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Clean Cows and Clean Milkers

HEALTHY cows secrete healthy milk. Bacteria and dirt get into the milk after it is drawn from the cow or in the process of milking. The cow is not the guilty party. Milk does not come from the cow entirely free from bacteria, because it is impossible to keep the teats of the cow sterile; however, we can keep them clean and reduce contamination from this source. The ducts of the teats and the body temperature of the cow afford ideal conditions for the bacteria to multiply and, the best we can do, the lower ducts of the teats will contain a considerable number of bacteria. By using the first few jets of milk to wash out the ducts, the milk that goes into the pail will be practically free from bacteria. If proper care is taken at this stage of production, the few bacteria which get into the milk from this source are of but little consequence.

On the other hand, cows that have local diseases of the udder may give milk which at times is contaminated with the bacteria which cause this disease. There is a well-founded opinion in medical circles that such germs can live and pass into the body of the user and cause the same disease as the cow was affected with. This shows us that tuberculosis of the udder may readily be transmitted to human beings, or to young stock. Milk from unhealthy cows should never be used by human beings, or to feed young stock on the farm. No matter how well the other requirements are met, if the cows producing the milk are not all in good health we fail.

Dust and Its Dangers.

After proper precautions in milking we are confronted by other troubles. First, it is exposed to dust and dirt in the stable, which consists largely of dried manure and urine from the floor. The cow is not a particularly clean animal and the same materials that are found on the floor, will be found, in a greater or less degree, dried upon her flanks, belly and tail. If the long hair on the cow's tail, flanks and udder are not clipped and brushed and the udder washed the movements of the cow and milker set in motion a rain of this bacteria-laden dust and the swishing of the cow's tail only adds to the trouble.

The dried excrement dust is rich in organic matter, and loaded with bacteria from the intestines and urinary passages of the cow, which thrive and multiply on the food thus given them.

Preventing Dust and Dirt from Getting Into the Milk Pails and Utensils Insures a Low Bacterial Count and Preserves Its Natural Odor and Flavor.—C. B. Ford

By adhering to this solid dirt they get into milk and find ideal places to grow and multiply. When we drink such milk we take in many of the former inhabitants of the cow's stomach and intestines. The thought of this becomes repulsive when we remember that the cow may be throwing off tubercle bacilli before the disease appears elsewhere. There is greater danger of milk being contaminated from this source than before it leaves the udder. Such bacteria cause serious diseases when taken into the human stomach and intestines. Dried excrement from the cow's body will cause this kind of contamination and undoubtedly plays even a greater part when the cows are kept in a filthy, dust-laden stable so common on dairy farms.

Hay and straw dust will give rise to

the dairy rooms are a prolific source of contamination. Unclean methods of milking and handling of the products afford opportunities for the pollution of the milk by disease organisms, as well as dust and dirt that adheres to the milker's hands and clothing. Here is where such disease bacteria as typhoid, scarlet fever and diphtheria get into the milk. Milk as it comes from the healthy cow does not contain these bacteria. They come from the outside after the milk is drawn from the cow. Any person who has been attending a sick person can not work among cows or in the dairy room without being a source of danger to all who use the milk from such a dairy. Typhoid, diphtheria and scarlet fever outbreaks without number prove this point with their deadly results.

