Growing and Stock Raising.

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Loans for the purchase of stock may be had at low interest; there are good shipping facilities; best of markets; free schools; churches; splendid climate; low taxation (none on improvements).

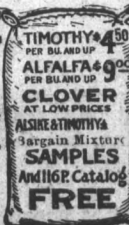
For particulars as to location of lands for sale, maps, illustrated literature, reduced railway rates, etc., apply to Supt. of Immigration, Ottawa, Can., or

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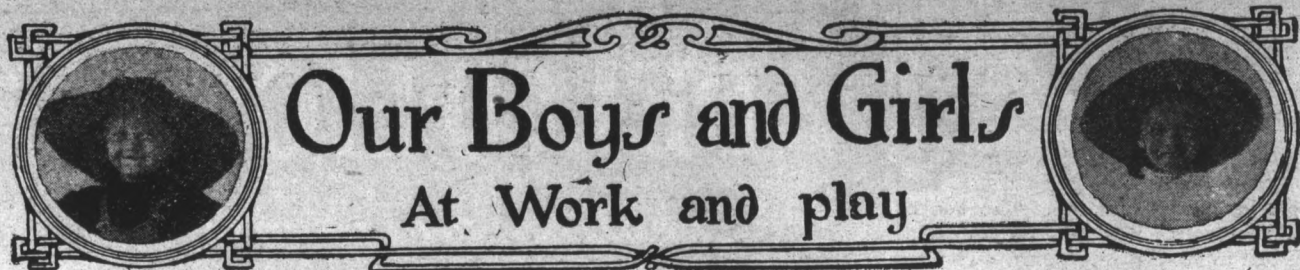
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Our Boys and Girls

At Work and play

The Boy's Market Garden

EVERY farm boy should have some way to make his own spending money. Self-reliance is one of the most noble traits of character a boy or man may possess. It not only makes a boy feel independent of his parents when he wants money to spend, but it develops business traits and gives him a knowledge of the value of things. All boys would not make good gardeners, cattle breeders, swine breeders, horsemen, sheep men or poultry breeders, but each boy has a preference for some one kind of farming and he should try and induce his

from which it is easier for the plant roots to draw their food supply. Also the roots must have an ample food supply if they are to furnish enough food to develop a fine vegetable. As soon as the seed sprouts in the ground the root goes down and the stalk comes upward in the air. The root goes down because of the food of the plant being in the ground and it is the business of the root to draw up this food so that the plant may be nourished and grow. It is a sort of stomach for the plant.

If a plant had no root it would not

Care must always be taken not to place strong manures or fertilizers in the soil near the hills or rows of plants unless they are thoroughly mixed with the earth. If the roots of the plants come in direct contact with the manures and fertilizers it is apt to destroy them. Well-rotted barnyard manure is the best and cheapest fertilizer available on the farm, and it should be applied generously and well-mixed with the soil so that the plants will not lack for food.

Thus we see that all plants require food just the same as we do and all the time they are sending out tiny roots in search of food. If we were hungry and wanted a piece of meat or bread we would go to the kitchen cupboard and reach in after it, but if a plant is hungry it must send its roots after its food. If you want to make sure of this try burying a bone or a piece of bread beside the roots of a young tree or plant and see how the tiny roots reach out after it the same as you would if you were hungry and went to your mother's cupboard.

But instead of feeding plants with meat, bread and potatoes we find it better to feed them with decomposed vegetable matter, stable manure, ground bone and other foods that are easier for the action of the air and water in the soil to make available for the mouths of the plants to draw up and use for food. Thus you may understand why we feed plants just the same as we feed ourselves.

Manure is the best and cheapest plant food as it supplies the plant with food and at the same time makes the texture of the soil better so that it will hold more moisture and be more loose and mellow, thus giving the roots and fibers a chance to reach out further in search of food. You have all seen a calf tied out with a short rope and all of the grass that it could reach eaten down close. What would happen if he were left in the one place? He would surely die for want of food.

You have also seen plants that were set out in hard, lumpy soil where there was very little plant food. They are like the calf that is tied with a short rope. They have exerted all of their strength and vitality in reaching after food and unless we supply them with it they will die just the same as the calf would if left with a short rope. Of course, we may transplant them to a new place where there is plenty of plant food and they will thrive the same as the calf would if moved to fresh grazing. So you see without an abundance of plant food and good tillage we cannot grow good crops of garden truck.

Now is a good time to make plans for your garden. Send for some seed catalogs and study the descriptions of the different kinds and varieties of vegetables and make a map of your proposed garden. Make an estimate of the amount of seed needed to plant your garden and order it early. Send your order to some reliable seedsmen who has seed that is adapted to your soil and climate. As a rule it is safer to stick to the old reliable varieties, for only a few of the so-called new vegetables possess real merit. If you have an opportunity visit your county agent and talk over your plans with



The Hand Cultivator Saves a Lot of Hard Work in the Garden.

parents to let him start in some kind of a little business for himself.

For a boy who has only a few dollars to invest, and whose home is located near to some large village, city or summer resort, a well-managed garden or truck patch can be made to pay fine profits. Such a business will afford a good income during the summer and fall. For a garden spot a warm sandy soil is the best kind to select because it is easier to work; the soil being loose, the roots of the plants find it much easier to reach out in search of their food. Other kinds of soil may be made to produce good crops of vegetables, but as a rule they are much harder to get in good condition to plant and require more cultivating and hoeing to keep free from the weeds and in proper physical condition to grow fine vegetables.

The soil must be properly fitted before it can become a congenial home for the tiny plant roots to live in. It not only requires plowing and pulverizing, but the surface must be refined with a light harrow and rake. This is to put it in shape to hold moisture and to break soil lumps into particles

grow any more than a boy would if he had no stomach in which to put his food. The root has numerous, small mouths or openings that resemble a sponge but as the plants feed by them we may call them mouths—but do not think of them as real mouths. These are the fine parts of the roots that you see hanging to the main branches. When we transplant a plant to another part of the garden we must be very careful not to break off these tiny roots, or mouths, or the plant will die just the same as you would if you would stop eating.

The different plants grow in the ground just the same as the different people live from a well-supplied table. Each plant chooses its own food just the same as a person. Sometimes one plant requires different food than another and will not do well in a certain kind of soil where the other plant will thrive exceedingly well. When this is the case we must feed the plant by putting in the soil the kind of food that it needs for all plant food must first be put in the soil to be acted upon by the air and water before it can be taken up by the mouths of the plant.

him and ask him to make you out a list of good vegetables for your garden. You will find him a pretty good fellow who knows a lot about gardening and boys, and he is always willing to help boys who are trying to help themselves.

A few common vegetable crops will pay better profits than too many different kinds. If you live near a village or city I would suggest that you grow peas, string beans, lima beans, sweet corn, tomatoes, green peppers, onions, beets, turnips, early cabbage, carrots, and early potatoes in your garden. Plan your garden plot so that these crops can be grown in long rows, and have the rows far enough apart so that they may be given good cultivation with a one-horse cultivator.

There is nothing to be gained by planting your crops too close, for it is almost impossible to keep the soil between the rows properly stirred with ordinary hand tools, especially if a boy has to do it. As a rule, it seldom pays to grow such things as radishes, lettuce and the like unless you live near a large city market or where you can supply a few private customers every day during the season. On the other hand, there is seldom a time when good fresh peas, beans, sweet corn, tomatoes, peppers and early potatoes do not find ready buyers and at good prices. These crops are easier to grow and market than some of the more delicate ones.

Plant your crops and set out plants so that you will have peas, beans, tomatoes, sweet corn and early cabbage during the entire growing season. After you have found a few good customers you cannot afford to lose them so you must plan to grow about what they want. As canning time approaches you will find it easy to sell all of the peas, beans, peppers, tomatoes and sweet corn you can furnish to your customers.

If you have enough land cucumbers and Hubbard squash will prove good money-making crops. There is always a good demand for small cucumbers for pickling and if you keep the small cucumbers picked closely the vines will keep on bearing for several weeks. Good Hubbard squash always finds a good market and at good prices. The squash vines thrive exceedingly well when planted between the hills of the early potatoes. If you are careful not to injure the vines when digging the potatoes they will come on after the potatoes are harvested and produce a fine crop.

When your vegetables are ready to sell buy a few clean baskets, fill them up nicely with good vegetables and try and find a few good customers who will order a basket or number of baskets of vegetables once or twice a week. Vegetables will keep fresh and brittle if gathered early in the morning the same day they are delivered to customers. This is a big factor in holding regular customers and you will be the gainer. With such crops as peas, beans, sweet corn, tomatoes and the like a few hours daily in delivering means a decided loss of freshness and quality, to say nothing of the loss from wilt and shrink.

Never put any vegetables in your baskets that you would not want to eat at home. Always bear in mind that your success in selling to private customers will depend upon your honesty in giving good measure and putting up your stuff in good condition. Deliver your baskets the same day you promise, for many times the housewife plans her work so that she can take care of them on a certain day, and you may lose some of your best private customers by not keeping your word. Plant good seeds, fertilize generously keep the crops free from weeds and put up good vegetables for your trade and you will have little difficulty in finding good customers for all the stuff you can raise.

W. M. K.

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IN announcing to the farmers of America our new 1½ H.P. "Z"—which successfully uses

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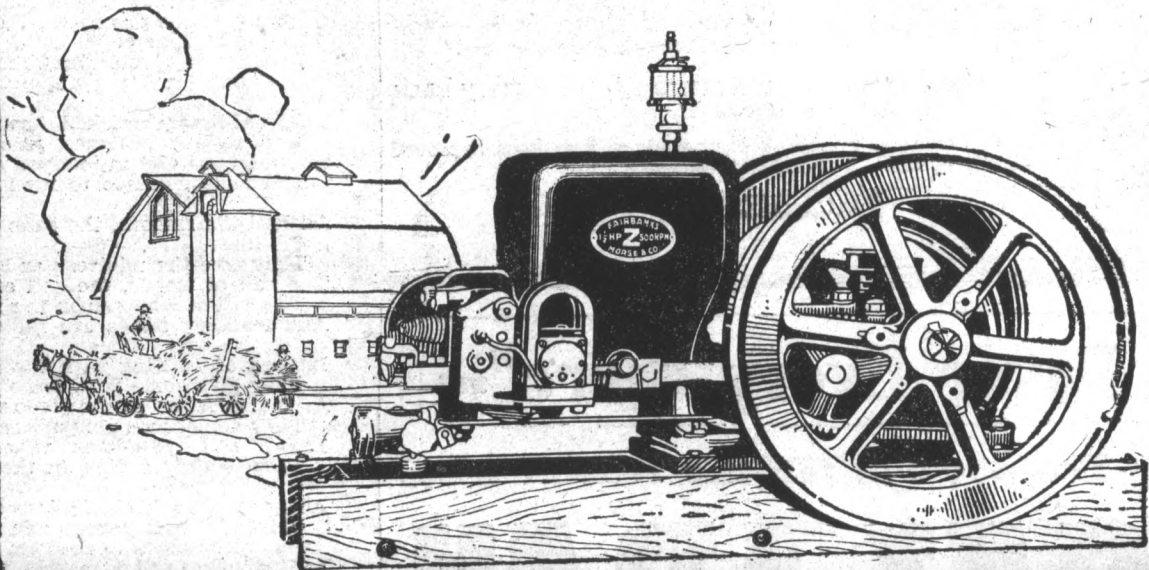
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Throttling Governor—Built-in Oscillating Magneto.

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Horse or Cow hide, calf or other skins with hair or fur on, and make them into coats (for men and women), robes, rugs or gloves when so ordered. Your fur goods will cost you less than to buy them and be worth more.

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Then we have recently got out another we call our Fashion book, wholly devoted to fashion plates of muffs, neckwear and other fine fur garments, with prices; also fur garments remodeled and repaired.

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Woman and Her Needs

Intelligent Food Saving

No. 1, The Calorie

DON'T be afraid to look a calorie in the face," says a recent government bulletin, pleading for the continuation of food conservation even though the war is ended.

It is a good many years since I first made the acquaintance of the calorie, and up until now it never seemed to me of enough importance for a busy housekeeper to waste time on. Calories might be very well in hospitals where diet was of the utmost importance, or in institutions where the amount of money furnished to supply food was limited. There it was undoubtedly of great importance to figure out to a fraction just the exact amount of food needed to keep the inmates in the best physical condition. But in the ordinary home, it always

the engine is fed coal or wood to be converted into steam—energy—so the body is given food which is changed into heat and energy—the power to work, or steam of the engine. Food also plays a further part, it is needed to build up the body, or for growth.

The foods which we eat are divided into three important classes—proteids, carbohydrates and fats. Proteids consist of lean meat, milk, eggs, the gluten of bread, casein of cheese and the legumes, beans, peas and lentils. The carbohydrates are the starches and sugars and the fats are the vegetable and animal oils, cream, butter, etc. Water and mineral salts, as lime, iron, phosphorus, magnesia, etc., are necessary but mostly are supplied in sufficient quantities in the food we eat.

A TRIBUTE

Yestermorn 'twas mine to dust some ancient furniture;

I'll not offend the shades I trust—the shades of past designers—

'Tho I should say it (for I must)

Those winding grooves, those turns and twists of flowers and leaves

and twiners,

I surely that would break my wrists, tho I'm not classed with whiners.

That old-time cherished furniture of walnut wood so stately,

With figures intricate, galore, I struggled with—well—greatly,

The interned dirt my nerves did nag,

And bade defiance to my rag.

All hail the smooth, the sane designs, the surface plain, the simple lines

That give the mistress and the maid a chance for other callings;

The call of woods, the call of sky, when summer days go idling by,

The call of winds upon the moors when winter whistles at the doors

And feathery flakes are falling.

Instead of battling with the grime 'mid streams of perspiration

They give some rest, some bit of time for mental recreation;

At ingleside or on the green with fav'rite book or magazine

They sometimes now are really seen!

Lazy? No! ye ancient wives tho this the name they give it,

They're only saving in their lives the things they need to live it.

Away with each old hallowed form—Consign it to the attic—

Tho heart strings snap and raise a storm, heed not their pull erratic;

Attune yourselves to modern strain that hails the late designers;

Kiss your hand at each quatrain, to knights of chisel, saw and plane

Blest "carpenters and joiners." X. Y. Z.

seemed to me that observation and common sense was a sufficient guide for the housekeeper in the matter of feeding the family. Supply a balanced ration, see that each member of the family gets a portion of each kind of food, about three-fifths carbohydrates and one-fifth each of fats and proteins, with plenty of fresh vegetables to supply minerals and in ordinary cases you are pretty sure of results. If one individual does not thrive, study that particular case and provide a suitable diet. This has proven a pretty good method of handling the question of proper feeding.

But now if we are to do our full part in reconstruction, this easy-going American method must be changed. Famine maps of Europe thrown on the screens show nearly a half of that continent shaded in black. Food must be supplied to those starving millions, and most of it must come through America. We must do with less ourselves in order to help others. And in order to do with less intelligently, we must learn just how much we actually need of the different food elements to keep us in proper trim, and what foods supply these elements.

Why do we eat? To supply the body with heat and energy. The human body must be considered as an engine designed to do important work. As

provided we eat enough fresh vegetables and fruits. The proteids are used to build up the tissues of the body, the carbohydrates and fats to give energy and the mineral matter to form bone and assist in digestion. All of the first three classes furnish energy or power to work, but especially the carbohydrates and fats.

Just as fuel must be burned in the engine to give power to work, so food must be burned in the body to give the same power. And this is where we get the term calorie. There must be a measure of the amount of heat produced in the body, and this measure of heat is called the calorie. Roughly speaking it is the amount of heat required to raise the temperature of one pound of water four degrees F.

Now there is a direct relation between heat and work and experiments have proven that the same amount of energy would be required to heat one pound of water one degree Fahrenheit as to raise a weight of 778 pounds one foot, or a weight of one pound 778 feet. Accurately speaking, a calorie is equivalent to 3,087 foot pounds, or the energy necessary to raise 3,087 pounds one foot.

Now how are we to find out from this just how much food we need and what sorts to fit us to do our work? Scientists have figured it all out very nicely

for us, and our part is to study out our own individual needs. They have figured out that one gram of protein will give us 4.1 calories, one gram of carbohydrates about the same, and one gram of fat 9.3 calories. They know, too, just how many calories are needed by men, women and children at hard labor or light labor or just for physical well-being with no demands on their strength. And they have all tabulated just how many grams of the different food elements one pound of everything which grows will furnish and how many calories a pound of said food will give.

The government asks us to devote our minds just now to a study of the subject. It is a purely voluntary service, but one which will yield much satisfaction to the woman who takes it up. The Department of Agriculture at Washington, D. C. has a valuable bulletin, "The Chemical Composition of American Food Materials," by W. O. Atwater, which will be sent to those who ask for it. It is of great value even to those housekeepers who do not care to figure out in detail a balanced ration for her family. (Article No. 2, "A Standard Daily Ration," will appear in an early issue).

GOOD NATURE CONTAGIOUS.

BY L. M. THORNTON.

A CERTAIN little boy was getting into the habit of fretting, especially at the breakfast hour, and his mother reproved him by herself fretting at him. The whole comfort of the morning became endangered. Father went to his office with a little worried frown on his face, and an older child to school in a mood to be irritated by things which later in the day she could easily laugh over.

It was mother who discovered the danger and the remedy. She found that Little Boy, reproved for and forbidden to mention one thing, turned to another and things instead of becoming better grew worse. When she started the reformation, she pretended not to notice that he grumbled when the room was cold, but called his attention to the fact that the snow sprites were getting ready to throw down whole basketsfull of snow—enough to go coasting. Whenever there seemed a likelihood of complaint from little boy she diverted it by a cheery remark or a happy suggestion. The result was magical. The morning grouch, which no amount of reproof or scolding could banish, disappeared under the sunshine of tact and good nature.

Perhaps instead of Little Boy it is some older member of the family who "gets out of bed on the wrong side." A cross word or a reproof sometimes sets the whole day wrong. Just as our sense of taste and hearing are more acute during the first few hours of the day, so also is the sense that gives another the power to hurt us by word or look. Whatever happens let smiling faces and unflinching good temper be the guests at the breakfast table.

SHORT CUTS IN HOUSEKEEPING.

To keep frying pans, saucepans and dishpans from rusting, take a piece of No. 9 wire and bend each end in opposite directions so as to slip over the back of warming oven and hang the pans on the hook. The heat from the stove will quickly dry them, and besides they are handy and out of the way.

To mend a broken window glass when you cannot get a glazier, take a piece of glass that will nicely cover the hole, carefully put all around edge of piece a little glue, place over hole and hold a few minutes, or until glue sets, and you will have saved not only the price of a window pane but probably your family a bad cold.—Mrs. C. F. S.

Back to the Good Old Days

Now that the war is won and a good crop of wheat is in stock the Food Administration has found it advisable to permit the mills to go back to the manufacture of patent flour.

This is certainly good news for every one, and particularly those who have been in the habit of using the old time high quality

Lily White

"The flour the best cooks use"

You cannot expect to bake the best biscuits, breads and pastries if you do not use the best flour.