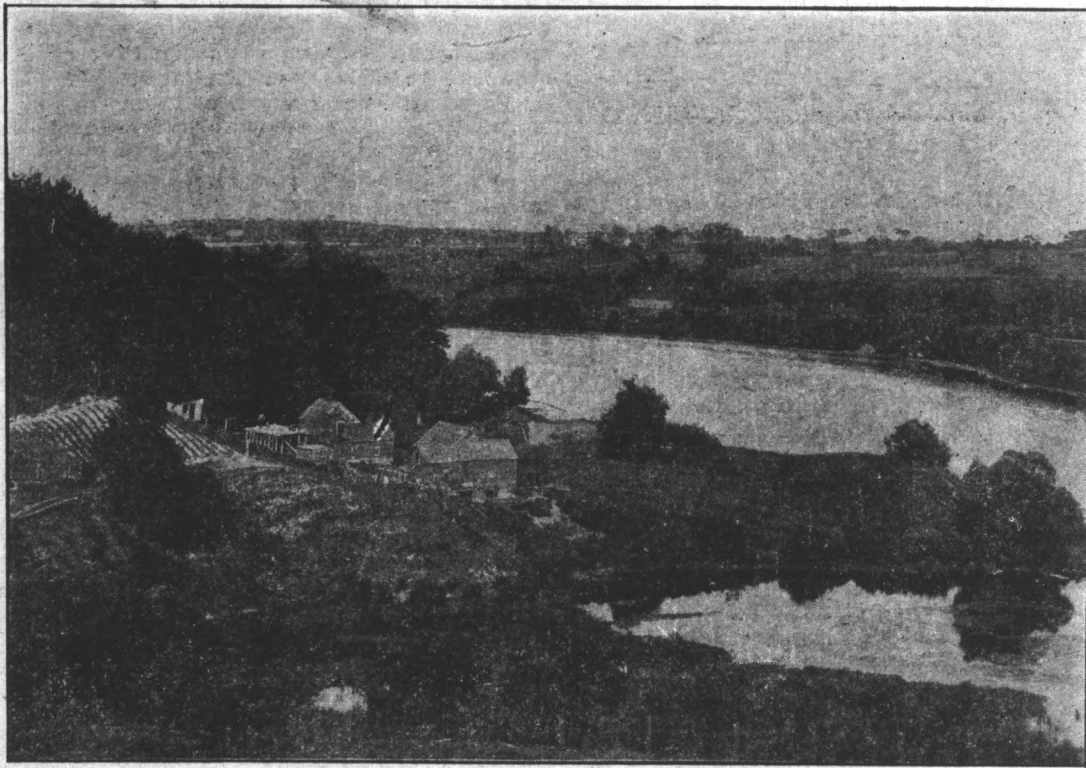
fresh supply of these bacteria ready to thrive and multiply on their new supply of food and they grow and multiply with disastrous results. If typhoid germs are in well-water they will have a chance to contaminate any milk that goes into the utensils after they have been washed in such water. Numerous other kinds of bacteria such as those that cause rosy, colored and slimy milk are frequently in well-water that is used in washing the dairy utensils.

Cooling Milk Retards Souring.

Cooling the milk immediately after it is drawn from the cow will retard the development of bacteria and the more the temperature is lowered the more the bacterial growth will be retarded. Milk that is promptly reduced in temperature to forty degrees Fahrenheit, and held at that temperature until ready for use will keep for a long time. When the milk is shipped to the city the trouble is invariably with the morning milk, which goes into the cans without being properly cooled. In the fresh milk the bacteria soon exceed that in the older milk that has been properly cooled. Cooling the milk does not kill any of the disease-producing bacteria or the lactic acid bacteria, so that it can not take the place of cleanliness in the production of milk. All of the bacteria present in cold milk will become active as soon as the temperature conditions become favorable. Cleanliness is of first importance and cooling is next.

Clean Milk at Small Expense.

Many instructive and entertaining articles have been written on the subject of clean milk, and if all of this advice could be carried out, a practically clean product could be made. But the success of such a plan involves expenses that would work hardship upon many of the producers at the present time. This is not saying that good milk cannot be made at present prices,



no very serious diseases, but it will tend to hasten the souring of the milk, and cause various bacterial growths that will impart a disagreeable odor and taste to the milk. Such dust is as much out of place so far as clean milk is concerned as the other. Lactic acid germs are always present where conditions are right for their growth and development, and while they do not affect the sanitary qualities of the milk, they do affect its keeping qualities.

Personal Cleanliness Necessary.