Of course a good cook will produce better results with a poor flour than a poor cook, but good cooks do not risk their reputations by using poor flour.

Certainly no better flour has ever been made than LILY WHITE, and it has been so universally used by particular, exacting housewives that it is now known as "The flour the best cooks use."

This fact is very suggestive and is a very good reason why YOU should bake with LILY WHITE FLOUR.

VALLEY CITY MILLING COMPANY.

GRAND RAPIDS, MICHIGAN



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Brood sow, poultry, 5 wagons, harness, miller, mowing machine, horse rake, plow, harrow, cultivator, tools, hay, potatoes, grain; 3 miles R.R. town. Heavy hay, big crops for 100 acre fields; big herd pasture; big lot wood and timber; 150 apple trees, other fruit. New 2-story house, good basement barn, other bldgs. Aged owner retiring sacrifices ready for work, \$4400 for everything. Less than \$15 acre, \$1500 down. Details page 5. Strout's Mid-Winter Bargains, equipped with stock, tools, crops, 17 states; copy free. Dept. 101, E.A. STROUT FARM AGENCY, Ford Bldg., Detroit.

High Class Farm

for sale. 200 acres, level, drained, clay loam soil of highest quality, very productive. Extra well fenced. Modern water system. Modern eleven room dwelling, good seven room tenant house. Modern Dairy Barn, 36x68, electric milkers, individual drinking cups. Two other large barns and all-necessary outbuildings. Present owner has owned this farm over fifty years, old age compels him to sell. Ideal location adjoining Lapeer, Mich. No better farm can be found. Ask us for complete description, price and terms. Holman Real Estate Agency, Lapeer, Michigan

Beautiful modern home, steam heat, 8 lots, expensive shrubbery fruit and shade, block from CENTRAL MICHIGAN NORMAL COLLEGE, will sell or trade for small farm, or stock general merchandise. Cooper, Gover & Francis, Mt. Pleasant, Mich.



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has opportunity for 1000 farmers where the Government says the best crops in the United States were grown last year. The state will back these farmers with a 5% real estate loan if desired. Ask for Bulletin. Department of Immigration, Chas. McCaffree, Commissioner, Capitol Q-84, Pierre, S. D.

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My 80 acre farm, good land, good buildings, good water pumped by windmill in house and barn yard. 5 miles from good markets, good roads. Sold at a bargain if bought at once. For particulars write to owner. AUGUST O. BOROK, R. 3, Reed City, Mich.

Only \$5,000 Required Down

240 acres grain and stock farm 3 1/2 miles from Gladwin, Gladwin Co., Mich. Large two story house, elegant bank barn 60 x 80, silo, other large barns &c. This is a highly productive, clay loam farm. Price \$15,000. U. G. REYNOLDS, Gladwin, Mich.

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90 acre farm for sale or exchange for smaller farm difference 4 miles from City good soil fences and and bldgs. SHERMAN HAAS, R. 1, Kalamazoo, Mich.

For Sale or Exchange 180 Acres located in Olare Co. Mich. No buildings. J. W. RANDALL, Tekonsha, Mich.

The best farm bargains are in Southern New York. Tell us what you want, we have it. OWEGO FARM AGENCY, Owego, N. Y.

Wanted To hear from owner of farm or unimproved land for sale. O. K. HAWLEY, Baldwin, Wis.

For Sale. Fine 240 acre farm, good buildings and silo, 37 miles from Detroit. \$30 per acre. FRED MAICHELE, Majestic Bldg., Detroit, Mich.

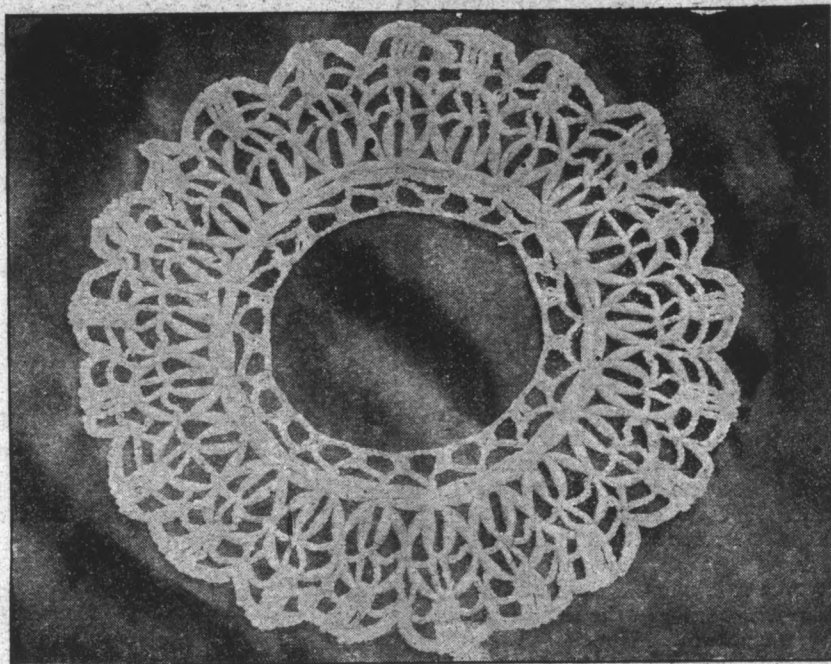
Tumbler Doily

By Esther A. Cosse

A USEFUL gift for the friend who is about to be married is a set of tumbler doilies. To make them you need one-half a piece of the heavy coronation braid and part of a ball of No. 15 crochet cotton. First take the braid in your left hand; skip one knot, take two knots, cross, take four and cross, catch them together with two single crochet stitches, chain five and repeat. Make 21 of these and leave one knot to which join the other single one by sewing. Join work of first two with slip stitch.

The linen is overhanded in after the outside is finished. Always be careful to avoid having a kink in the braid when you have made the first part as you may get the inside finished and find you have a twist in your work, which cannot be fixed without ripping the work back.

A good way to set in the centers is Second Row.—Fill space with nine to lay your piece on the linen and



Tumbler Doily of Coronation Braid and Crochet.

single stitches and one single stitch draw off the center with a lead pencil, over single crochet of the first row. being sure to cut your center larger as

Third Row.—Chain nine and catch you must allow for the hem. Then with single crochet into single crochet overhanded it in on the line you have drawn with your pencil. This is a simple way of inserting your center.

Fourth Row.—The fourth and last row in center is made after slip stitching third row together; chain five, catch through center of chain two single crochet stitches and chain three, then two double crochets through next loop and chain three. These chains must be made tight in order that the center of your piece may be made firm.

Break your thread and take two of your large loops and fasten together between first and second knots. Chain five and cross over to the small loop, catching with a single crochet in the center between the knots, chain five and catch over top loop between knots two and three; chain five and go back to the small loop; chain five and take in the other side and the next large loop between knots three and four. Repeat to the end of the row.

Second Row.—Chain five after fastening first row with slip stitch. With a double crochet through first knot, chain five, make four double crochets through the chains of previous row; chain five, make double crochet through last knot; double crochet through first knot of next loop; chain five and make four double crochets through chain of other row; chain five and catch one double crochet through the last knot and so on to the end of the row.

Third Row.—Chain seven, catch four treble stitches into four double crochet stitches of previous row, chain seven and catch in double crochet with a single crochet of last row.

Fourth Row.—Fill in chain with nine single crochets, chain two, catch through treble stitch with single crochet; chain three, catch in next treble, chain two and catch in treble, chain seven and catch in double crochet with single crochet.

These can be made into sets of three or six or they can be made into different sizes. Use one and a half pieces for the largest, one piece for the sec-

WHEN SICKNESS COMES.

BY JULIA R. DAVIS.

The nurse has a duty to herself as exacting as to her patient. Self-sacrifice is not always unselfishness, and to be really efficient in the care of the patient she must not lower her own physical condition. She must take a little time each day for rest and outdoor exercise. A cheery, pleasant manner is a valuable addition to a nurse's equipment for her task. Calmness and self-reliance, not easily losing her presence of mind are essentials for success. Find reason for encouragement, and hope at all times.

In making a report to the physician it is unwise to say anything before the patient that might be at all discouraging, and to see the doctor privately for more than a moment excites suspicion in a nervous person. The better way is to tell in the presence of the patient anything that he himself would desire to have known, to satisfy him that a full and correct account is made, being careful to add anything that may give the physician the opportunity to prophesy pleasant things. Anything calculated to excite or alarm the patient may be reported in a note, to be given the doctor upon his arrival, and which he may read before seeing the patient. Should he then desire to question the nurse privately the time taken will be much shorter.

When there is no disposition to eat, though the body needs nourishment, a patient may be induced to take a few spoonfuls of beef tea at short intervals as a medicine, when he would absolutely refuse it when presented as a food. A sick person will eat more when fed than if he has to make the necessary exertion to feed himself.

Never ask a sick person what he



"Mother's Making Jell-O"

As Jell-O is now sold in every small-town general store as well as in city groceries, the farmer's wife can get it, in all the different flavors, and serve the same fine desserts that have become so popular among her city friends.

These Jell-O dishes are all made without cooking, in a minute or two, and while they lend a special grace to the table setting and are of most delightful flavor, they cost less than anything else which a discriminating woman would care to serve.

The Jell-O Book, sent free to any woman who will write and ask us for it, contains all the information that any woman could wish about Jell-O and the making of Jell-O desserts and salads.

Jell-O is put up in six pure fruit flavors: Strawberry, Raspberry, Lemon, Orange, Cherry, Chocolate. Each 13 cents or two packages for 25 cents.

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THE MICHIGAN FARMER—DETROIT, MICHIGAN

wants. Plan little surprises—make the meals look dainty and tempting with the accessories of spotless linen, and bright silver. A nurse should never be careless or inexact about the meal time.

When a patient suffers from thirst and it is undesirable that he drink much water, cracked ice increases the thirst, but a small quantity of water taken by the spoonful relieves and satisfies. A small object held in the mouth allays thirst by increasing the flow of saliva.

An amateur nurse is apt to make the mistake of relaxing somewhat in her vigilance as she sees the patient improve, overestimating perhaps, his strength, which may be followed by disastrous results. The medicines should be given with the same regularity as before and no persuasion should induce the nurse to agree to anything which she cannot be sure the physician will approve.

On washday when it is cold and unpleasant for hanging out clothes, place hooks wherever it is handy to hang clothes, on porch or from corner of house to trees, then take clothesline and measure from one hook to another. Cut line in short lengths sufficient to reach, allowing for a loop at each end. Take these pieces in the house, catch loops on convenient hooks or nails. Place on line all small articles, such as handkerchiefs, napkins, towels, etc., lift loops from hooks, take out of doors and slip on the hooks or nails, and save yourself cold fingers and the exposure to a bad cold. I have found this one of much saving of myself from exposure.—Mrs. C. F. S.

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Play Her Accompaniment Yourself—on the Gulbransen

If "she" sings, you know how a poorly played accompaniment handicaps her—how a well-played one helps.

There are, we believe a hundred singers of real ability to every one who has the opportunity to develop.

Because so few singers have the support of well-played accompaniments—such as you can play for "her" on the Gulbransen.

The True Accompanist

The Gulbransen, of course, never strikes a wrong note, never hesitates as to the right one.

And, instead of doubtful "keeping together" there is a smooth certainty of performance.

Because both singer and player-pianist can devote themselves to sympathetic interpretation, with no thought of error, no effort.

The Gulbransen further helps the singer by transposing the music for any voice, high or low.

A Help to Muratore

Even Muratore, leading tenor of the Chicago Grand Opera, finds need for a Gulbransen at home.

In the absence of his accompanist, a friend can play his Gulbransen for him. And Muratore frequently plays his own Gulbransen accompaniments, it is so delightfully easy.

From that you can imagine the artistic standing of the Gulbransen—and its freedom from any suggestion of mechanism.

Years of devotion, endless experiments, carefully guarded patents, have produced in the Gulbransen an instrument of highest musical capability—therefore—

Easy to Play

First, it is physically easy to play. Our baby trade mark was suggested by a certain baby who did play a Gulbransen—just as shown in the picture.

Second, you can play the Gulbransen with satisfying expression, because you produce the expression as naturally as you breathe, and as easily.

The Gulbransen, in operation, is like a deep-breathing, well-trained singer, compared to the "out of breath," gasping beginner.

In fact, you can judge any player-piano, like a singer—by the "out of breath" test.

Try This "Breath" Test

Play a heavily scored piece on the Gulbransen pedaling with only one foot. Try to pedal slowly.

With most any player-piano this is tiresome. But the Gulbransen is easy to manage with one pedal. It is never "out of breath."

Using both pedals, you need scarcely move them to play the Gulbransen softly. And a great crashing chord requires but an extra touch.

This easy breathing of the Gulbransen is what makes it a truly satisfying musical instrument—as flexible as a trained singer's voice—as easily controlled.

Try this one-pedal "breath" test at the Gulbransen dealer's store. You will know the store by the baby at the pedals in the window.

(Pronounced Gul-BRAN-sen)

GULBRANSEN Player-Piano

Ro-San Indoor Chemical Closet

Be ready for the long cold winter. Have a comfortable, healthful, convenient and sanitary toilet right in the house. You can place it anywhere—in any room or closet. Endorsed by State Boards of Health. This is the original Chemical Closet you have seen advertised for four years. Superior in construction, design and finish. Color, beautiful XXX high finish grey with gold trimming. Aluminum or mahogany seat. **GUARANTEED ABSOLUTELY ODORLESS—30 Days Trial** The germs and odor are killed by a chemical process in water in the removable container—extra large size. You empty once a month as easy as ashes. A. C. Cook, Mass., writes, "We are well pleased with the Ro-San Closet. We find it all you advertised it to be, and absolutely odorless as you claimed." Mrs. D. T. Crandall, Mich., says, "It has proved a blessing to me. I find it perfectly odorless." That's the way the letters run. All as pleased and satisfied. It truly is a blessing to all homes without sewerage. Absolutely guaranteed—guarantee slip is packed with each closet. Don't go another day without this great convenience. Write now for free catalog, full description and price. **ROWE SANITARY MANUFACTURING CO., 7402 SIXTH STREET, DETROIT, MICHIGAN**

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MICHIGAN'S largest commercial bank, with a capital and surplus of \$7,500,000, is able to render especially valuable service to firms, corporations and individuals desiring a Detroit connection.

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On request, we will send his name and address and also our catalog showing all four models.

Some Good Songs

Here are a few of thousands of songs available. Some have the words printed on the roll. Try them at the Gulbransen dealer's store.

Lonesome—That's All	Mother Macree
A Little Birch Canoe—and	Dreamy Hawaiian Moon
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The Sunshine of Your Smile	Forgotten
Little Grey Home in the	The Garden of Your Heart
West	Good Bye
The Palms	In the Gloaming
Dreamy Nights	The Rosary
There's a Time in Each Day	Macushla
After All	Lead Kindly Light
Absent	

Nationally Priced

Gulbransen Player-Pianos are sold at the same price to everybody, everywhere in the United States. The price of each instrument is burned into the back of the case before it leaves our factory. Four models:

White House Model \$600	Town House Model \$485
Country Seat Model 535	Suburban Model 450

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NEW MONITOR SELF-HEATING IRON

AGENTS WANTED \$30 to \$50 a week actually being made now by men and women. The original—the best—the lowest priced. Nickel plated—looks good—makes good—sells fast—guaranteed. No experience needed. Women as well as men. Exclusive territory. Work all or sparetime. Mrs. Nixon, Vt., sold 8 first half day. Evans, N. O., sold 2 dozen one Saturday. Liberal terms. Prompt service. Write today.

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New Stock. New Prices

Pickeral, Round.	10c
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Smoked Bluefish, 20 lb. basket	\$2.00
Smoked Bluefish, 10 lb. basket	\$1.10

¼c per pound discount on orders amounting to 500 lb. or more. Our price list quotes numerous other varieties and is well worth the cost of a postal to ask for it.

WISCONSIN FISHING COMPANY,
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Mount Sinai Hospital School of Nursing

A three years' course in the theory and practice of nursing with the facilities afforded by this modern fully equipped institution, is offered to qualified young women desirous of entering the Nursing Profession. The curriculum has been carefully planned emphasizing especially the educational and cultural development of the nurse. The Spring Term commences March 1st. For particulars address Principal of School, 1800 East 105th Street, Cleveland, Ohio

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save money, must-see time and labor. One man does the work of several men. A few agents wanted. Agt., implement men preferred.

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Ordering now means delivering now and hauling now when it will not interfere with your important work next Spring. Hauling now will cost you less than later on—and Solvay Limestone can be inexpensively and easily stored anywhere just so it is protected from rain and snow.

In addition to these reasons we have made a

Special Offer

You can order your lime now and pay for it when you use it. Every order placed during February and delivered during February will be invoiced for April first payment, allowing 3% discount for cash if paid by April 10th, and an extension until June 30th, if you do not want to take advantage of the discount and wish to delay and pay in full by then.

SOLVAY PROCESS COMPANY
2091 Jefferson Ave. Detroit, Michigan

Ask your county agent about the advisability of using lime on your land; also ask your neighbors about Solvay.



Our sister company, the Smet Solvay Co., produces Arcadium Ammonium Sulphate as a by-product of coke. We believe that as first-hand distributors of this material we will be able to supply nitrogen to you very economically. We shall be glad to quote you on shipments.



Putting New Life In Sandy Soil

(Continued from page 197).

most profitable crop to raise on sandy land. If one lives a considerable distance from good markets and railroad facilities he will undoubtedly find it more profitable to follow a live stock and legume formula, and after getting his land in shape to grow ordinary farm crops, one that will approximate as nearly as possible, the well-known corn, wheat and clover rotation practiced by so many successful farmers throughout the country. The real problem of handling sandy land is that of getting it in condition to produce grain and grass crops. After this advantage is once gained it is easy for one to adopt a system of crop growing and stock feeding that will return good profits and gradually increase the fertility of the land.

The farmer who has sandy land to deal with will find legumes the main thing in the crop rotation. The ground should always be kept covered with something growing, often two or three things at a time. I have seen great shocks of corn standing in a vivid sea of green legume crops, sown at the last cultivating of the corn and storing nitrogen into the hosts of tiny nodules that lined their roots. The

next year's plowing added the tops to the fertility the roots had already put into the soil. Upon addition of a liberal application of mineral fertilizers the next year the old corn field acted as if it had been given a heavy dressing of farm manure.

Vary System to Meet Conditions.

Whether or not one should feed the legume crops to live stock or plow them under for green manure depends upon many conditions. If one has the necessary conveniences so that he can feed stock and make it pay decent profits he should harvest the crops and feed them to stock and practice a system of pasturing during the growing season. If not, he had better plow them under and accept his profits from the sale of cash crops. Growing forage and grain crops, feeding them to live stock, and allowing the resulting manures to waste away in the barnyards will not build up the fertility of the soil. Plowing them under will save all the work of harvesting and feeding them to stock, and build fertility very rapidly. It is, perhaps, the better solution of the labor problem than stock feeding. That depends upon the individual and the conditions under which he is farming.

Michigan Bee Keepers Meet at Lansing

THE biggest and best convention we have ever had," is the way the old members of the Michigan Beekeepers' Association described their fifty-third annual meeting, held at the Chamber of Commerce, Lansing, Mich., January 21-22-23.