The milkers and handlers of milk in

In the care of dairy utensils there is still further chance of contamination. This trouble is not from bacteria that commonly adhere to these utensils but from those introduced in handling and washing. Washing and caring for the dairy utensils is very exacting from the standpoint of cleanliness and the quality of the water used. A supply of bacteria-laden water which will leave some of the bacteria on the utensils is an insidious source of danger to consumers of milk. When the milk goes into these utensils there is a

es, but to show that the dairymen who have a few cows can make clean milk without having any very elaborate equipment. He can keep his milk clean by simply giving attention to the few simple details of handling the milk and the small expense involved will require but a small outlay of time and money. Among the essentials of clean milk I would name a healthy cow, milked in a clean stable, by a clean milker and a clean covered pail, and handled only by clean and

(Continued on page 17).

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VOLUME CLIII. NUMBER ONE

DETROIT, JULY 5, 1919

CURRENT COMMENT

Sift the Wool Graft Charges

VERY grave charges were made last week regarding the conduct of government wool purchases, by Milo D. Campbell, Michigan member of the Agricultural Advisory Committee and chairman of the general board of the National Board of Farm Organizations. These charges were made public through a letter written by Mr. Campbell to Secretary Charles A. Lyman, of the National Board of Farm Organizations, the contents of which were given to the public through press dispatches from Washington, which reveal charges of a nature to demand immediate official attention. The published version of Mr. Campbell's letter charges that under the direction of the Wool Division, a department created for the handling of government wool purchases, wool was purchased by dealers from the growers "in the grease" at prices ranging from approximately sixty-five to sixty-seven cents per pound, and sold to the government as "scoured wool" at prices ranging from \$1.30 to \$1.85 per pound; that not a single pound of wool sold in that way was actually scoured by the buyers or dealers, and that this plan was put into effect in order to create a "smoke barrage" under cover of which the buyers and dealers could make huge profits, which are alleged to have reached many millions.

In refutation of this charge officially designated wool dealers who purchased wool on government account state that fortunately the records kept by the government are so complete that every pound of wool bought by the government from any dealer can be identified, with the action of the valuation committee shown, the amount paid for same by the government, date of payment, kind of wool, whether in grease or scoured, and if sold to what manufacturing concern it was sold and the price paid for it. It is also stated that Boston wool dealers have requested Mr. Campbell to either substantiate his claims of profiteering or make public admission that he was misinformed.

These charges are of such a grave nature, involving as they do the integrity of a governmental department as well as that of the officially designated wool dealers who made purchases on government account, that they should be made the subject of a thorough official investigation at once. The facts should be easily capable of determination by competent authority. Either the Department of Justice, or a committee of congress, or both, should take early steps to thoroughly sift

these charges to the bottom, give wide publicity to the results, and insure just punishment of the guilty in case they are substantiated. If he has been correctly quoted, Mr. Campbell will doubtless be heard from in greater detail, but in any event an immediate and thorough investigation should be made to the end that the public may have adequate information regarding the conduct of the wool deal and exact justice be done to all who were connected with it.

Paying the Price of War

WITH the formal signing of the peace treaty Germany has bowed to the inevitable and accepted the terms of peace offered her by the plenipotentiaries of the allied and associated governments. The terms imposed will justly compel Germany to pay the price of war to the limit of her ability. The penalty will be a burden on the country and its people for many years, but its justice is obvious, and the future of its people must in large measure depend upon their ultimate recognition of this fact. That the political revolution in Germany did not accomplish a moral reform in her official thoughts and acts is evidenced by the sinking of the German fleet in violation of the spirit if not the letter of the armistice; by the revelation of an alleged plot to sacrifice the peace for which they had asked after suffering military defeat and pending disaster in the hope of trapping the allied armies in the interior of Germany, and by the language of their acceptance of the terms, which implied the necessity of continued compulsion to insure that the accepted terms will be carried out.

Only by an exhibition of good faith in the payment of the price of war, which will be but a tithe of its cost to the world, can the German people regain even a measure of their previous standing in the great human family. Nations, as well as individuals, must pay the price for their misdeeds, and have no right to cry for the tempering of justice with mercy when their misdeeds have been deliberately brutal.