Under the very able guidance of the president, the Hon. Colin P. Campbell, of Grand Rapids, the program was delivered with tremendous success before an audience of about two hundred of Michigan's best bee-keepers. One of the very pleasing features of the program was the rendering of several selections on the violin by Mr. Floyd Markham, of Ypsilanti, accompanied by Mrs. Markham. Mr. and Mrs. Markham are two of our best bee-keepers, having won first prize for three years in succession on Michigan honey exhibits, thereby winning the Langstroth medal.

There was a spirit predominating the gathering that was characteristic of all bee-keepers' meetings, but was more noticeable than usual in this one—the spirit of cooperation and good fellowship that spells success for the future of the bee-keeping industry in Michigan. No doubt this was partly due to the exceptional honey market of the past year, which on account of the scarcity of sugar has given the business of honey production a place of higher esteem in the public eye than ever before.

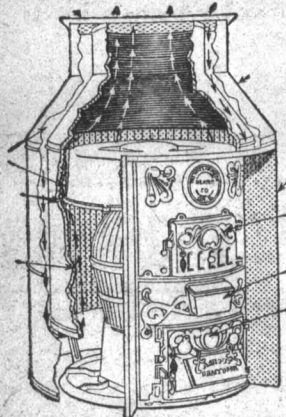
The Hon. J. N. McBride, retiring State Market Director, while speaking on "Cooperative Marketing," touched upon the greatest weakness of the honey producers when he said they should adopt a standard label and a uniform scale of prices for their product. A standard label would enable them to place an article on the market that would be bought more readily by wholesale men, because the quality of

the honey could be guaranteed, and a continued supply of the same grade would be insured if demanded by the trade. The present conditions are far from the ideal. Dealers hesitate to buy from the individual honey producer because they cannot buy in large enough quantities to warrant making a special brand of that particular honey; and when that one man's crop is exhausted, no more of the same brand can be obtained. Hence the article is not trade marked and honey prices in general suffer. The grading of honey would insure every producer a fair profit and prevent the cut-throat underselling practices prevailing in some localities in the state.

Acting on Mr. McBride's suggestion the convention passed a resolution to use the label, "Michigan Honey," on all honey exhibited at the State Fair at Detroit next fall by members of the Michigan Bee-keepers' Association. This is a very important resolution because Michigan produces an extra high grade of honey; in fact, some of the best honey of the United States is produced in Michigan, and it is only fair that it should be so labeled that the fact may be recognized by the trade.

Mr. C. L. Mears, speaking for the sugar division of the Food Administration, thanked the bee-keepers for their kind cooperation in the distribution of sugar during the past year, stating that although they had not always been able to furnish the bee-keepers with as much as they had asked for, there had not been a single case of grumbling. This is a great credit to the bee-keepers because in some portions of the state the drouth prevented the storing of any surplus, and in many instances the bees failed to gather a sufficient amount to carry them through the winter.

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Get rid of messy, wasteful, labor-making stoves and grates by installing a Williamson Pipeless Furnace. Fits any cellar. One register heats entire home. No need to tear up floors or partitions. Real furnace comfort without pipe-furnace-installing expense. The pipeless furnace is a tried-and-true success. Thousands have been in use for years, saving coal, labor, and giving cozy heat the house over, year after year. The Williamson Pipeless Furnace burns large chunks of wood, hard or soft coal, or coke. All kinds of fuel

look alike to it. Affords both heat and ventilation by drawing cold air from chilly rooms and transforming it into cozy warmth.

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Saves in Many Ways

Made by a concern that has specialized in the making of efficient heating apparatus for thirty years. Does not heat the cellar, but gives sufficient warmth to protect root crops placed there during the winter.

Wonderfully well-made, and very economical to buy as well as to use. Make yours a modern home by installing a Williamson Pipeless. The attached coupon brings an interesting book which fully describes it. Send the coupon today. The year-by-year saving will make you glad you did send the coupon. It means all the difference between an expensively half-heated home and an economically well-heated home. Send the coupon NOW. No obligation.

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Without cost or obligation to me please send book describing the Williamson Pipeless Furnace.

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Address _____

Miss Iona Fowles, of Medina, Ohio, an apiarist, and also assistant editor of "Gleanings in Bee Culture," gave a very interesting and instructive talk on the disease known to bee-keepers as "Disappearing Disease." This disease takes its name from the nature of its behavior in the hive, for it seems to leave and reappear without cause or warning. The cause of the disease is not known and very little is known of how to treat it as it varies extremely under different conditions. Although little attention has been given, the effects of the disease warrant careful investigation, because when an apiary is attacked, even though no colonies are completely destroyed, the bees seem to lose their ambition and seldom gather a satisfactory crop. Miss Fowles has made a systematic study of the disease and her talk was closely followed by those present.

Mr. B. F. Kindig, secretary of the association, read a paper from Mr. C. P. Dadant, of Hamilton, Ill., on "Large Hives," which was discussed by the audience.

Mr. E. A. Leffingwell, of Allen, read a paper on "The Combless Package," which is of special interest now that these packages can be sent by parcel post. He emphasized the necessity of getting the bees as early in the spring as possible, and also that care must be taken in handling the bees after they arrive. It was brought out in the discussion that followed that there is a deplorable lack of business principles on the part of certain southern bee raisers, both queen breeders and shippers of package bees. Care must be taken to order from firms of good reputation.

Mr. B. F. Kindig, State Inspector of Apiaries, spoke at length on "The Honey Resources of the Upper Peninsula." Mr. Kindig spent a month in the upper peninsula last summer, during which time he visited every county except Keeweenaw and found conditions very favorable to bee culture. Alsike clover is sufficiently abundant to be considered a weed by many there, and fireweed and raspberry also abound, giving a practically continuous honey flow from about June 25 until the end of the season, with exceptional yields.

Wintering can be handled as easily there as farther south by experienced bee-keepers. This statement is proven by the fact that there are many bee owners in the upper peninsula who take practically no care of their bees in winter and still succeed in bringing a large per cent of colonies through alive, except in winters when it does not snow sufficiently. Also there is practically no disease in the upper peninsula. Mr. Kindig failed to find a single case of foul brood on his trip. He expects big things from this part of the state when bee-keepers find out the possibilities of the place and begin to move in. Ontonagon, Iron, Dickinson, Menominee and Delta are the counties that appealed to him most strongly as bee-keeping localities. "This is new country and there is plenty of room for all," is Mr. Kindig's report.

The event of the conference was the banquet held in the sun parlors of the Wentworth-Kerns Hotel on Wednesday evening, January 22, at which over one hundred members were present. The Hon. Thomas Reed, speaker of the House of representatives, presided as toastmaster and Senator Scully and Senator Roy Watkins were the speakers of the evening. From among the bee-keepers, brief speeches were given by Mrs. Floyd Markham, Ypsilanti, retiring vice-president; W. L. Cheney, of Mason; E. M. Hunt, of Lansing, and Miss Addie Sly, of Birmingham.

Although Port Huron had bid in for the next meeting, it was decided to have it at Lansing, the date to be announced later.

Twice The Work-Half The Expense



MOLINE UNIVERSAL TRACTOR

"One man and a Moline-Universal Tractor will do about the same work (taking a season through) as two men with four horse teams." — Crumbaugh Bros., Vandalia, Illinois.

Statements such as this from Moline-Universal owners—and we have many of them—support our claim that the Moline-Universal enables one man to do twice as much work at about half the expense as is possible with horses.

With a Moline-Universal you can plow 9 acres a day, double disc 27 acres, drill 35 acres, cultivate 15 to 20 acres, mow 25 to 35 acres, and harvest 30 to 35 acres. Figure out for yourself how long this would take you with horses. Then keep in mind that in case of necessity you can work night as well as day, because the Moline-Universal has complete electrical equipment, including electric lights and self-starter.

As for expense it runs about half what the same work with horses would cost.

Charles J. Deck of McAnthur, N. D., says: "I plowed 60 acres—fuel amounted to \$32.94. It would

have cost me \$82.40 to plow this with 6 horses, not figuring feed for Sunday, or rainy days. I did not have to get up at 5 o'clock every morning either. Mr. Beck did not consider the saving of his own time.

"If I hadn't had the Moline-Universal I would have kept 4 more horses, which are a bigger expense than the tractor," says J. E. Carey of Wilmington, Ohio.

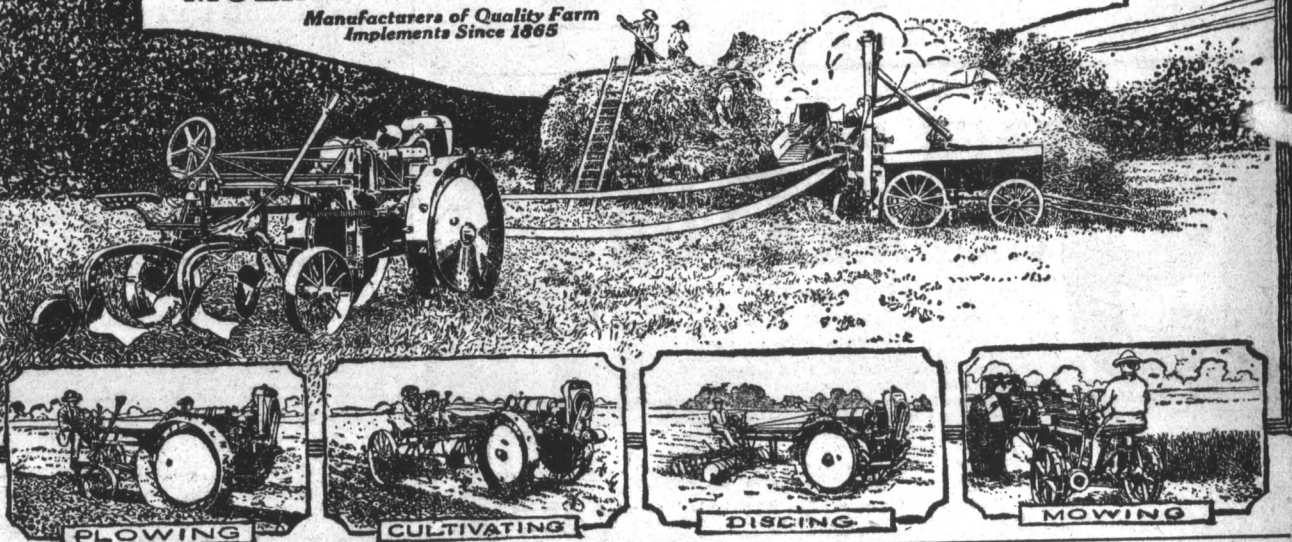
Many other statements similar to this prove that the cost of operating a Moline-Universal Tractor is no greater than maintaining three or four horses, while it will do twice as much work. Then there is another big advantage—belt work. The Moline-Universal has enough power for all ordinary belt power requirements.

"I purchased a 20 x 36 separator and then threshed my grain, pulling it with the Moline Model D. The tractor handled this separator very easily and did fine work. After I had threshed my own grain, I threshed for four of my neighbors, about 350 acres in all." — C. C. Appenzeller, Bouton, Ia.

Considered from every angle the Moline-Universal is the best tractor for you. It does all farm work, including cultivating. One man operates both tractor and implement from the seat of the implement. It will make you money. See your Moline dealer now or write us for full information. Address Dept. 42

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IMPORTED "EDGAR OF DALMENY" Mich. Grand Champion Angus Bull.

Also have four extra fine Angus bulls of serviceable age.

"Best of Breeding"

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W. E. SCRIPPS, Prop. SIDNEY SMITH, Supt.

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TROJAN-ERIOAS & BLACKBIRDS (BLACKCAPS) only. The most fashionable strains of the breed. Great care given to matings and pedigrees. Every animal BRED IN THE PURPLE. Breeders and feeders of many INTERNATIONAL WINNERS. WOODCOTE STOCK FARM Ionia, Mich.

Cloverly Angus Good quality bulls of serviceable age and younger. Inspection invited. Geo. Hathaway and Son, Ovid, Mich.

Registered Aberdeen Angus. Seven bulls from eight to twelve months old. Plenty of size best of breeding. Price \$200.00 each. Come and see them. Inquire F. J. WILBER, Olio, Mich.

Registered Ayrshires FOR SALE

We have a number of fine heifers and bull calves to offer at bargain prices. Write for description. Michigan School for the Deaf. W. L. HOFFMAN, Steward, Flint, Mich.

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Gov. Chene Golden Noble & May Rose breeding. Tubercular tested by state. Halcyon Sequel born 1912. Great grand son of Gov. Chene sires and grand sires are all A. R. breeding. Price \$250 F. O. B. Avondales Hope born Mar. 25, 1917. Sire Halcyon Sequel Dam Gertrude of Halcyon. Farm price \$150 F. O. B. Lucella's Duke of Avondales born Jan. 1, 1918 Sire Lord Sunrise Dam Lucella's Maid. Price \$100 F. O. B. Avondales Hero born Jan. 10, 1918. Sire Halcyon Sequel Dam Serena of Pittsfield. Price \$200 F. O. B. Avondales Joy born Feb. 8, 1918. Sire Halcyon Sequel Dam Winkle of Pittsfield. Price \$125 F. O. B. Avondales Mark born Apr. 9, 1918. Sire Lord Sunrise, Dam Popular Polly. Price \$100 F. O. B. Come and look our herds over. AVONDALE STOCK FARM, Wayne, Mich.

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1695 lbs. more milk and 93 lbs. more butterfat is the average production over dams of the first six heifers sired by a purebred Guernsey bull owned by a Maryland Bull Association. A Guernsey bull can likewise increase the production as well as the value of your herd. Write a postal now for our free booklet, "The Grade Guernsey."

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Fine Reg. Guernsey

7 yr. old cow and her heifer calf 1 mo. old right in every way except lost one quarter—\$300 buys this pair. J. M. WILLIAMS, North Adams, Mich.

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

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

For Sale Guernsey bull of serviceable age and choice breeding. Grand dam has A. R. yearly record of 838 lbs. of butter fat. Bull at farm near Ludington, Mich. GEO. C. HUMPHREY, Madison, Wis.

GUERNSEYS Registered bulls two years old and under grade heifers all ages, write your requirements. WALTER PHIPPS FARM, 30 Alfred St., Detroit

For Sale Registered Guernsey Bull 15 mo. old, also a few Bull calves. E. J. HIMELBERGER, R. 3, Lansing, Mich.

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Offer Bull Calves sired by sons of Pontiac Korndyke, Hengerveld DeKol, Pontiac Dutchland, or Admiral Walker Pletertje.

Do you want a Pontiac in your herd? Pontiac State Hospital, Pontiac, Mich.

Stock Ads. Continued on Page 231

Fitting Stock to Farms

(Continued from page 206).

compete successfully with the other breeds. She is not built to travel long distances for her feed, and being a heavy feeder she would have to travel much farther than the smaller cow to gather her supply.

It is claimed by many breed advocates that this breed is better adapted to commercial milk production than to butter-fat production. This is a mistake, for even though the per cent of butter fat is lower than is the case with some of the other breeds the amount of milk produced is so much greater that it more than offsets the difference in the fat per cent. Then the value of the skim-milk for feeding young animals is a question that one cannot afford to lose sight of at the present time. The points in favor of the breed are its size, amount of milk produced, value of the calves which are very large and make veal quickly. These points are becoming of very great importance as the country comes to depend more on calves and cows for its meat supply.

For rough and rolling lands, or on

breeds are adapted to the production of prime beef. As a result they have gained great popularity on farms and ranches where beef production is the main business. Both of these breeds are finding favor in Michigan where the present feed and labor situation is compelling many farmers to turn their attention to beef cattle breeding and feeding, or go out of the cattle business entirely. The Galloway breed is adapted to beef production in a cold climate.

The big draft horse is the product of heavy hauling. To breed and develop draft horses successfully one must have cheap feeds and profitable work for the mares. Naturally, the corn belt is the place where the draft horse finds popular favor. No great draft horse region can develop unless there is abundant feed and profitable work for the breeding mares to do. The colt is the mare's by-product; she is kept primarily for work. The large diversified farm with its abundance of pasture and feed crops affords ideal conditions for keeping draft mares



Dorset Ewes Are Favorites for Producing Early Lambs.

farms where a small herd is kept as a complement to other branches of agriculture. Shorthorns have held supremacy in the northern states, and Jerseys in the south. The light breeds have an advantage on hillside pastures. On many farms, especially situated a considerable distance from market and good shipping facilities, the cows are not fed any too liberally so that there is a demand for Ayrshires, Jerseys and Guernseys. For colder regions Ayrshires are the best breed for rough and rolling lands. In close proximity to large cities where there is a limited demand for milk with a high per cent of butter-fat, Jerseys and Guernseys may be kept at profit.

As the nutritive value of milk and cream becomes better understood, there is sure to come an increasing demand for these products from a high-class city trade; then, the man who is producing rich milk and high quality cream from Jersey and Guernsey cows will receive the premium which he deserves. The failure of the public to appreciate the food value of a superior product has held the breeders of Jersey and Guernsey cattle at a disadvantage in competing with the Holstein-Friesian breed.

The Holstein cow is a large animal bred along dairy lines. She is the best beef animal possessing the dairy type. The Shorthorn is a large animal bred along beef lines. She is the best dairy animal possessing the beef type. In localities where milk is the main product the Holstein cow is gradually replacing the Shorthorn. In localities where both beef and milk production are given due attention the Shorthorn holds its own and seems destined to do so. Cattle are needed to convert the rough feeds of many farms into cash products. Under such conditions the Shorthorn will live, raise calves and give some milk. It is true that the farmer could make more milk if he kept strictly dairy bred cows and fed them better, but this would limit his farming operations along other lines.

The Hereford and Polled Angus

Other breeds possess merit along certain lines. Sheep are particularly susceptible to different conditions of soil and climate. The Shropshire and Hampshire breeds are popular in localities where the land is fertile and feed abundant. The smaller Southdown with its compact carcass and greater vigor is very popular further south where it has demonstrated its ability to adapt itself to soil and climatic conditions and produce a high quality of mutton. The Dorsets, on account of their ability to produce lambs in the fall and give an abundance of milk for them, have found their place on the specialized farms where young lambs are produced for an exclusive trade.

The fine wool breeds, on account of their ability to furnish a fleece of high value have found favor in the range country and on large sheep farms. To cross with these fine-wool breeds Lincoln and Cotswold rams will always be needed, their massive frames and early maturing qualities and heavy fleeces adding greatly to the value of the lambs produced when mated with Merino, Delane and Rambouillet ewes.

\$7

50 After 30 Days' Trial

Caution! Vibration of the bowl will quickly cost you more money in cream waste than the price of your separator. U.S. Gov't. Bulletin No. 201 says a perfectly true motion of the bowl is absolutely necessary. The bowl is the vital part of the separator—the part where cream separation takes place. The patented Melotte bowl is SELF-BALANCING! It is the ONLY ball bearing separator bowl. It CANNOT vibrate. It hangs down from a single ball bearing and spins like a top. Can't get out of balance—can't cause currents in the cream—can't remix cream with milk.

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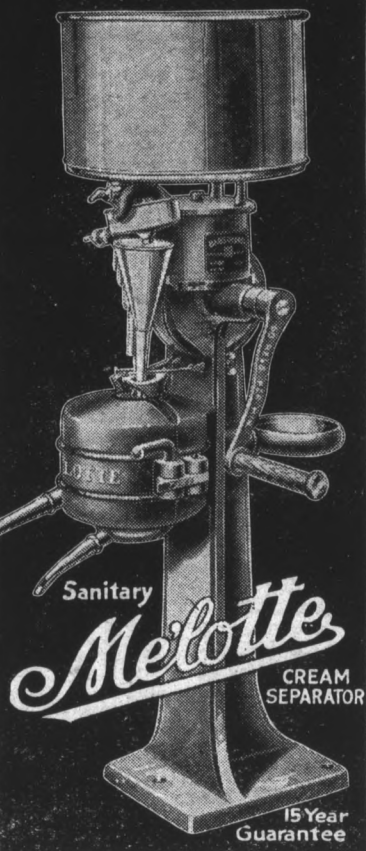
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If, after 30 day's trial, you are convinced—as we know you will be—that the Melotte is the best separator on the market; that it gets more cream and bigger profits; that it will wear longer, work easier and give greater satisfaction than any other separator—send only \$7.50. Buy on our rock-bottom direct-to-you offer. Only \$7.50 as a first payment, if satisfied after trial—balance in small monthly payments. Pay right from your increased profits! Let the Melotte pay for itself while it works for you! Get full particulars. Write or send the coupon at once.

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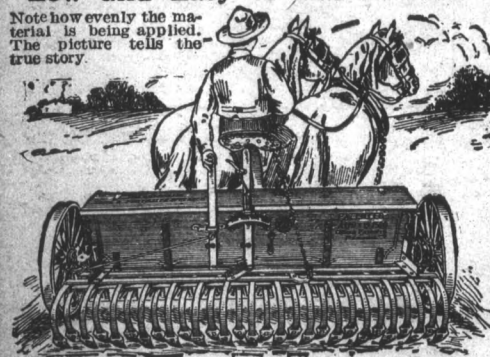
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Imagine a GIANT of POWERFUL STRENGTH, then you have a mighty good vision of the new GUARANTEE LIME and FERTILIZER SPREADER.

Consider, please, the superior features, such as the harrowing attachment, super-feed shifting clutch and spreading device. For durability, simplicity and practicability, gentlemen, there never has been a spreader to equal her, for spreading lime, ground limestone, commercial fertilizers, etc., EVENLY, or if you so desire she will sow in rows at a moment's notice. She works with ease, but what I like about her most is the sturdy way she is built. Place your order early to avoid the rush. You can save \$15 by being the first one in your county to purchase a GUARANTEE SPREADER. BETTER WRITE US TODAY. Thank you.

Guarantee Mfg. Co.,
Mail Division Dept. B. 51
Woodsboro, Maryland,

EVERBEARING STRAWBERRY
Our free Catalog describes and illustrates a full line of choice small fruit plants.
J. N. ROKELY, R. 6, Bridgman, Mich.

Strawberry plants 23 varieties, seed beans, oats and barley. Instructive list free. Pleased to mail you one.
MAYER'S PLANT NURSERY, Merrill, Mich.

When writing to advertisers please mention the Michigan Farmer.



Help Win Victory Against Sickness—Death.

Destroy old style outhouse or privy which breeds disease. Install our sanitary and practical INDOOR CHEMICAL CLOSET. No odor, no care, no plumbing. Ready in 5 minutes. Will last a lifetime. Beautifully enameled and strongly made. Oak seat. Emptied once a month. Absolutely guaranteed. Worth \$25.00, our price \$15.75. Special offer. Send \$15.75 at once and we ship to your address. FREE all supplies to same for six months, also a pair beautiful lace curtains. FISHLEIGH & CO., Dept. 724 Chicago, Ill.

tain lines and when used for definite purposes, but the above mentioned breeds have found popular favor.

The many attempts to introduce bacon hogs into corn belt states have met with failure. Just as the lard hog is best for the corn belt it is poorest for the eastern and southern states where feed is less plentiful and where other feeds than corn are used in finishing hogs for market. Berkshire hogs seem to do well in the corn belt as well as on eastern and southern farms. Yorkshires and Tamworths are quite popular in the northern states and Canada. White hogs do not do well in the south, because of the tendency of their white skin to sunburn and blister.

Where poultry is raised as a specialty and eggs are the chief product, White Leghorns are popular favorites. The fact that this breed lays white eggs and that white eggs command higher prices in most markets make it important that poultry-keepers keep White Leghorns or one of the breeds that lay white eggs. For the farmer's flock that furnishes both eggs and meat, one of the dual-purpose American breeds will give the best returns. The large Asiatic breeds possess excellent table qualities and may be used to advantage in crossing with the smaller breeds in producing fancy table fowls.

L. J. M.

Queries Answered

MARKET VALUE OF SILAGE.

As I have lost my only boy in the war, have sold off all my stock but two cows and am going to quit farming. I have the silo full of ensilage and want to sell it, or some of it, to some neighbors; and we don't know what it is worth per ton. Please tell me what you think it is worth, made of whole corn, sunflowers and a few soy beans, but mostly corn.

Clinton Co.

J. H.

As has been explained many times in the Michigan Farmer, there really is no market for corn silage, consequently it is difficult to name a price. The only way we can do is to compare it to some other food for which there is a market. Chemical analysis shows that corn silage and timothy hay contain about the same proportion of food nutrients. Of course, corn silage contains much more moisture which is not figured in the ration and it is estimated that one ton of timothy hay is equal in food value to three tons of good corn silage. Therefore, if timothy hay is worth \$27 per ton, a ton of corn silage would be worth about \$9.

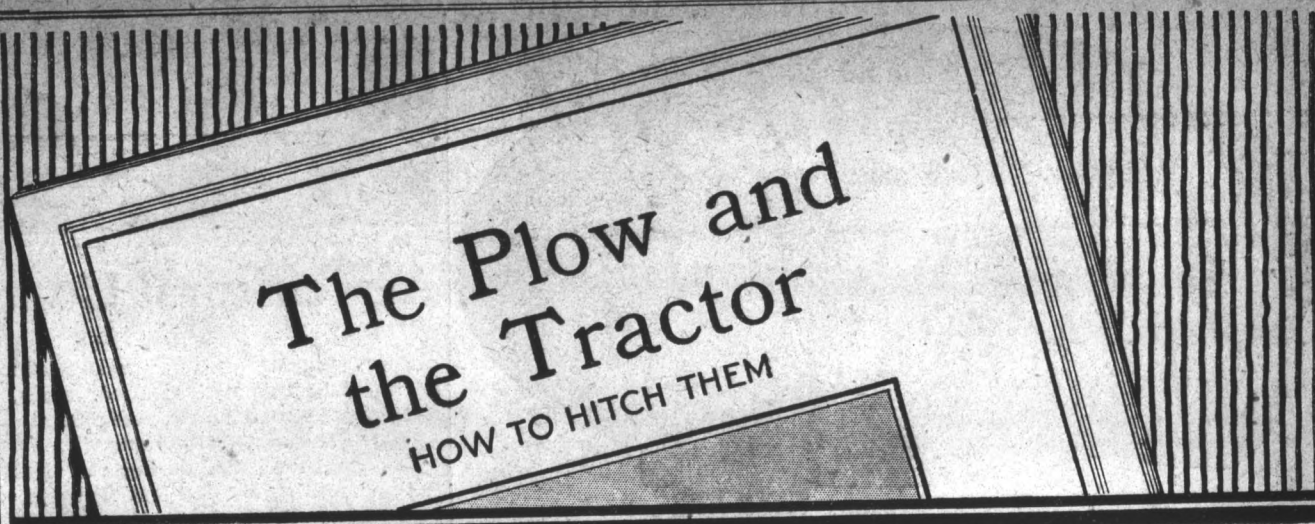
C. C. L.

CLOVER HAY FOR ROUGHAGE.

I would like to feed my cows a balanced ration. I have clover hay, coarse corn meal, ground oats, bran, middlings. What can I purchase to make a proper feed, and what amount shall I feed?

With clover hay only for roughage, it is not necessary to purchase cottonseed meal or oil meal to balance the ration, where you have corn meal and ground oats and bran as concentrates. Clover hay is in itself a balanced ration for dairy cows so far as food nutrients are concerned, but, of course, it is too bulky to feed alone, but the ration is much simplified from the fact that we only have in this case to consider the concentrates. If you will mix the corn meal and ground oats equal parts and then add bran and wheat middlings equal parts, you will have just about as near a balanced ration as you can get. I mean to mix 100 pounds of meal, one hundred pounds of ground oats, 100 pounds of bran and 100 pounds of middlings together and feed this as a grain ration with your clover hay, feeding a pound of grain of this mixture for every three or four pounds of milk which the cow produces in a day.

C. C. L.



May We Send You This Booklet Free?

No matter how efficient a machine a farm tractor may be it cannot do good plowing unless the plows are properly hitched and adjusted. This is a subject of vital importance to every tractor owner.

A Hyatt Bulletin explains this subject of proper hitch in a very clear and easily-understood manner. We would be glad to send you a copy of this bulletin free.

You may be already acquainted with one kind of Hyatt Service. There probably are Hyatt

Bearings giving this service in your tractor—although so faithfully and so absolutely care-free that you may never have discovered them—never had occasion to even look at them, because they serve for the life of the tractor without requiring adjustment or any attention but occasional oiling.

Just as a piece of additional service we will send, without any obligation on your part, a copy of this splendid article on tractor hitches.

A post card request with your name and address will bring a copy.

HYATT ROLLER BEARING COMPANY

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"Top-Notch" HOLSTEINS

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

McPherson Farms Co., Howell, Mich.

"Winwood Herd"

REGISTERED
Holstein-Friesian Cattle
Sire in Service
FLINT MAPLECREST BOY

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

JOHN H. WINN, Inc.

Lock Box 249, Roscommon Mich.
Reference Roscommon State Bank.



Feeding
Qualities

The Holstein-Friesian breed requires an ample supply of food, but it is by no means choice as to the quality of the food. They freely consume roughage and transmute it into valuable products—milk, butter, veal, beef.

If interested in

HOLSTEIN CATTLE

Send for our booklets—they contain much valuable information.

HOLSTEIN FRIESIAN ASSOCIATION OF AMERICA, Box 164, Brattleboro, Vt.

On account of ill health will sell at PUBLIC AUCTION On Feb. 11, 1919

at farm 2½ miles east of Hubbardston, 11. Head of Registered Holsteins as follows, No. 1 Peggy Hengerveld Beets, No. 2 Michthilde Beets, 2 years old. No. 3 Colantha Segis Belle Korndyke, No. 4 Colantha Segis Betty Korndyke, No. 5 Holly De Kol Clothilde Wayne DeKol and her yearling daughter, No. 6 Gretchen Aaggie and her yearling daughter, also twin bull calves of No. 5. Will also sell all stock, farm tools and my farms of 80 acres also 104½ acres. Buyers coming from a distance come to Pawamoo and arrangements will be made to meet trains if notified day before sale.

JOE. S. HARRIS,

Maple Rapids, Michigan

The Traverse Herd

We have what you want in BULL CALVES, the large fine growthy type, guaranteed right in every way. They are from high producing A.R. O. ancestors, Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

CLUNY STOCK FARM

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

Write us your wants.

R. BRUCE McPHERSON, Howell, Mich.

DISPERSAL

10 A. R. O. Holstein Cows, 4 to 6 years old, records up to 26 lbs. in 7 days, 3 Heifers 2 to 3 years old, 4 yearling Heifers from A. R. O. Dams, 5 Heifer calves.

Cows all fresh since October save one, due this winter. All under Government supervision for control of tuberculosis. Herd located at Fabius Station near Three Rivers, Michigan.

Peaceland Stock Farm, Three Rivers, Mich.
Chas. Peters, Herdsman, For breeding and prices
Write O. L. BRODY, Port Huron, Michigan

THE HOLSTEINS

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

L. E. CONNELL, Fayette, Ohio.

Registered and high grade Holsteins. Eight cows from three to eight yr. old some fresh others to freshen in Feb. and Mar. from 30 lb. sire, others bred to a 30 lb. sire good dairy cows. Will sell one or the eight.

HENRY S. ROHLFS, R. 1, Akron, Mich.

Young bull ready for service from a 21.27 lb. record (just made) 3 yr. old daughter of Sire Korndyke Veeman Hengerveld No. 10008. Sired by a 32 lb. son of the \$30,000 bull. Other bulls for sale by the same sire. Write for pedigrees and prices.

SINDLINGER BROTHERS, Lake Odessa, Mich.

For Sale at a bargain. A few young bull calves from high producing stock. Buy one of these fine calves and raise a bull for next fall.

A. F. LOOMIS, Owosso, Mich.

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

Parham's Pedigree Stock Farm offers Reg. Holstein cattle, Chester White Swine, extra bargains in calves and fall pigs. Bulls half price. R. B. PARHAM, Bronson, Mich.

\$22.46 above cost of feed for Jan. fresh July 2 record of dam's dam of bull calf adv. M. F. Feb. 1 \$9.52 for Jan. fresh April 20 test 4.15 2 yr. old sister to dam.

M. L. McLAULIN, Redford, Mich.

For Sale Registered Holstein heifer bred dam gives 125 lb. milk a day. Price \$300.00 JOHN EBELS, R. 2, Holland, Mich.

Reg. Holstein Bull Calves dandies at \$50 reg. and del. J. ROBERT HICKS, St. Johns, Mich.

\$50.00 Buys a Reg. Holstein Bull Calf. Born Oct. 30 1918, delivered at any express station in state. Also have a yearling. E. E. STURGIS, St. Johns, Mich.

\$1100 Buys six registered Holstein heifers all past 2 yr. old and due to freshen soon from a 33 lb. bull. B. B. REAVEY, Akron, Mich.

Reg. Holstein bull one year old. An exceptionally good individual. Sired by a 30 lb. bull and his dam has A. R. O. record of 15.75 lb. at 25 months. Price \$160. V. J. BROWN & SON, Jonesville, Mich.



Additional Stock Ads. on Page 233



Take Hard Work Out of "Chores"

GET a STAR Litter Carrier and get rid of hard work in cleaning out the barn. Even if your time was worth only 10 to 15 cents an hour, a STAR Carrier would pay for itself and more the first year you use it.

See the STAR dealer in your town and ask him to show you one of the three styles of STAR Carriers. In STAR Carriers you get features which no other carrier can offer. Rapid lowering—you don't have to work to lower the tub—simply pull the trip chain. Quick hoist. Interchangeable feed and litter carriers operating on same

tracks by simply changing the tub. STAR Carriers are but one of the many articles in the complete line of STAR Equipment.

THE STAR LINE
Barn Equipment
Litter Carriers
Harvester Hay
Tools
Door Hangers
Garage Equipment
Coaster Wagons
Tank Heaters and
other Farm Specialties

Send For The STAR Catalog

If you are thinking of building a new barn or remodeling your old one, let our architectural department show you free STAR Barn Plans or draw up special plans for you. Ask for Catalog No. 120.

HUNT, HELM, FERRIS & CO., HARVARD, ILLINOIS
Eastern Branch: Industrial Bldg., Albany, N. Y.

STAR

Barn Equipment

Build Once Build Right

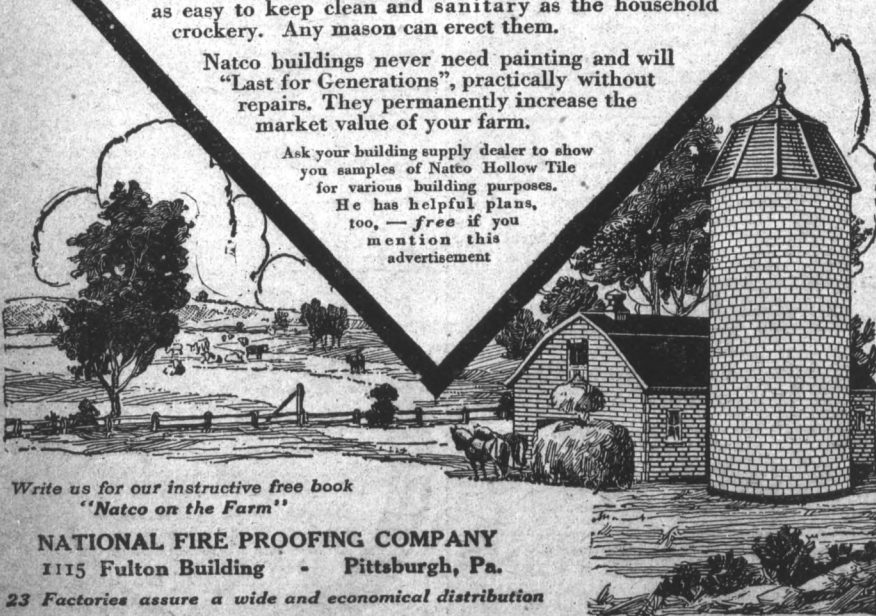
It is given to but few farmers to erect more than one set of buildings. It pays to build right the first time. You should therefore consider the advantages of Natco Hollow Tile. An ever-increasing army of farmers are finding it a fire-safe, permanent, economical and sanitary building material.

Natco Hollow Tile

walls are insulated by dead-air spaces. They keep out the frost of winter and the heat of summer. These walls are as easy to keep clean and sanitary as the household crockery. Any mason can erect them.

Natco buildings never need painting and will "Last for Generations", practically without repairs. They permanently increase the market value of your farm.

Ask your building supply dealer to show you samples of Natco Hollow Tile for various building purposes. He has helpful plans, too, — free if you mention this advertisement



Write us for our instructive free book
"Natco on the Farm"

NATIONAL FIRE PROOFING COMPANY
1115 Fulton Building - Pittsburgh, Pa.

23 Factories assure a wide and economical distribution



Agricultural Conditions in Europe

(Continued from page 195).

Here, then, we have the great needs of the allied countries: food, feeds, fertilizer, fiber and farm machinery.

The Stock Situation.

As has been said, during the first twelve months, France lost forty per cent of her sheep. Now she has only about fifty per cent of the sheep of her pre-war days. Likewise she has lost one-seventh of her cattle. Her stock of horses has been greatly reduced. England has suffered a five per cent reduction of her sheep population and a material reduction in her horse stock. Her herds of breeding cattle are, however, practically intact although the supply of other cattle has dwindled somewhat. Because of the scarcity of concentrates in the countries, all cattle were thin.

The Reconstruction Program.

The Belgians love the Belgian horse and they will have no other. It will be necessary to re-stock Belgium with horses from this country. Probably no horses will be shipped to either England or France. While their horse stocks have suffered some depletion, tractors have come in to take the place of many of them.

It may be pointed out that while horses sold from six to twelve hundred dollars apiece in England during the war, this was not primarily due to the fact that the horse stocks of the world were low, but rather to the fact that on account of the shipping dangers and urgent need of other things, but few horses could be imported from anywhere.