Community Live Stock Breeding

AMPLE evidence of the benefits to be derived from a real community action is furnished by the sales of Livingston county Holstein-Friesian cattle to buyers from the different dairying sections of the country. Naturally it has required some years for this popular breed of dairy cattle to gain such a solid standing in this county, for many farmers have hesitated about falling in line with the pronounced preferences of the community. The farms of Livingston county can produce just as good Guernseys, Jerseys and Ayrshire cattle as the big black and white breed, but the fact that a majority of farmers are working with that breed makes the problem of handling the one breed far easier, and besides, the breeder is sure of finding a remunerative market right at his farm for all of the high-class surplus animals he can produce.

In breeding dairy cattle there is ever present the tendency to deteriorate, especially when one is working with a comparatively small herd and finds it practically impossible to make proper selection of sires. It is only by the most determined and persistent efforts that breeders who are working with large herds are able to maintain a proper system of rigid selection to hold their animals up to their high standards. Farmers, who are keeping small herds, find cooperation in the ownership of sires and an exchange of breeding animals of great benefit in overcoming these breeding problems.

Whenever a large number of farmers are breeding the same kind of cattle in a community always there will protect the beet plants from beetles.

be some who are better judges of blood lines and of type and quality and a wiser appraiser of values, while others seem to balance these qualities with their superior ability as feeders or a closer apprehension of care and sanitation. Having all decided upon one breed these men are all drawn closer together until the best that is in all of them is gradually blended together to the benefit of the entire community. In the meeting of these men some have little to give; others have had more experience and are distinctly abreast of the times in all matters relating to herd management and finding a good market for the surplus stock. Their thoughts, plans, experience and wisdom proves of untold value by helping to form and create the community spirit which finds its life in the courage and inspiration it gives to the men who are just beginning in the business.

Having made the Holstein-Friesian the standard dairy cow of that county the Livingston county breeders naturally took action to create a better market for their surplus breeding animals. How well they have succeeded is shown by the reports of the many sales of carloads of fine breeding animals shipped from that county to various parts of the country during the past few months. While we have plenty of breeds of dairy cattle in Michigan there is great need of our different communities getting together and deciding upon some one breed and finding a more remunerative and convenient market for the surplus stock they have to sell. The advantages of this kind of community breeding and selling are many; and it is no longer necessary to go to England, Holland, Belgium, or France to find communities that have solved the problem. Visit Livingston county.

Michigan's Growing Crops

WE travelled on nearly a thousand miles of Michigan highways since June 21, talking with farmers and observing crop conditions. Our big surprise was to find such an excellent stand of corn on the farms north of a line running east and west through Owosso and St. Johns. In Antrim and Emmet counties the fields were uniformly larger than in a few of our southern counties.

The hay crop is spotted. Dry weather and grasshoppers have ruined the crop in some of the northern districts while in other northern sections the yield will be from fair to good. Farmers in the central counties will fare much better. Many heavy fields were visited there and two tons per acre was freely predicted by these growers.

Michigan's greatest crop of winter wheat will soon be harvested. We believe that thirty-five bushels per acre will be a common yield over large sections of the state. Many farmers who were enthusiastic over spring wheat this year will be more cautious another season as the outlook is not good. Barley will be a fair crop and oats show considerable improvement the past fortnight. This crop however, is not as promising in the northern counties as farther south. Rye, like wheat, will make 1919 a record year. The acreage is large and the condition could hardly be improved. A better stand of potatoes can not be imagined than that now to be seen in our commercial potato sections, especially in the Cadillac and Grand Traverse regions. The acreage, however, is less than for 1918. The commercial cherry crop is promising, while apples on the average farm orchard will not be large. Our trip did not take us into grape and peach growing sections. Beans have a fine start, but labor conditions are interfering with the sugar beet outlook. Also, in some sections spraying has had to be resorted to against beet plants from beetles.

While there are a number of discouraging features the general feeling among the farmers is that with average conditions prevailing from now on, the season's crops will be far better than for the past two years.