With regard to cattle, it has been noted that the breeding stock of England is practically intact. It will be necessary for this country to supply meat rather than breeding animals. Moreover, they cannot buy the cattle because they would also have to import the feed for the cattle since the production of cattle feeds and roughages has not been material for some time. Over there, however, there is an optimistic tone in the cattle market. At the sale in Scotland mentioned before a six months' old calf brought the sum of \$22,000.

During the next year these countries must import approximately one hundred and eighty-five million bushels of wheat. The climatic and rain fall conditions are not conducive to wheat growing. They have plenty of rain but it comes so regularly that the wheat cannot ripen and cure out without considerable damage. Counting both years of reconstruction, namely the first and second, it is estimated that between five and six hundred million bushels of wheat must be imported. We will have to supply more wheat the second year than the first, due to the damming up of supplies from other sources during the war.

The sugar producing regions must be rehabilitated before any production can be forthcoming. The factories must be rebuilt and there is an element of danger in working the soil due to the unexploded shells that have buried themselves in it.

The demand for wool and cotton bids fair to extend ahead for a number of years. The cotton expert on the commission estimated that it would take from seven to ten years for the cotton production to catch up with the normal cotton consumption. Wool is also greatly demanded and the home sheep supply has been cut down to an alarming extent.

The commission felt that so far as agriculture is concerned, at least, the

devastated portions of Belgium and France should be rehabilitated and rebuilt by German labor and at German expense. If Hun labor were turned loose to go home and the only thing being that the work be done at German expense, this Hun labor would compete with allied labor and German industrial products would come into France at a less price than they would be produced for there, with the result that France would be further hampered. Moreover, reclaiming these fought-over lands involves an element of danger, just how much the army officers did not care to say, but they were agreed that this was the case. It then should fall to the lot of German labor to remove this element of danger.

THE IMPORTED CURRANT BORER.

OFTEN, in the spring, the leaves of our currant or gooseberry bushes may take on a sickly appearance due to the presence of the imported currant borer. This destructive "worm" burrows in the smaller canes eating the pith and seriously interfering with the development of the foliage and of the fruit, resulting shortly in the death of the cane. The presence of this insect may be first noticed by the wilting or stunting of the young leaves in the spring.

The borer is of a dirty white color and about half an inch in length. Its head is a brownish color and the body, if seen under a magnifying glass, appears covered with many tubercles. The adult is one of the clear-wing moths, about three-fourths of an inch in length. Its transparent wings have a border of golden purple and a bar of the same color across the fore wing. The eggs are deposited singly on the bark, and the larvae upon hatching bore into the stem, burrowing both up and down through the pith, killing the cane. The borer is nearly full-grown by winter when it hibernates in its burrow. The following May the larva eats its way out to the surface of the stem, pupates and early in June the adult moth appears. Thus there is but one brood a year.

When the foliage commences to expand in the spring, the mutilated stems can be distinguished by the sickly appearance of the leaves. These canes should be cut out and burned, being sure to cut below the tunnels. If this practice is kept up for a few years very little trouble will be experienced.

D. B. WHELAN.

OVERSEAS ARMY HEAVY USER OF DRIED VEGETABLES.

UP to the date of the signing of the armistice General Pershing had ordered fifty million pounds of dehydrated vegetables for the use of the American Expeditionary Forces. To meet this enormous demand at the beginning, the subsistence division of the War Department found that there were but three small plants in the entire United States that were able to supply dehydrated vegetables. Numerous food manufacturers were therefore induced to go into the business of producing dehydrated vegetables, and in addition Canadian manufacturers were also called upon to supply a portion of these commodities.

The use of dehydrated product saved sixty six and two-thirds per cent cargo space over the amount required for fresh vegetables at the time that cargo space was almost as valuable as life itself.

When You Write to Advertisers Please Mention This Paper.



FEEDING BEFORE FRESHENING.

I am feeding barley and oat chop half and half, eight pounds per day, and two pounds of cottonseed meal, to cows that are giving about 40 pounds of milk. For roughage I feed corn stover, oat straw and clover hay. Does it harm a cow that will freshen this spring to feed one pound of cottonseed meal a day?

Eaton Co.

J. R. L.

It is not a good plan to feed cottonseed meal to cows just before freshening. In the first place, it is constipating and at that time cows should have a laxative diet. Oil meal would be much better. That also is pretty concentrated to feed very much of just before freshening. I would prefer wheat bran to be fed at that time, or ground oats.

Feeding cottonseed meal when a cow is well along in the period of pregnancy is not considered good for the unborn calf. Cottonseed meal must be fed with a great deal of judgment at any time or else it is liable to be injurious and no young animal, whether it is calf, or pig, or lambs, ought to be fed cottonseed meal. If fed liberally it will injure them every time.

After cows freshen, before they are pregnant again, cottonseed meal can be fed with safety if too large quantities are not fed at one time.

PIT SILO.

In the April 27 issue of the Michigan Farmer, page 547, you tell of your silo in the ground. What is the best way to elevate the silage at feeding time? I have a silo nine feet underground and appreciate the underground part very much. Though I have to carry the ensilage up a ladder, it beats chopping out frozen ensilage. Give me a better method of getting out ensilage.

Allegan Co.

V. P. S.

The best way I ever heard of in getting silage out of a pit silo is to have a big bucket and elevate it by means of a windlass just as they elevate water out of an excavated well. You can make a bucket out of a barrel by cutting it in two in the middle. Then fill this half barrel full of ensilage and windlass it up to the top. This, of course, is much more convenient than attempting to carry the silage up a ladder. Any farmer can rig up a roughly made windlass in this way readily or you can use block and tackle attached to the top of the silo and draw up the half barrel of silage with this.

CORN FODDER AND BEAN PODS.

Will you please give me a balanced ration for dairy cows? I have corn fodder, mixed hay, bean pods, corn and oats. Can buy all kinds of feed.

Garry Co.

H. B.

By feeding bean pods with the corn fodder you are combining a protein and a carbohydrate roughage which helps balance the ration. The mixed hay, of course, is not as rich in protein as clover hay and the roughage foods in the ration are still deficient in protein so you must have some concentrate richer in protein than corn and oats to have an economically balanced ration. I would suggest that you feed these roughage foods liberally—what the cows will eat up clean without waste, and that you grind the corn and oats equal parts by weight and mix them half and half with wheat bran. Then you should feed besides at least two pounds of oil meal per day and a sufficient amount of the corn, oat and bran mixture to make a pound of grain per day for every four pounds of milk produced in a day if the milk tests less than four per cent and a pound of grain per day for every three pounds of milk per day produced, if the milk tests more than four per cent.

C. C. L.



The Greatest Hour of the Dairy Farmer

NOW that the war is over, the farmer's responsibility and opportunity are greater than ever—for the American farmer and dairyman must literally feed the world. It means greater production and getting the *most* out of that production. Waste is as unpatriotic now as it was during the war.

But there is many a farmer who would not think of planting a hundred rows of corn and only harvesting 95 rows, who is now using a fixed feed separator and wasting a good part of his butterfat through turning under speed. Even tho the proper separating speed is marked on the handle, tests show that 95 per cent of *all* separators are turned below speed. If you turn a Sharples Suction-feed Separator below speed, you skim clean just the same—due to the patented suction feed. No other separator has this principle.

SHARPLES

SUCTION-FEED CREAM SEPARATOR

"Skims Clean at Any Speed"

Sharples is the pioneer American Separator—invented, perfected and preferred in America. It is the product of the greatest factory of its kind in the United States—and all American owned. Write for the interesting, profitable Sharples story and Sharples Book of Old Songs. It's free. Address nearest office, Dept. 18

"There are no substitutes for dairy foods"

THE SHARPLES SEPARATOR Co., West Chester, Pa.

Sharples Milker—the ONLY Milker with a Squeeze

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Produce More Food

INCREASE your production of beef and dairy products with a

Lansing

Vitrified Tile Silo—the silo that lasts indefinitely without upkeep expense. Never needs painting—never affected by weather conditions. Built with "half-lap" joined blocks, reinforced with twisted steel. Steel hip roof—steel chute—fireproof. Get your silo now—beautify your farm—and be ready for your silage crop. Write for catalog.

J. M. PRESTON CO.
Dept. 309 Lansing, Mich.
Also get our offer on Climax Silage Cutter and Bidwell Thresher.



Fordson Tractor for sale, used ten days, price seven hundred dollars, F.O.B. your station. W.S. EWING, R.F.D. Marquette, Mich.

CATTLE

SHORTHORNS for milk and beef are raised in the BUTLER HERD. Young bulls for sale. ROSEMARY FARMS, Williamston, Mich.

Stockers & Feeders For Sale

130 Shorthorn Steers ave. 1065 lbs.
170 Hereford Steers ave. 980 lbs.
2 cars of yearling Herefords ave. 750 lbs.
2 cars of Shorthorn yearlings reds and roans. These steers are dehorned and in good flesh. Wapello Co. Ia. is noted for its good cattle. Write JOHN CARROW, R. 3, Ottumwa, Ia.

For Sale 2 red Shorthorn bulls, 7 and 10 months, good milking strain. IMLAY CITY, Mich. OHAS. WARNER, Jr.,

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

Three Young Shorthorn bulls, Avondale Breeding. For Sale. BEDELL & WHEATLAKE, R. 5, Big Rapids, Mich.

For Sale Registered Red Poll calves of both sex of choice. Inquire of WILL COTTLE, R. 1, West Branch, Mich.

For Sale Registered Jersey Cattle of both sex. Smith & Parker, R. 4, Howell, Mich.

Maple Lane R. of M. Jersey herd, Bulls, bull calves and heifer calves sired by a nephew of the new World's Champion, Sophie's Agnes. Also R.I.R. Cockerels, both combs. Irwin Fox, Allegan, Mich.

Hillside Farm Jerseys, offer 3 yearling bulls, backed by tested dams, and sired by a double grandson of Royal Majesty, first prize & junior champion at Mich. State Fair, good individuals. C. & O. Deake, Ypsilanti, Mich.

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

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

Meridale Interested Owl No. 11311 heads my herd, bull calves from this great sire and out of R. of M. dams for sale. C. B. WEHNER, Allegan, Mich.

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

The Wildwood Jersey Farm.
Bulls for sale by Majesty's Oxford Fox 13424 and Eminent Ladys Majesty 15084, and out of R. of M. Majesty dams. ALVIN BALDEN, Capac, Mich.

Herefords

5 Bulls 9 to 14 months old Prince Donald, Farmer and Perfection Fairfax breeding.

ALLEN BROS., Paw Paw, Mich.

Michigan Herefords

REPEATERS AND PERFECTIONS
Young stock for sale at all times.

80 head in herd, all ages.
Farm 5 miles south of Ionia. Visitors welcome. JAY HARWOOD, Ionia, Mich.

CITIZENS TELEPHONE 122-4
Buy a Hereford Sire Improve your Stock

Hereford Cows For Sale

4 head, registered, 4 years old, and bred. Will contract calves at one-half price of cows, if taken at once. Also two bull calves 8 months old for sale.

COLE & GARDNER, Hudson, Mich.

Lakewood Herefords Strong in the blood of that breeds true to type and predominates the leading show and sale rings of the country. A few high class young bulls for sale. Come see, and compare. Farm adjoins town. Citiz. Phone 25.
E. J. TAYLOR, Fremont, Mich.

Herefords Bob Fairfax 49427 at head of herd. Stock for sale, either sex, polled or horned, any age. Priced right. EARL O. McCARTY, Sec'y, H. B. Ass'n, Bad Axe, Mich.

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

Francisco Farm Shorthorns
We maintain one of Michigan's good herds of Scotch and Scotch Topped cattle. They are well bred, properly handled and price reasonable. Come and see; we like to show them.
F. P. POPE, Mt. Pleasant, Mich.

Shorthorn Seven Scotch and Scotch Topped bulls for sale. Price reasonable.
W. B. McQUILLAN, R. 7, Howell, Mich.

BIDWELL SHORTHORNS

For Beef and Milk.

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

BIDWELL STOCK FARM,
Box B, Tecumseh, Mich.

Richland Farms

Shorthorns

Home of the Mich. Champions. We have just purchased the entire herd of Scotch cattle belonging to the Estate of the late A. D. Flintom, Kansas City, Mo. About Feb. 1st. we will offer a choice lot of young bulls for sale.

C. H. PRESCOTT & SONS,
Office at Tawas City, Mich. Farms at Prescott, Mich.

For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Archers Hope, Avondale, Maxwanton Sulton and White Hall Sulton by the Oacolin Co. Shorthorn Breeders Ass. JOHN SCHMIDT, Sec. Reed City, Mich.

Shorthorn Bulls ready for service of the choicest breeding. Write me you want, A. A. PATTULLIO, R. 4, Deckerville, Mich.

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

STOCK ALL SOLD

CLARE RIGGS, Mason, Mich.

Oakwood Shorthorns. Three bulls sired by Gloster Boy 489681, 9 to 12 months old.
COLLAR BROS., R. 4, Conklin, Mich.

Milking Shorthorns of most noted families either sex, all ages, write OSCAR SKINNER, Pres. Central Mich. Shorthorn Ass'n., Gowen, Mich.

Scotch Shorthorn. A fine lot of young bulls for sale. Phone Pontiac 715F3 or Orion Exchange. John Lessiter & Sons, R. 1, Clarkston, Mich.

For Sale 2 yr. old Scotch herd bull sired by Valiant 38720, a Lespedeza Farm product.
LAURENCE P. OTTO, Charlotte, Mich.

Additional Stock Ads. on Page 236

Pay Nothing Down - Nothing Until 60 Days

Combined
Disc and
Wing Bowl
Has 8,000
Revolutions
Per Minute

Built for a
Lifetime
of Service

Skims to the
Inerest
Trace—
Gets 99.99%
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What a
Few Users Say
"Works to perfec-
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Centerville Sta., N. Y.
"More than satis-
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"Has more than paid
for itself in the few
months we have had
it."—S. A. Duree, Do-
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"Easiest running
and most perfect
skimming separator
I have ever seen."
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"A perfect skim-
mer."—E. Hath-
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No words that we can say—no picture, that we can show—can convince you so completely as a trial in your own home that the "Majestic" is just the separator you want. At our remarkably low price the Majestic would be a wonderful money-saving bargain even were you to pay all cash with your order. But we do not ask you to send one penny with your order or make any deposit. You pay nothing at all for 60 days and then only the first small payment in case you are perfectly satisfied.

Pays for It-
self Faster
Than You
Pay Us

Just fill out the coupon below. Mail it to us without a cent of advance payment. We will at once send you a Majestic Separator for you to use as your own for 60 days. Put it to the severest tests. Skim warm or cold milk with it and see how closely it skims. The direct Babcock Test (the severest known) proves that the Majestic gets 99 and 99-100% cream from whole milk—practically 100%. Notice the simplicity and solidity of construction—nothing to get out of repair and built for a lifetime of service. See how easily it runs—how quickly and easily it is cleaned. If you decide to keep it, make the first small payment 60 days after it arrives and pay balance in 5 equal 60 day payments, giving you a full

Year To Pay No Interest

If for any reason at all, you decide not to keep the separator, return it. We will pay freight both ways. The Majestic has the latest improved combined disc and wing bowl that not only gets the most cream but also skims it in better condition. Does not break the cream globules, as so many separators do. This means better quality butter—more profits for you. Remarkable inside automatic oiling device which insures perfect lubrication under all conditions. Absolutely impossible for the slightest particle of oil to come in contact with cream. Famous French helical gears produce tremendous speed of bowl—8,000 revolutions per minute—with just moderate turning of crank. No matter how much you pay, you can't possibly get a more durable, more practical, more efficient or easier to run cream separator. It is a mechanical marvel throughout.

Order the size you want. You run no risk. Judge the merits of the Majestic for yourself. If it isn't all and even more than you expect, don't keep it. Send it back. You can't possibly lose.

Your Choice of 4 Sizes—No Money Down

No. 452AMA6. Capacity: 375 lbs. Terms: \$9.15 in 60 days; balance 5 equal 60-day payments, each \$9.15. Total price \$54.90
No. 452AMA7. Capacity: 500 lbs. Terms: \$10.50 in 60 days; balance 5 equal 60-day payments, each \$10.45. Total price \$62.75
No. 452AMA8. Cap.: 750 lbs. Terms: \$11.65 in 60 days; balance 5 equal 60-day payments, each \$11.62. Total.... \$69.75
No. 452AMA9. Cap.: 1000 lbs. Terms: \$12.65 in 60 days; balance 5 equal 60-day payments, each \$12.62. Total.... \$75.75
For the average we recommend the 500 lb. size.

THE HARTMAN CO. 4043 LaSalle Street
Dept. 1705 Chicago

Ship Majestic Separator No. lbs.
capacity. If satisfactory, I agree to pay one-sixth the price 60 days after arrival and balance in 5 equal 60-day payments as stated in this ad. If not satisfactory, I will return Separator 30 days after arrival, you to pay freight charges both ways.

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



BIG PROFIT IN COW-TESTING.

THE cow-testing association in Hamilton county, Ohio, paid \$27.04 for every dollar invested during 1918, according to the annual report of the county agricultural agent. During the past year there were on test for four months or more 304 cows from twenty-four herds.

Out of this number 131 were on test for the full year. In 1916 this association produced 4,126 pounds of milk per head and 175.98 pounds of butter-fat. In 1917 the cows produced 4,741 pounds of milk and 212.90 pounds of butter-fat, while in 1918 the association averaged 6,107 pounds of milk per head and 259 pounds of butter-fat. The average gain per head in pounds of milk during 1918 over the first year was 1,981 while the average gain per head of butter fat was 83.2 pounds. The average gain of 1,366 pounds of milk this year over last year represents a total gain for the association of 415,264 pounds. Figuring this at \$2.975 per hundred, the average price for the year, this gives an added value of \$12,334.14 to the association on an investment of \$456 in salary to the tester, thus returning \$27.04 for every dollar invested in cow-testing work.

EARLY FEATHERS—NOT FINE FEATHERS.

It is not so much fine feathers that make the bird as it is early feathers, according to the Department of Poultry of the Michigan Agricultural College, which has just issued a report on the results of culling experiments conducted at the experiment station in 1918.

"The investigations indicated that a direct relation exists between quick maturity and egg production," the report sets forth. "Chicks taken from the incubators at the college poultry farm on March 1, 1918, commenced laying at the beginning of the second week in July, and are proving themselves most excellent producers during the present winter season.

"These layers were selected as likely birds before they commenced laying by observing certain things. At hatching time the chick is covered with down. The first feathers to appear are the wing feathers. These are followed by the tail feathers, and then come the feathers on the breast, and finally those upon the back. If the back of the young pullet is well feathered at six weeks, provided she belongs to one of the smaller breeds, or at seven weeks if she belongs to one of the larger breeds, it is a sign that she probably will come into a laying condition at an early age if she is properly fed and housed. Thus, one of our pullets which showed these signs of early maturity, and commenced laying on July 8, produced twenty-seven eggs during the first twenty-eight days in December. On the other hand, one of our late-maturing pullets has not yet produced a single egg."

HOUSE FOR ONE HUNDRED AND FIFTY HENS.

I would like to build a hen house and don't know how large to build to take care of 150 hens. Will you please give me your advice? What type of house would you advise?
Kalamazoo Co. G. W.