News of the Week

Wednesday, June 25.

FRANCE has decided to require complete reparation from Germany for the sinking of the German warships at Scapa Flow.—It is expected that the signing of the peace treaty will take place Friday.—Five officers and 553 Michigan men in casual companies Nos. 695 and 699 left Camp Merritt yesterday for Camp Custer where they will be demobilized.—Milo D. Campbell of Coldwater, charges federal wool buyers with huge fraud and asks inquiry by the federal trade commission.—General John Pershing Goes to England to receive the degree of doctor of civil laws at Oxford.

Thursday, June 26.

ADVISES to Paris are that the German government is unable to organize a delegation willing to undertake the unconditional signing of the peace treaty.—The opinion is strong in diplomatic circles that Ireland will be proclaimed a Dominion within six months.—Two thousand shipbuilders angered by a two-cent increase in the street car fares riot and overturn cars at Toledo, Ohio.—Massachusetts is the eighth state to ratify the woman's suffrage amendment.—Striking telephone linemen at Lansing have been granted an advance of fifty cents a day, making a total of \$4.75.—Miss Elizabeth Palm, assistant librarian at M. A. C. has been chosen by the war board as sponsor for the Warship "Volunteer."

Friday, June 27.

GERMAN envoys, ministers Mueller and Bell, are enroute to Paris to sign the peace treaty.—Director-General Hines says that a sharp increase in freight rates may be necessary to make up a huge operating deficit.—The first official victory medal to be struck will be issued to President Wilson as commander-in-chief of the army. Henry Ford offers to return his share of the war profits of the Ford Motor Company to the government.—It is estimated that ten thousand American soldiers have married French girls.—The senate has appropriated \$2,300,000 as a special fund to enforce the law against alien anarchists by deportation.

Saturday, June 28.

GERMAN envoys reach Paris and preparations are made for signing of the peace treaty.—Germans renew war on the Poles, and Paderewski pleads with Allies to supply his army with munitions.—Commander Evangeline Booth, head of the Salvation Army in the United States, has been awarded the Distinguished Service medal for her work during the war.—Extradition papers have been prepared in an effort to have Harry Thaw returned to New York for trial on the Gump charge.—Robbers hold up officials of the Middlefork mine near Benton, Ill., and secure \$40,000.—An anarchist plot to assassinate King Alfonso of Spain has been uncovered.

Sunday, June 29.

THE peace treaty was signed at Paris yesterday, the German envoys signing at 2:12 p. m. President Wilson affixed his signature at 2:14 and Lloyd George at 2:17 p. m.—President Wilson decides not to lift wartime prohibition ban until after the demobilization of all troops.—Five hundred marines have been ordered to Schleswig to put down the Red revolt.—Paris crowds cheer Wilson as he starts for home after signing the peace treaty.—Surplus army meat is being offered for sale to various cities.—The 339th infantry is expected to drop anchor in New York harbor tonight.

Monday, June 30.

FORMER Chancellor Hollweg, of Germany, offers himself to the Allies for trial in place of the former Kaiser.—Germans are notified that their ports can be opened to world trade as soon as the Weimar assembly ratifies the peace treaty.—The British dirigible R-34 is ready to attempt the trans-Atlantic trip tonight.—The mail rates are to go back to the old basis after today.—Senator Walsh promises help of the United States to Sinn Feiners.—Six are dead and three injured in two automobile accidents at Flint, Mich.—Knights of Columbus make extensive plans to carry on the Americanization doctrine and the war against Bolshevism.

(Continued on page 22).

The Bureau of Markets

UNTIL about six years ago the United States Department of Agriculture gave almost exclusive attention to the problems of agricultural production, crop rotation, cultivation, plant and animal diseases, insect pests, and similar questions. Up to that time practically no attention had been given to the problems of marketing and distributing. In May, 1913, with the modest appropriation of \$50,000 provided by congress for the purpose, an Office of Markets was established to give attention to the marketing side of agriculture. Persistent progress was made and when war was declared a little over two years ago, the office has become a bureau with an annual appropriation of approximately \$2,000,000. The first four years of pioneer work that had been done made it possible to suggest, at the outbreak of the war, a policy with reference to food production and food control that was enacted into law substantially as we outlined it, and which has since been the basis of some of the most important activities of the nation bearing upon the winning of the great struggle.