It is generally considered that a hen needs about four square feet of floor space. A house twenty feet deep and thirty feet long will give the birds a range of six hundred square feet and such a house has a capacity of one hundred and fifty birds. The Wood's open-front house seems to give satis-

Biggest Hatches Strongest Chicks

That's what you'll get with my Hatching Outfit—and I can prove it.



Get my big Free catalog "Hatching Facts"—it tells the whole story—gives newest ideas and easiest ways to make poultry pay. Learn of the many advantages the Belle City has over the "old hen way" and the big profits folks make by using my

**\$10.95 140-Egg
= Champion
Belle City Incubator**

Prize Winning Model—Double Walls Fibre Board—Self-Regulated—Hot-Water Copper Tank—Thermometer Holder—Egg Tester—Safety Lamp—Deep Nursery. With my Famous \$6.35 Hot-Water Double-Walled 140-chick Brooder—both only \$15.95

Freight Prepaid East of Rockies Towards Express

And allowed to points beyond. I ship quick from Buffalo, Minneapolis, Kansas City or Racine. Used by Uncle Sam and Agr. Colleges. With this Guaranteed Hatching Outfit and my Guide Book for setting up and operating you can make a big income. You will also get my

Special Offers
They provide easy ways to earn extra money. Save time—order now, or write today for my Free Poultry Book "Hatching Facts" It tells all. Jim Rohan, Pres. Belle City Incubator Co., Box 14, Racine, Wis.



PILLING CAPON TOOLS

Double the Weight
From the Same Feed

So great has been the demand for these practical, ready-to-use caponizing tools that most dealers exhausted their stocks. The fact that the Pilling factory was working 100% on Government orders for surgical instruments prevented us from refilling their shelves.

But next Spring we shall be able to supply dealers who order early. Get your order in now—any poultryman with Pilling caponizing tools and our complete illustrated instructions can make each dollar's worth of feed produce four times as many dollars as with roosters. Capon Book FREE.

G. P. PILLING & SON CO., Phila., Pa.
America's Pioneer Maker of
Est. 1814 Caponizing Tools

30 DAYS
FREE TRIAL
10 Year
Guarantee

Don't take chances. Find out what an incubator is made of before buying. Catalog and sample of material used sent free. We will send you these two machines, freight prepaid East of Rockies on 30 DAYS' free trial.

Both Machines \$14
Freight Paid

Wisconsin are made of genuine California Redwood. Incubators have double walls, air space between, double glass doors, copper tanks, self-regulating. Shipped complete with thermometers, egg tester, lamps, etc., ready to run. Send today for our new 1919 catalog, free and postpaid.

Large Size 180 EGG INCUBATOR AND BROODER, BOTH \$17.25.
WISCONSIN INCUBATOR CO.
Box 72, Racine, Wis.

MONEY
BACK IF NOT
SATISFIED

Baby Chicks: S. C. White and Brown Leghorns. Good laying strains of large white eggs. Guaranteed to reach you in first class condition by parcel. Catalogue with price list free.
WOLVERINE HATCHERY, R. 2, Zeeland, Mich.

Barred Rocks—EGGS FROM STRAIN with records to 230 eggs a year: \$2 per 15. Delivered by parcel post, prepaid. Circular free.
FRED ASTLING, Constantine, Mich.

Barred Rock Cockerels, bred from prize winners, single birds \$4.20 or more three dollars each.
A. A. WOOD & SON, Saline, Mich.

Barred Plymouth Rock Cockerels, fullblood \$6 each; prize winners for 17 years.
J. A. BARNUM, Union City, Mich.

BUFF LEGHORNS, 50 nice breeding cockerels. One to three dollars apiece.
Dr. WILLIAM SMITH, Petersburg, Mich.

POULTRY

HOMESTEAD FARMS

Day Old Chicks and Eggs

Send for illustrated catalog: Barred, White and Buff Rocks; S. C. Reds; W. Wyandottes; S. C. Black Minors; S. C. and B. C. White and Brown Leghorns; Buff Leghorns; Anconas.

Cockerels: Barred and White Rocks; W. Wyandottes; S. C. and B. C. White and Brown Leghorns; Anconas; B. C. and S. C. Rhode Island Reds.

Bloomington Farm Association, Desk F, Bloomington, Mich.

Baby Chicks Hatching eggs, seven leading varieties, best quality. Lowest prices. Catalogue free.
Goshen Poultry Farms, R. 19, Goshen, Ind.

100,000 BABY CHICKS

for 1919, sent safely everywhere by mail or express. Single Comb White and Brown Leghorns and S. C. Anconas. Grand laying strains. Strong, vigorous, hatched-right kind. Tenth season. Satisfaction guaranteed. Order now for spring delivery. Prices right. Free catalogue. W. Van Appleton, R. 7, Holland, Mich.

BABY CHICKS—11 Varieties, \$10 per 100 up, 2 weeks old 25c up, 4 weeks 45c up. Hatching eggs \$1.50 per 10 and \$8 per 100. Brd. White and Buff Rks. Buff and White Orp., S. & R. C. B. I. Reds, White Wyand., S. C. W. Leg., S. & R. C. Br. Leg., Airedale Pups, Or. free. Sunny Side Poultry Farms & Hatchery, Blanchester, O.

Baby Chicks Bred-to-lay S. C. W. Leghorns. The high cost of feed we have culled our breeders closely, saving the best; therefore we will have to advance the price to 15c each for March and April. Book orders early.
Sunnybrook Farm, Hilldale, Mich.

The SILO of no regrets

When you buy the ROSS IN-DE-STRUCT-O METAL SILO, you are buying a silo which lasts for a lifetime, a silo which is acid proof, rust proof, wind proof, air-tight, rain proof and fire proof. Saves its cost by saving spoilage of silage. Erect it yourself in your spare time. Tools and erecting brackets furnished with the silo.

ROSS In-de-str-uct-o Metal SILOS

Finest construction, high grade materials, no upkeep cost. The ROSS is made of enamel treated rolled metal, withstands all climatic conditions. Resists silage acids, air-tight joints. Fully warranted by a firm which has been doing an honest business for 69 years.

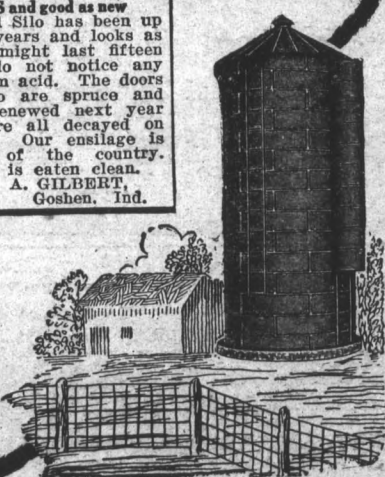
Ross Metal Silos add to the appearance of a farm. Our price will surprise you. Good live agents can make considerable money. Ask us about unoccupied territory.

FREE BOOKLETS. Send for free literature which will help you to decide the silo question. Your name on a postcard will do. Write us today.

We also sell Ross Wood Silos

The E. W. Ross Co.

Box 314 Springfield, Ohio



faction under varied climatic conditions. Many breeders report its use in cold climates without frosted combs or diminished egg production.

The lower front section of the house is eight feet deep and the higher rear section is twelve feet deep. The front section is four and a half feet high in front and five and a half feet at the rear. The lower front section is only covered with quarter inch mesh wire cloth to keep in the birds, keep out sparrows and help to break the wind. As the house is twenty feet deep, the wind does not strike the rear where the birds are roosting.

A house of this kind can have a cement floor, double board floor or sand floor. Some houses are built on a cement foundation to keep out rats but the floor is of sand. A floor of garden loam is not satisfactory as much of the dirt will soon turn to dust when the birds are scratching and the house and air become very unclean. The cement floor covered with a couple of inches of sand seems to be the most satisfactory.

Some breeders find the shed roof poultry houses easy to build as well as somewhat cheaper than the semi-monitor. A shed-roof house twenty by thirty will house one hundred and fifty birds. A height of eight feet in front and four and a half feet in the rear will be satisfactory. R. G. K.

PROTECT THE COMBS.


MALE birds are seriously injured in appearance by having their combs frozen and it not only causes the bird to suffer but injures its value as a breeder, at least until the comb and wattles are healed. On very cold nights valuable male birds can be protected by placing them in barrels covered with burlap. The heat from the body of the bird is enough to raise the temperature of the barrel and this protects the bird's comb.

Combs are more easily frozen or frost-bitten when they become wet while the birds are drinking. Some breeders place a wooden float in the water pail with a hole cut through the float from which the birds can drink. This keeps the wattles of the male from becoming wet. An ointment that is recommended for frost-bitten combs consists of kerosene oil, three parts by weight; lard, two parts; quinine, one part. Rub this ointment on the comb every day until the frost-bitten parts are cured. It takes considerable time to treat birds in this manner but with exhibition stock and valuable breeders it is worth the trouble.

Often when the combs of the birds are easily frozen it means that the house is not warm enough. It may be damp or the birds may be compelled to roost too close to the windows. Birds that are reduced in vitality from overcrowding or poor feeding methods are the most apt to have frozen or frost-bitten combs. The strong healthy bird can resist considerable cold if it is placed in a dry house where there are no draughts and properly fed.

THE BUSY HEN PAYS.

OUR experience has taught us that the flock pays us, and pays well. Other farmers with more expensive houses have bemoaned the fact that they could do no good with hens, but we have never failed to make a profit. We put part of the cause for success in the fact that we have always kept good pure-bred stock and kept it up well. Instead of building fancy houses we have made them simply comfortable and put the extra money into breeding birds. It is the comfortable, busy hen that produces and we try to keep our hens that way. We feed lots of vegetables in the winter and keep plenty of clean straw, fresh water and skim-milk before them at all times. Our chicks get skim-milk and thrive on it.



MODINE SPIREX RADIATORS

THE radiator is so vitally important that it deserves the careful thought of any buyer of a farm tractor.

The radiator is the significant part of the cooling system that safeguards the motor and makes possible the development of full, dependable engine power. A good radiator is an assurance of steady work—of getting the job done on time. A bad radiator is source of constant trouble and costly delays.

Know something about the radiator on the tractor you buy. If it is a SPIREX Cooling System, it is backed by a record of use on the majority of the best tractors built. The SPIREX is a radiator of remarkably rugged, leak-proof construction, of one-half the weight and twice the cooling capacity of any other radiator built for the same service.

If you would like to know more about this subject, write for our booklet about radiators.

MODINE MANUFACTURING COMPANY
Racine, Wisconsin

How Do You KNOW When Hens Are Healthy



THERE is one sure way to size up the condition of poultry. No, it is not examining their combs and plumage. Easier, simpler—

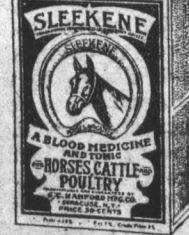
Do They Lay?

As long as your birds keep perfectly well and are not moulting, you ought to get eggs no matter what the season. And if you are not finding all you should, don't wait till combs grow dull, feathers lose their gloss and hens act moody. Get busy now. Get

SLEEKENE Mix it with the mash

In wet mash—one tablespoonful for every twenty hens, two or three times a week. In dry mash—a half package to a whole bushel of the feed.

Try just one package of Sleekene and learn for yourself whether this tonic makes your hens healthier. By the number of your eggs.



If your dealer hasn't Sleekene, send his name with 50 cents in stamps and a full sized package will be sent you post-paid.

Made only by
G. C. Hanford Mfg. Co.
Syracuse, N. Y.

Wanted— Local representatives everywhere to introduce the wonderful "3 P" Ford Attachment Auto Tractor. In this machine, the engineering brains of the greatest agricultural implement manufacturing center of the world, have overcome every possible objection to Ford Attachment Tractors—including cooling, lubrication, and the transfer of all working stress away from the Ford itself. Hundreds of these machines are in use, doing the work of 4 big horses, plowing, harvesting and pulling heavy loads on the road, operating all kinds of stationary farm machines. Each public demonstration you make of it should close many sales. Order your demonstrator now, and make money every day this fall and winter. Liberal terms to agents. Send for our circular, 3 P Auto Tractor Co., 523 East Fourth St., Davenport, Iowa.

You Take No RISK With An **Ironclad** **Both** **30 Days Free Trial** **Freight** **10 Yr. Guarantee** **Paid**

Think of it! You can now get this famous Iron Covered Incubator and California Redwood Brooder on 30 days trial, with a ten-year guarantee, freight paid east of the Rockies.

150 EGG INCUBATOR CHICK BROODER

Incubator is covered with galvanized iron, triple walls, copper tanks, nursery, egg tester. Set up ready to run. Brooder is roomy and well made. Order direct from this advertisement—money back if not satisfied or send for free catalog.

IRONCLAD INCUBATOR CO.
Box 97
RACINE, WIS.

Made of Redwood cov'd with Galv. Iron

Chickens Sick or Not Laying?
Most poor layers are "OUT OF CONDITION" or have Colds, Roup, Bowel trouble, Sore head, Chicken pox, etc. **GERMOZONE** is the best remedy for all these disorders. At dealers or postpaid 50c, with 5 book Poultry Library. **GEO. H. LEE CO., Dept. 427, OMAHA, NEB.**

POULTRY

CHICKS CHICKS CHICKS

350000 for 1919

By Parcel Post Prepaid. Delivered To Your Door. Guarantee Live Delivery.

Strong chicks from pure bred farm stock, that are hatched right. Have chicks of **UTILITY** and **Exhibition** quality. S. C. White and Brown Leghorns, \$12.00 and \$14.00 a 100; Barred Rocks, \$15.00 and \$17.00 a 100; Rose and Single Comb Reds, \$15.00 and \$18.00 a 100; White Wyandottes, \$15.00 and \$18.00 a 100; S. C. Anconas, \$14.00 and \$17.00 a 100; S. C. Buff Orpingtons, \$13.00 and \$16.00 a 100; S. C. Black Minorcas, \$13.00 a 100; Odds and Ends, \$12.00 a 100. Eggs for hatching \$7.00 to \$8.00 a 100. Combination offers on chicks, hovers and brooder stoves. Give us your order and we will make you a satisfied customer the same as hundreds of others. Order direct from this ad. But before ordering elsewhere get our free illustrated catalog. Get your order in early. Ready to ship in March.

HUBERS RELIABLE HATCHERY,
EAST HIGH ST., FOSTORIA, OHIO

Blue CUSTOM HATCHING Hens

Fifteen dozen eggs incubated and chicks boxed and shipped \$5.50. Less than full compartment 50c per dozen. Order April chicks now. Many varieties send for circulars. Crescent Egg Company, Allegan, Mich.

Cockerels: R. and S. C. R. I. Reds and R. I. Whites, \$2.50 up, good stock, satisfaction guaranteed. O. E. HAWLEY, Ludington, Mich.

Chicks, We ship thousands, orders booked now for spring delivery, booklet. **FREEPORT HATCHERY,** Box 12, Freeport, Mich.

Chicks That Live \$15 per 100 S. C. W. Leghorns MY SPECIALTY SNOWFLAKE POULTRY FARM, R. I. Grand Rapids, Mich.

Barred Plymouth Rocks
Cockerels of great size and superior breeding. Barred right, bred right, built right. Even better than last year. \$1.00 and \$5.00. **WESLEY HILE, R. 6, Tonia, Mich.**

Barred Plymouth Rock
Cockerels. Pure bred, free range, large and strong. \$4 to \$5. **R. C. WOODARD, Elsie, Mich.**

25 Barred P. Rock Chks. \$3.50 to \$5, each, 10 good yearling P. R. Hens \$25. **W. E. LECKY, Holmesville, O.**

Barred Rocks S. L. Wyandottes and Light Brahma cockerels for sale \$3 to \$5 each. Eggs in season. **O. V. BERK, Allenton, Mich.**

Baby Chix Barron Strain S. C. White Leghorns. Large healthy vigorous stock farm raised, bred to lay. Aim satisfaction. **Bruce W. Brown, R. 5, Mayville, Mich.**

Barred Rock Cockerels \$5.00 each. Range eggs \$1.00 per 15. Pen \$3.00 per 15. Correspondence solicited. **Ray G. Bunnell, Lawrence, Mich.**

BARRED Rocks exclusively. Get your baby chicks and hatching eggs on time by ordering now. Prices and folder free. **H. H. PIERCE, Jerome, Mich.**

Fowlers Buff Rocks Cockerels, hens and pullets—White Holland Toms, \$3 each. **R. B. FOWLER, Hartford, Mich.**

JOHN'S Big Beautiful Barred Rocks are hen hatched quick growers, good layers, sold on approval \$4 to \$8. Circulars photos. **John Northon, Clare, Mich.**

For Sale Light Brahmas, 7 females and cockerel, \$20.00; 1 pen Young strain White Leghorns, 5 pullets and ckl., \$10.00. These are all excellent birds and will please you. Ready now. Eggs from very fine pen Barred Rocks, \$2.50 per 15. From run of flock, \$1.75 per 15. **PAUL L. WARD, Hillsdale, Mich.**

Pine Crest White Orpington greatest egg producers—hens and young stock, buy now for next winter. **Mrs. WILLIS HOUGH, Pine Crest, Royal Oak, Mich.**

ROSE COMB BROWN LEGHORNS from winners at the largest shows in America. **Mrs. CLAUDIA BETTS, Hillsdale, Mich.**

R. C. RHODE ISLAND REDS cockerels, large, thrifty; pure bred; \$2.50 to \$5.00. **BIDWELL STOCK FARM, Tecumseh, Mich.**

S. C. Anconas, W. Leghorns. Book orders now for Day Old Chicks and Hatching eggs. Circular free. **Elmhurst Poultry Farm, Brighton, Mich.**

Silver, Golden and White Wyandottes. Plenty of Good Golden and White cockerels \$1.50. Few Silver pullets \$3 each. **O. W. Browning, Portland, Mich.**

White Wyandotte choice stock: cocks, hens, cockerels, and pullets. Send for 1918 circular. **David Ray, 709 Norris St., Ypsilanti, Mich.**

R. I. Red Chicks and Eggs Rose and Comb. Write for free illustrated catalog. **INTERLAKES FARM, Box 33, Lawrence, Mich.**

HEAPS OF DIFFERENCE

BUFFALO CORN
GLUTEN FEED
Very Highly Digestible

A FEED
Low in
Digestibility



What Do These Piles Mean?

THEY are intended to impress upon you how important a thing the digestibility of feed is. Because too many men, usually those who can least afford to pay for poor choices, are influenced in their feed buying by the size of the bag.

Every dairyman must know, surely, that his cows can make milk from only that part of their feed which they can digest, and cannot make milk from the part they cannot digest.

Why is it, then, that dairymen don't pay more attention to the per cent digestible of the feed than they do, and less attention to how feeds compare in apparent bulk?

Suppose you are at your feed store to buy feed. The dealer shows you two piles of two different kinds of feed, and each pile weighs a ton. But one kind is nearly all digestible and the other is not.

You can't tell much about how they compare in digestibility by looking at them. . . .

But you certainly can by feeding them. There's a heap of difference in the amount of milk you get.

You naturally would expect to get the most milk from the Buffalo Corn Gluten Feed, because it is so highly digestible, and you know all the time that it's only the digestible part of feed that makes milk.

The next time you go for feed, tell your dealer you want the best there is.

CORN PRODUCTS REFINING COMPANY
C. FRANCIS, 909 Ford Bldg., Detroit.



OUR PRESENT LIVE STOCK SUPPLY.

MICHIGAN'S live stock was worth approximately twenty-seven and one-half millions of dollars on January 1, according to the annual report on live stock issued by Verne H. Church, Field Agent, United States Bureau of Crop Estimates. The report shows a marked gain in the number of both sheep and swine, and a slight decline in each of the other kinds of live stock during the past year. The average price per head of cattle and swine is above that of one year ago, sheep remain at about the same level, and horses and mules have declined considerably.

The increased use of the tractor, truck and automobile on the farm and the shortage in man power, is causing less demand for, and a decline in, the value of work animals. It is estimated that the decrease in horses amounted to one per cent in each of the last two years.

Milch cows have decreased two per cent in number and other cattle three per cent since January 1, 1917. The high cost of feed has lessened the profits of the dairy business and increased the risk in feeding the meat animals.

A nation-wide publicity having been given to the grazing advantages of northern Michigan cut-over lands by the several development bureaus in the state, a number of large flocks of sheep have come to the state from the western ranges and others will undoubtedly follow. The relatively high prices of both mutton and wool have also induced a large number of local farmers, who have not kept any sheep in recent years, to establish flocks, and former sheep owners to increase their holdings. The increase during 1917 was estimated at five per cent, and during 1918, ten per cent.

Following a decline of five per cent in the number of swine in 1917, there was an estimated increase of six per cent in 1918, due to the fixed minimum price and to a corn crop that was both larger in amount and better in quality than that of the previous year.

THE POTASH SITUATION.

THE idea seems to be current that supplies of potash from Alsace are soon to be brought to America for fertilizer use. Press notices recently published under a Paris date line and quoting an alleged official statement to the above effect, are no doubt largely responsible for the prevalence of this erroneous idea.

We have authoritative information from official sources at Washington, that the French High Commission here has just received a cablegram stating that no potash will leave the Alsatian fields before April at the very earliest. It is further stated that it will probably be June or July before the first shipments reach America.

It seems certain from the above that no foreign potash can reach this country in time for spring use, and all those who may be delaying ordering in anticipation of the arrival of this foreign supply, will do well to place their orders immediately. There is plenty of domestic potash on hand to meet all immediate needs—thanks to the initiative and persistence of our American producers.

None of our Sammies who went over the top used an elevator.

Sell Your Milk Don't Feed It to Your Calves!



Raise the Calves Easily, Successfully and Profitably on

Blatchford's Calf Meal

In the United States alone more than 1,000,000 calves were raised on Blatchford's Calf Meal last year. It puts calves through to a healthy, vigorous, early maturity at less than one-half the cost of milk. Write for booklet: "How to Raise Finest Calves on Little or No Milk." We'll send it free, also name of your nearest dealer.

Blatchford Calf Meal Co.—Dept. 4812
In Business Over 118 Years Waukegan, Ill.

THE KING OF REMEDIES FOR LAME



Quit the draining expense and cure your suffering, lame and idle horse. Don't hold back—we take all risk to permanently cure mule, work horse or \$10,000 trotter of Kingbone, Thorpin, SPRAIN or Shoulder, Knee, Ankle, Hoof or Tendon disease.

Our FREE Save-The-Horse BOOK tells the story. This remarkable, serviceable book, which every horse owner will value, sample of signed Guarantees with other substantial references and evidence are all sent FREE. They prove what Save-The-Horse has done for over 250,000 satisfied users. Save-The-Horse is no cure-all but for diseases causing lameness you can depend upon it. Horse works, earning while being cured. Write at once.

TROY CHEMICAL CO., 320 State St., Binghamton, N. Y.
Druggists Everywhere sell Save-The-Horse with CONTRACT, or we send by Parcel Post or Express paid.

LAMPREY'S



Start Your Calves
AT A
Minimum Cost
ON

CALF MEAL

Do not use whole milk at 45c to 60c a day and feed at a loss. **SELL YOUR WHOLE MILK.**

Cows milk varies, too, according to the animal's health and often causes scours. Raise your calf on Lamprey's Calf Meal with Little or No whole milk. Simply mix with water or skimmed milk. Will save many times its cost in cream saved the first six weeks, and does not vary or scour.

Money refunded if you do not find it absolutely satisfactory and a Big Money Saver. Ask your Dealer also, for a 12-lb. package today. Write for Calf Meal Pointer Pamphlet. It's Free.

LAMPREY PRODUCTS, Inc.
Est. 1883. St. Paul, Minn. Dept. B.

DUROC JERSEYS Nothing but spring pigs for sale. **CAREY U. EDMONDS**, Hastings, Mich.

Duroc bred gilts for March and April farrow with quality and size. Fall pigs both sexes not akin. **W. C. TAYLOR**, Milan, Mich.

Duroc Jerseys Large heavy-boned gilts, bred to Junior Champion boar for March and April farrow; prices reasonable. Come and see them, free livery expenses paid if not as represented. **F. J. DRODT**, R. 1, Monroe, Mich.

Duroc Jersey Sows, Large type, heavy boned, 1000 lb. herd boar. **JOS. SCHUELLER**, Weidman, Mich.

Raise Chester Whites

Like This
the original big producers



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

GET Your Cream Separator NOW!

ONLY
\$2 Down
A Year to
Pay

on This Easy, Self-Earning Plan!

You won't feel the cost at all. The machine itself will save its own cost and more before you pay. We ship any size separator you need direct from our factory and give you a whole year to pay our low price of \$38 and up. Read what Alfred Geatches, North Jackson, O., says: "We are getting more than twice the cream we were before. The separator is very easy to clean and runs very easy." Why not get a fully guaranteed New Butterfly Separator for your farm and let it earn its cost by what it saves?

New BUTTERFLY EASY TO CLEAN

Cream Separators have these exclusive, high-grade features: Frictionless pivot ball bearings bathed in oil—self-draining bowl—self-draining milk tank—easy-cleaning one-piece aluminum skimming device—closed drip-proof bottom—light-running cut steel gears, oil bathed. Guaranteed highest skimming efficiency and durability. We give

30 Days' FREE Trial—Lifetime Guarantee

against all defects in material and workmanship. We ship you the size machine you need and let you use it for 30 days. Then if pleased you can make the rest of the small monthly payments out of the extra profits the separator saves and makes for you. If not pleased just ship the machine back at our expense and we will refund what you paid. You take no risk. Write for FREE Catalog Folder now.

ALBAUGH-DOVER CO., 2165 Marshall Boulevard, CHICAGO

HOGS

For Sale Reg. Berkshire Sows & Boars all ages. Priced to sell. **RUSSELL BROS.**, R. 3, Merrill, Mich.

Duroc-Jersey Hogs

WILDWOOD FARMS

Offers one of the Greatest Bargains yet. **20** large type Duroc-Jersey Gilts bred for APRIL FARROWING \$75 to \$100.00 each

Bred to "J. E. L. PERFECTION COL." Great Brookwater Bred Boar.

Weight from 250 to 275 lbs.

SEE OUR ANGUS ADVERTISEMENT

Wildwood Farms, ORION, MICH.

W.E. SCRIPPS, Prop. **SIDNEY SMITH, Supt.**

DUROC

Bred sows and last fall boars. State Fair Champions and winners. Down to date breeding and correct type. Orion's Fancy King heads herd. **NEWTON BARNHART**, St. Johns, Mich.

Duroc--Jerseys

Big type, specially fine young boars, best blood in America, born in October. \$40.00 for quick sale.

BLOOMFIELD FARMS

1730 Penobscot Bldg. Detroit, Mich.

WE HAVE A FEW

choice young sows bred to a Defender Boar. We think this is some of the best Duroc stock in the country. Write for information. **THE JENNINGS FARMS**, Bailey, Mich.

OAKWOOD FARM

A few choice Duroc fall pigs left. Also a fine yearling sow bred for Mar. litter. Write for prices. **RUSH BROS.**, Romeo, Mich.

Duroc Boars, Gilts, Big, Long, Tall, 200 lb. April 1, boars and gilts of the choicest breeding. Also an A.R.O.I. yr. Holstein bull. **F. E. EAGER & SON**, Howell, Mich.

DUROC--JERSEYS

E. D. HEYDENBERG, Wayland, Mich.



GROUND OATS FOR WINTERING STEERS.

Last fall I bought a carload of calves or two-year feeders in Chicago to feed during the winter. When they arrived their average weight was 524 lbs. I expect to pasture them during the summer. Therefore you see that I am not trying to fatten them this winter but want to keep them growing, healthy and thrifty so that they will make a quick start on grass. Up to the present time they have had beet tops, straw, bean pods, a little shock corn and occasionally a little hay. Since December 24 they have had also about one quart of ground oats apiece once a day. The young cattle have done fine and kept in good condition on this feed so far. However, the last of the beet tops were fed up on January 25, the straw is about gone and the bean pods are gone and there only a few shocks of corn left. They must go through the remainder of the winter on hay and grain. The hay is a mixture of clover and timothy but the larger part is timothy. What shall I feed them along with this hay to keep them vigorous and in a healthy condition during the remainder of the winter? Are ground oats sufficient as a grain ration?

Ionia Co. H. C. P.

In my judgment you can afford to mix bran with the ground oats as a ration. This furnishes you a little more protein to go with the timothy hay, and bran is a mighty good food for growing young stock because it furnishes plenty of mineral elements. Feed oats and bran, equal parts by weight. The more liberally you feed it the better growth you will get on the steers.

I appreciate the fact that these steers are to be finished on pasture at little cost and yet if you can get some growth this winter you have got something to show for the money you put into them. Just feeding a maintenance ration is feeding at a loss. A little extra food will make a growing ration which would give you a chance to make a profit on the winter feeding. The more growth you get this winter and the better condition the animals are in when grass comes, the better growth and larger gain you will make on the grass.

If you prefer you could mix corn, oats and bran in equal parts and it would make a greater variety and would give you splendid results.

C. C. L.

BARLEY AND SKIM-MILK FOR PIGS.

Will a feed of equal parts of barley and oats with skim-milk make a balanced ration for fattening hogs? If not would the ration be improved by using tankage.

St. Clair Co.

C. M.

I would recommend some corn in connection with the barley and skim-milk for fattening pigs. Oats, barley and skim-milk make a splendid ration for growing young pigs but a little more fat in the ration in the form of carbohydrates, especially for finishing is advisable.

Ground barley and skim-milk make a balanced ration for growing pigs that are to be fattened if fed in the proportion of one pound of ground barley to six pounds of skim-milk. As the fattening stage is approached gradually increase the barley or add corn. Corn and barley ground together and used in the proportion of one pound of corn to four or five pounds of milk would make a No. 1 fattening ration. Tankage is not needed if you have plenty of skim-milk.

C. C. L.



Get more milk!

Get more milk from your cows. Others have proved by actual record that Dr. LeGear's Stock Powders make cows give from one-half to three-fifths of a gallon more milk per day. I guarantee that

All stock do better with Dr. LeGear's Stock Powders (my personal prescription)

They tone up the animal's system wonderfully, produce perfect digestion, increase the productive value of the feed, drive out worms, and keep stock strong and healthy. The formula for these powders has been worked out from my twenty-six years' veterinary practice, and tried out by thousands of dairymen and stock raisers, with big success.

This time of the year all stock need help—cows, horses, hogs, etc. You should get your cows in good condition for the freshening period; tone up your horses for hard spring work; and insure healthy, sturdy spring pigs. Feed your cows and sows Dr. LeGear's Stock Powders—give it to your horses. Besides being a splendid conditioner it is an excellent remedy for coughs, colds, distemper, worms, kidney troubles, loss of appetite, hide-bound, loss of flesh, etc., because it eliminates the causes of these ailments.

Get a package today — at my risk

Ask your dealer today for Dr. LeGear's Stock Powders. If my Stock Powders fail to do all that I claim for them, your dealer is authorized to refund your money.

Dr. LeGear's Poultry Powder
keeps hens healthy, insures winter eggs, and means more profits to you.

Dr. LeGear's Antiseptic Healing Powder
cleanses, dries and heals sores and cuts quickly. Handy to use.

Dr. LeGear's Lice Killer
(powdered) rids your flock quickly of lice, protects chicks, etc.

Free sample—ask your dealer

Dr. LeGear's Remedies are sold by 40,000 of the best dealers—never by peddlers. Ask your dealer today for liberal free sample package of Dr. LeGear's Stock Powders or Dr. LeGear's Poultry Powder, and get a free copy of Dr. LeGear's Stock and Poultry Book. If your dealer hasn't samples and books, ask him to write us. We will supply him promptly.

Dr. L. D. LeGear Medicine Co., 712 Howard Street, St. Louis, Mo.

Dr. LeGear's Stock Powders



Dr. L. D. LeGear, V. S. (in Surgeon's Robe), Graduate of Ontario Veterinary College (Toronto, Can.), 1892. Nationally famous specialist in treatment of stock and poultry. 26 years' actual veterinary practice.

Duroc-Jersey swine for sale. One young boar ready for service, also some pigs of both sex. Large heavy boned type of the best breeding. Inquire of
WILL COTTELL, R. 1, West Branch, Mich.

Breed The Best THE WORLD NEEDS LARGE FAT HOGS
Why lose money feeding and feeding scrub hogs? Two of our O. I. C. Hogs Weighed 2806 Pounds. We are the most extensive breeders and shippers of pure bred hogs in the world. Write today for the true story of the real O. I. C. Hogs. All foreign shipments U. S. Government Inspected. We have bred the O. I. C. Hogs since 1863 and have never lost a hog with cholera or any other contagious disease.

Originators of the Famous O. I. C. Hogs
WRITE TODAY—FOR FREE BOOK "The Hog from Birth to Sale" THE L. B. SILVER CO. 196 Heights Temple Bldg. CLEVELAND, OHIO

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

Shadowland Farm

O. I. C.'s

Bred Gilts 200 to 300 lbs. from prize winning stock. A few fall yearlings and 2 yr. old sows, big type, growthy boars of all ages, guaranteed as breeders. Everything shipped C. O. D. Express paid and registered in buyers name. J. CARL JEWETT, Mason, Mich.

Chesters Gilts bred for March, April and May farrow from mature stock of the large prolific kind. Satisfaction guaranteed. F. W. ALEXANDER, Vassar, Mich.

O. I. C. and Chester White Swine Strictly Big Type with QUALITY. I am sold out of everything but fall pigs. These pigs are as good—and I think better than any I ever bred. I am one of the oldest breeders of Big Type in the U. S. NEWMAN'S STOCK FARM, R. 1, Marlette, Mich.

O. I. C. BRED GILTS all sold. Have some good last fall boars. OTTO B. SCHULZE, Nashville, Mich.

O. I. C.'s big type serviceable boars. Yearling sows and gilts bred for spring farrow. G. P. ANDREWS, Dansville, Mich.

O. I. C. Boar, 14 months old. Large fall pigs of either sex. Rockford, Mich. C. J. THOMPSON.

O. I. C. Large type. Some choice boars and sow gilts eligible to registry. WEBER BROS., Royal Oak, Ten Mile Road, one half mile west of Woodward. Tel. 408.

O. I. C. Gilts bred for Mar. and April farrow a few good fall boar pigs about 100 lbs. I ship C. O. D., pay express, guarantee to please. F. C. Burgess, R. 3, Mason, Mich.

O. I. C. Gilts to farrow in March and April. Also fall pigs, either sex. CLOVER LEAF STOCK FARM, Monroe, Mich.

O. I. C. Bred Gilts All Sold. H. W. MANN, Dansville, Mich.

FOR 25 YEARS

This establishment has been head quarters for Big Type Poland Chinas. We have a nice lot of boars and sows of strictly big type breeding at very low price. Let me know what you want. Bell phone. JNO. C. BUTLER, Portland, Mich.

Large type P. C. Largest in Mich. Boars all sold. 20 Bred gilts sired by and bred to the best boars the breed can produce, with dams of equal merit, extreme size with quality, come and see them. free livery, expenses paid if not represented. W. E. Livingston, Parma, Mich.

Big type Poland Chinas. Spring gilts of the best of breeding. With quality from 1000 lb. sire's and 800 lb. dam's. Will be bred to a great son of the noted \$6500 Gortdale Jones. Also fall pigs. W. BREWBAKER & SONS, R. 5, Elsie, Mich.

Big Poland Chinas with quality. Spring, summer, and fall pigs, both sex, and bred sows for sale. G. A. BAUMGARDNER, R. 2, Middleville, Barry Co., Mich.

Big Type Poland gilts bred to Gerstdale Superior and Gerstdale Ladsons of Gerstdale Jones the \$6600 boar. O. L. WRIGHT, Jonesville, Mich.

Large Type P. C. boars all sold. Spring gilts and young L. tried sows, bred for March and April farrow. Free livery from Augusta. W. J. Hagelshaw, Augusta, Mich.

Michigan's Champion herd of Big Type P. C. bred sows fall pigs. Come and see them. E. R. LEONARD, R. 3, Box 53, St. Louis, Mich.

L. T. P. C. Gilts bred for April farrow. Fall pigs of either sex. inspection invited. A. A. FELDKAMP, Manchester, Mich.

B. T. P. C. Bred Gilts, the best lot ever on the farm at prices any good farmer can afford to pay. H. O. SWARTZ, R. 37, Schoolcraft, Mich.

Big Type P. C. boar and bred gilts. Choice Aug. pigs at a bargain. A. A. WOOD & SON, Saline, Mich.

Big Type P. C. Choice bred sows from Iowa greatest herds, the big bone prolific kind with size and quality. E. J. MATHEWSON, Burr Oak, Mich.

Big Type Poland Chinas, Spring boars all sold. Bred gilts ready for shipment. Inspection invited. L. L. CHAMBERLAIN, Marcellus, Mich.

P. C. Bred Sows Large style best we ever owned. Satisfaction or no sale. R. W. MILLS, Saline, Mich.

Mammoth P. C. Starchy big boned individuals 175-200 lbs. 5 1/2 months double immune. Write wants. Clyde Weaver, Ceresco, Mich.

Gilts sold have one yearling P. C. sow bred for May farrow, bull calf 4 months old. Pure bred Short-horn. Price \$100. John D. Wiley, Schoolcraft, Mich.

Hampshire Hogs The International Grand Champion Hog of 1918, both sexes for sale. Spring deliveries booked now. ELI SPRUNGER & SON, Saginaw, W. S., Mich.

Hampshires Boars at a bargain bred gilts all sold. JOHN W. SNYDER, R. 4, St. Johns, Mich.

Additional Stock Ads on Page 191

LATEST MARKET REPORTS

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, February 6.

WHEAT.

There has not been a real active demand for flour of late and wheat trading has eased up somewhat as a result. Prices are holding steady. The removal of the embargo on the exportation of mill feeds may develop a slight bullish influence. Reports on the growing crop show unusually promising conditions throughout the important winter wheat producing states. One year ago No. 2 red wheat sold on the local market at \$2.17 per bushel. Present prices here are as follows:

No. 2 red	\$2.30
No. 2 mixed	2.28
No. 2 white	2.28

CORN.

Trading conditions are assuming those prevailing before the war and dealers expect the increased liberty will result in greater activity, especially in the corn market. Early this week the bears were proclaiming very loudly the coming of Argentine corn to this country now that labor troubles at Buenos Aires have been cleared up and transportation companies are ready to ship. This corn, however, will not reach America before the first of March if at all. On the other hand, the bulls took courage at the small offerings by farmers, which is keeping the stocks so low that shorts may be obliged to purchase at higher prices. The maintaining of high hog quotations is encouraging feeders and thus reducing the quantity of corn that will come to market. A year ago No. 2 corn was quoted on the local market at \$1.85 per bushel. Present Detroit prices are:

No. 3 corn	\$1.30
No. 3 yellow	1.35
No. 4 yellow	1.30
No. 5 yellow	1.25
No. 6 yellow	1.20
No. 3 white	1.33

Chicago.—Unfavorable weather and continued small receipts had a bullish influence on the corn market here today. Commission houses and shorts were active buyers. May corn was selling around \$1.13½ and July at \$1.10½.

OATS.

No changes are reported for oats except that early this week a firmer tone was noted on the markets. The slowness of the shipping demand has been the chief obstacle in the way of the bulls. One year ago standard oats were quoted on the local market at 89½¢ a bushel. Present Detroit prices are as follows:

Standard	59
No. 3 white	58½
No. 4 white	57½

RYE.

This deal continues inactive following the cessation of buying by the federal government. The price on the local market is \$1.45 for cash No. 2.

BARLEY.

The government has also quit purchasing barley, with the result that very little attention is being given this grain in most of the markets. In Detroit cash No. 3 is quoted at \$1.85; No. 4, \$1.80 per cwt.

BEANS.

The outlook in the bean market is not promising to the grower. The general trend of prices continues downward and the movement is slow and draggy. At Detroit Michigan hand-picked pea beans are selling to jobbers at \$8.50@9 and a few higher, while the quotation issued by the Board of Trade for beans at country shipping points is \$7.50. In the state buyers are offering around \$6 and do not seem anxious to pay this price because of the difficulty in moving the product. Michigan choice pea beans are selling to jobbers in New York City at \$9; poorer grades \$7.75@8.75; red kidneys \$12.75; white marrows at \$11.75. At Boston the jobbers are paying \$8.50@9 for Michigan's best pea beans. There is no improvement in the demand at Chicago where Michi-

gan pea beans, choice to fancy, are quoted at \$7@7.50, and red kidneys at \$11.50@12.

HAY.

While the market is easy, quotations remain unchanged from those of last week. Detroit prices are as follows: No. 1 timothy \$26.50@27; standard at \$25.50@26; No. 1 light mixed \$25.50@

26; No. 1 mixed \$24.50@25; No. 1 clover \$23.50@24.

Pittsburgh.—Receipts are heavy and it is difficult to place offerings at anything like satisfactory prices. Values are lower as follows: No. 1 timothy \$28@28.50; No. 1 light mixed \$25.50@26.50; No. 1 clover mixed \$25.50@26; No. 1 clover \$25@25.50.

Live Stock Market Service

Reports for Thursday, February 6th

DETROIT

Cattle.

Receipts 2,838. Good cattle are 25c higher; bulls 50c lower; all the other grades of cattle strong.

Best heavy steers	\$14.00@16.00
Best handy wt bu strs	10.50@11.50
Mixed steers and heifers	9.25@10.00
Handy light butchers	8.25@ 9.00
Light butchers	7.50@ 8.00
Best cows	9.00@ 9.50
Butcher cows	8.00@ 8.50
Cutters	6.75@ 7.00
Canners	6.25@ 6.50
Best heavy bulls	10.00@11.00
Bologna bulls	8.50
Stock bulls	7.25
Milkers and springers	50@ 115

Veal Calves.

Receipts 1,595. Market steady. Best grades

Best grades	\$16.50@17.00
Others	8.00@15.00

Sheep and Lambs.

Receipts 7,073. Market dull. Best lambs

Best lambs	\$16.50@16.60
Fair lambs	15.25@15.75
Light to common lambs	14.00@15.00
Fair to good sheep	9.50@10.00
Culls and common	7.00@ 7.50

Hogs.

Receipts 5,160. Pigs 25c higher; mixed hogs steady. Pigs

Pigs	\$17.00@17.25
Mixed hogs	17.60@17.75

CHICAGO.

Cattle.

Receipts 14,000. Beef and butcher cattle strong; canners and calves 50c higher; feeders firm.

Good to prime choice steers \$16.75@20.25; common to medium butchers \$10.65@16.75; heifers \$7.85@15; cows

\$7.10@14.50; bologna bulls \$8.35@13; canners and cutters \$6@7.10; stockers and feeders, good \$11@14.50; do medium \$8.35@11.

Hogs.

Receipts 44,000; held over 11,027. Market generally steady at yesterday's average. Tops \$18; bulk of sales \$17.40@17.90; heavy \$17.85@18; mixed and light \$17.65@17.85; packers' hogs at \$16.60@17.25; medium and heavy at \$17.10@17.60; light bacon hogs \$17@17.75; pigs good to choice \$14@16.75; roughs \$16@16.60.

Sheep and Lambs.

Receipts 22,000. Lambs steady to 10c higher; sheep and yearlings are strong to 25c higher. Choice to prime lambs \$17.15@17.35; medium and good lambs \$15.50@17.15; culls \$12@14.50; medium good and choice feeders \$14@15.25; choice yearlings at \$14.75@15; medium and good yearlings at \$12@14.75; wethers medium and good \$11@12.25.

BUFFALO.

Cattle.

Market is steady. Prime steers \$17.50@18.50; shipping steers \$16@17; butchers \$10@16.75; yearlings \$13@18.75; heifers \$8@13.25; cows \$4.50@12; bulls \$6.50@11.25; stockers and feeders \$5.50@11; fresh cows and springers \$65@150. Best calves \$19.

Hogs.

Market 50@75c higher. All grades of hogs at \$18.50.

Sheep and Lambs.

Receipts 13,000. Lambs are higher; others steady; lambs at \$17.75; yearlings \$10@15; wethers \$11@12; ewes \$4@11; mixed sheep \$10.75@11.50.

FEEDS.

Feeds remain steady at the following quotations in 100-lb. sacks to jobbers: Bran \$52@53; standard middlings \$50@51; fine middlings \$52@53; coarse corn meal \$58; cracked corn \$58; corn and oat chop at \$50 per ton.

SEEDS.

No changes have been made in seed prices, with present quotations as follows: Prime red clover \$24.75; March \$23.50; alsike \$17.40; timothy \$4.90.

POTATOES.

The general tone of the trade is easy and slow with slight declines reported in producing sections. Michigan U. S. Grade No. 1 sold on the Detroit market Wednesday at \$2.60@2.75 per 150-lb. sack; at Cleveland this grade of Michigan stock was selling at \$1.90@2 per cwt; at Buffalo at \$2@2.15; at Pittsburgh \$1.83@1.90; at Cincinnati \$2@2.10; at Indianapolis \$1.75@1.85; at Chicago round whites U. S. Grade No. 1 sold at \$1.65@1.70.

APPLES.

The apple trade is maintained on a strong basis these days with prices higher and firm. Baldwins are selling to jobbers at Detroit at \$7.50@8.50 per bbl; at Chicago the same variety now brings \$7@7.50; Greenings \$7@7.25.

BUTTER.

The butter continued its downward course last week. While slight reactions were noted at times, the situation remains in the hands of the bears with prices about five cents below those recorded a week ago. At Detroit fresh creamery firsts are quoted at 41c per pound. Chicago creamery prices range from 38@45c, while New York quotations are 45@50c.

EGGS.

Continued mild weather is responsible for the rapidly increasing receipts at our big markets; receipts coming from all sections of the country. Prices are lower, although the demand is very active. At Detroit fresh firsts are quoted at 39½¢; extra firsts in new cases at 40½¢. At Chicago the market is lower, with firsts at 39@39½¢; ordinary firsts at 37@38½¢. On the New York market the range is from 50@56c per dozen.

DETROIT CITY MARKET

Offerings at the city markets consist largely of potatoes and cabbage. Farmers are selling potatoes at \$1@1.10 per bushel, with the bulk around \$1.10; white cabbage brings 75¢@1.25; best apples at \$3@3.25; No. 1 at \$2@2.50; No. 2 at \$1.50@1.75; parsnips at 75¢@90¢; turnips \$1@1.50; fresh eggs at 55¢@60¢; live poultry 32@34¢; navy beans 7½¢@8½¢ per pound.

SPECIAL NOTICE TO PURCHASERS OF NITRATE OF SODA.

Owing to the fact that many truck gardeners and farmers were unable to file their applications for nitrate of soda prior to January 25, the Department of Agriculture has decided to extend the time for filing such applications to February 15, 1919. All farmers who wish to secure nitrate of soda from the government at \$81 per ton plus freight charges, and who have not already filed their orders, should communicate immediately with their county agents or state directors of extension and secure necessary application blanks. All applications must be filed with county agents or members of local nitrate committees, appointed to assist them, on or before February 15, 1919.

Stabilization by the federal government of hog prices has put the country speculator out of business. Under normal conditions, country speculators contract hogs for future delivery, but uncertainty as to future moves of the Food Administration has rendered this impossible. Under the price agreement policy, the basic price of hogs was maintained at \$18.50 last October and at \$17.50 for the last three months.

The leading authorities favor hog breeding of extensive proportions. As a writer expressed the matter the other day, "there is a belief common that much more damage can be done corn prices than hog prices."

Federal Report on Live Stock in United States and Michigan

The estimated numbers and average values of live stock as of January 1, 1919, for Michigan and for the United States follow:

	United States.		Michigan.	
	Number.	Price.	Number.	Price.
Horses.				
1919	21,534,000	98.48	666,000	105.00
1918	21,555,000	104.24	673,000	118.00
1917	21,210,000	102.89	680,000	121.00
1916	21,159,000	101.60	680,000	123.00
1915	21,195,000	103.33	673,000	132.00
1914	20,962,000	109.32	653,000	139.00
Milch Cows.				
1919	23,467,000	78.24	848,000	83.00
1918	23,310,000	70.54	865,000	74.00
1917	22,894,000	59.63	865,000	61.50
1916	22,108,000	53.92	847,000	56.20
1915	21,262,000	55.33	814,000	60.50
1914	20,737,000	53.94	798,000	59.70
Other Cattle.				
1919	44,399,000	44.16	729,000	38.90
1918	44,112,000	40.88	752,000	35.90
1917	41,689,000	35.92	730,000	30.20
1916	39,812,000	33.53	735,000	27.30
1915	37,067,000	33.38	707,000	29.80
1914	35,855,000	31.13	680,000	28.10
Sheep.				
1919	49,863,000	11.61	2,119,000	12.50
1918	48,603,000	11.82	1,926,000	12.60
1917	47,616,000	7.13	1,834,000	7.80
1916	48,625,000	5.17	1,931,000	5.70
1915	49,956,000	4.50	2,033,000	5.00
1914	49,719,000	4.02	2,118,000	4.60
Swine.				
1919	75,587,000	22.04	1,355,000	23.60
1918	70,978,000	19.54	1,278,000	19.80
1917	67,503,000	11.75	1,345,000	12.40
1916	67,766,000	8.40	1,462,000	9.00
1915	64,618,000	9.87	1,392,000	10.90
1914	58,933,000	10.40	1,313,000	12.30

HANDLING POULTRY.

THE commercial poultryman must catch the birds occasionally for examination and such work requires careful handling and patience. It takes a man with a good temper to catch Leghorn hens during the day. It is not advisable to try to do it as at night the birds can be handled with less confusion. We believe that banding, treating for lice, observation of the laying condition, and culling of the flock should all be done at night. This saves confusion and time. Laying hens are injured by being frightened and the egg production will surely fall if they are chased around the laying house.

If it is necessary to catch birds during the day, take a piece of strong wire about four or five feet long and bend a crook in the end which will just slip over a hen's leg. Then scatter a little scratch grain where the birds can see it and catch the desired birds with the crook. It is easier than making a grab with the hand, which often results only in a scared bird minus a handful of feathers.

When crating birds for shipment they should be caught at night. Several crates of broilers can be gathered from the colony houses at night in a short time. During the day it will be necessary to frighten and chase many of the birds on the range and this is a waste of energy and injures the birds.

WHICH BREED OF HOGS?

Please advise me in your next issue about Poland-China hogs and Berkshires. I expect to buy pure-breeds of the breed that is best for pork and breeding, and sell to the farmers. I have an idea that the Berkshires mature quicker, but the reason I ask this about these breeds, I see the Poland-China advertised very strongly in the Michigan Farmer.

Alpena Co.

C. W. R.

Both Berkshire and Poland-China hogs are excellent breeds and well adapted to conditions on Michigan farms. Some claim that Berkshires are more prolific and that the pigs make more rapid growth, but this is more a question of management and feed than of breed. You will find good herds of both breeds in Michigan and I do not think the choice of the breed will have much to do with your success as a feeder. As a breeding proposition, you can always sell good pure-bred pigs to farmers in other communities. There is plenty of room in Michigan for more good Berkshire and Poland-China hogs.

W. M. K.

STATE HORTICULTURAL MEETING AT FENNVILLE.

The Mid-Winter Meeting of the State Horticultural Society will be held in Fennville, February 11-12. A very interesting program will be presented and a large attendance from all over the state will be on hand for the opening session.

The subject of "Small Fruits" will be presented by H. J. Lurkins, Benton Harbor.

"Apples for Western Michigan," by F. E. Warner, South Haven.

"Cost Accounting for the Fruit Grower," by I. T. Pickford, Extension Specialist in Horticulture, M. A. C.

"The Present Status of the Pear Psylla in Michigan," F. L. Simanton, Bureau of Entomology, of Washington, D. C.

"The Latest in Spraying," Prof. H. J. Eustace, M. A. C.

The question box will be in charge of C. P. Halligan, East Lansing.

"The Grape Situation in Michigan," M. H. Pugsley, Paw Paw.

Other timely topics will be discussed and on Tuesday evening Prof. Eustace will give an illustrated talk along horticultural lines. No fruit grower can afford to miss this meeting.

Anyone desiring a copy of program apply to the secretary's office, Bangor, Michigan.

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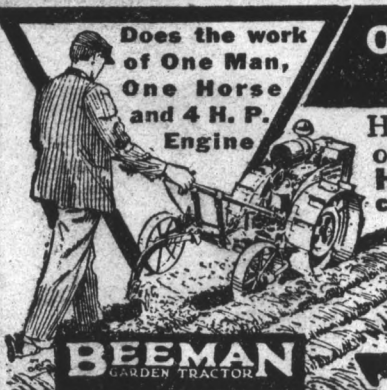
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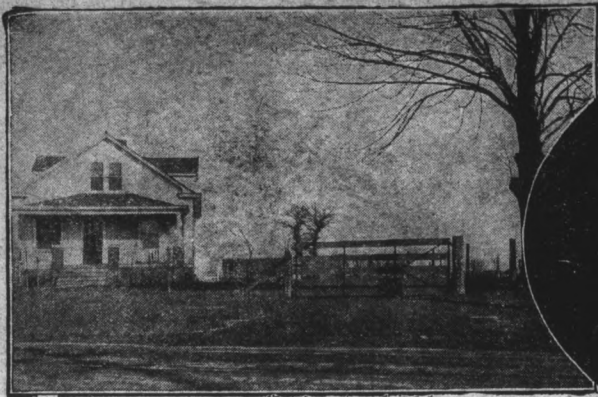
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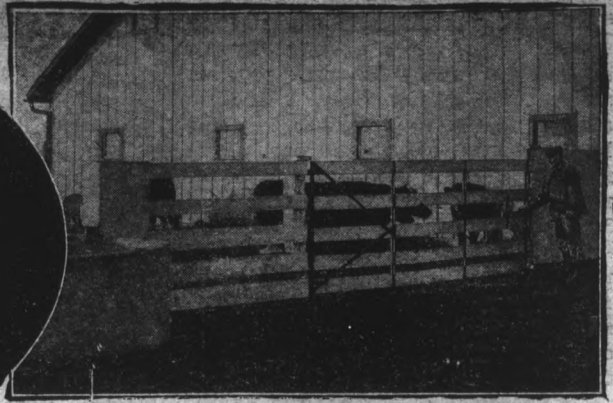
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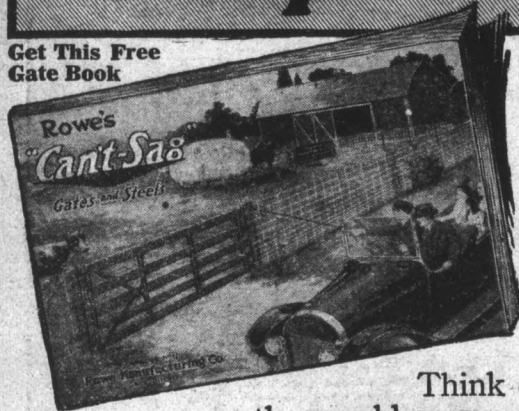
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—Famous Tippecanoe Stock Farm where Can't-Sag Gates are used.



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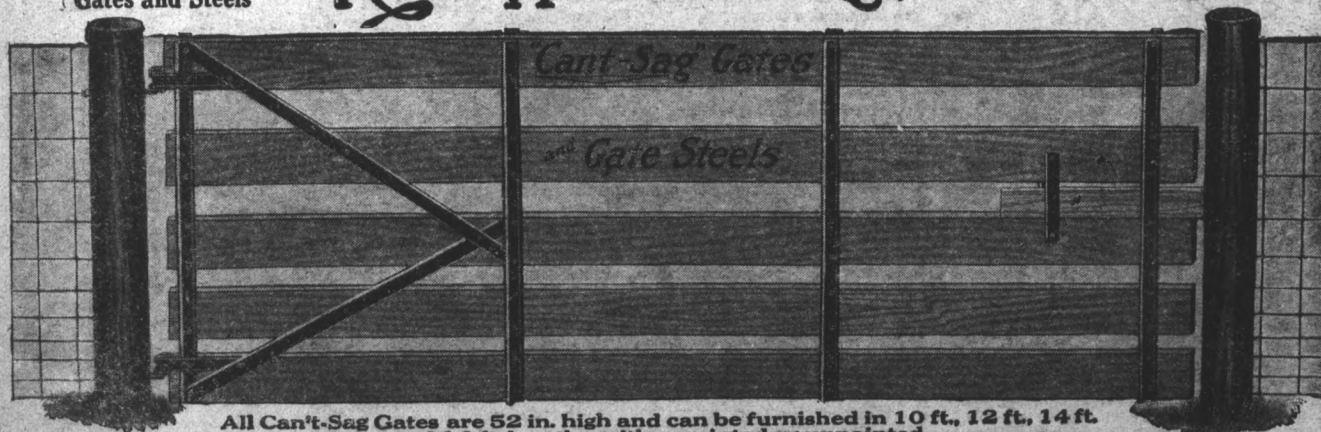
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