The activities of the Bureau of Markets naturally fall in four classes: (1) investigation to determine facts; (2) demonstrations on the basis of facts determined by experiment or inquiry; (3) service work, largely through the collection and dissemination of market information, and (4) regulatory work, involving the enforcement of numerous statutes.

The market news work involves largely the collection and dissemination of information by telegraph. Its outstanding feature is that it is designed to keep before the producer, the distributor, and the consumer, who keep in touch with it, a perpetual picture of the movement of important fruits and vegetable crops to market, the supplies arriving in all of the more important cities, and the wholesale prices prevailing in each. Thus the grocer knows daily the shipments of the preceding twenty-four hours from his own and each competing district, the actual number of cars shipped, and the actual arrivals upon all the principal markets within his reach. Every railway division superintendent in the country wires our Washington office at the close of business each night the number of cars originating on his division during the preceding twenty-four hours. A night force of telegraphers receives these reports and an early morning force of clerks tabulates the figures in order that the daily statement of shipments and destination may be ready for transmittal over our leased wires to the important markets as soon as the day's business starts.

*Chas. J. Brand, Ex-Chief Bureau of Markets
Explains the Functions of this Branch of
the U. S. Department of Agriculture.*

We have had under lease between fifteen and sixteen thousand miles of telegraph wires, which are heavily loaded with traffic twelve hours out of every twenty-four. Our incoming night telegrams are all handled over the commercial wires, and our outgoing information largely on our own wires thus our collecting and distributing machinery is active twenty-four hours every day, six days in the week. Our quotations record actual facts and actual prices. The hugeness of the movement of some commodities may be illustrated by the daily live stock movement. We have had reported in a single day over eight thousand cars of live stock. You will be interested to know that since June 1, a year ago, all live stock quotations emanating from Chicago, the greatest live stock market in the world, are collected by the bureau of markets and distributed through the commercial news dispatch departments of the telegraph companies, and through the various press associations. Not only do we aim to assist the distributors but we render many special services to producers. The bureau has, all told, about 106 offices, serving 187 project branches, located in fifty-five different cities, covering forty states of these offices twenty-three are known as market stations and are devoted especially to the distribution of information. Every one of these stations is a distributing center for news direct to producers. Telegraphic information received from Washington and from other markets is reproduced by mimeograph and mailed the same day to all shippers doing service within a mailing radius of each permanent office.

To serve even more effectively those heavy commercial shipping areas that are distant from large marketing centers, a large traveling field force is maintained. One or two, or in the case of especially important commercial deals, even more may be assigned to each heavy shipping center to establish a temporary office during the period of greatest movement. Thus men operating at producing points keep the bureau advised as to the prevailing f. o. b. prices in their respective territories; and release by telegraph, telephone, mail and bulletin boards information obtained from the markets. As an illustration, the work of our temporary field station at Laredo, Texas, in assisting the Texas onion growers in distributing from three to five thousand car crop may be cited. In

this case we not only assisted in the equitable distribution throughout the United States of the Bermuda onion crop, but through our relationship with the railroad administration and the carriers, we arranged for and allotted last year the car supply utilized in this great crop movement. In addition to daily telegraphic reports, weekly summaries of shipments and weekly market reviews are prepared.

Several years ago we began to develop monthly reports of the holdings of food in cold storage. Box and barrel apples were the first commodities upon which reports were collected and distributed. At the present time we are reporting monthly in addition, on case and frozen eggs, American cheese, creamery and packing stock butter, frozen and cured beef, frozen dry salt and sweet pickled pork, lard, lamb and mutton, all classes of poultry, including broilers, roasters, fowls and turkeys and twenty-five classes of frozen fish. The importance of prompt and regular information on the immediately available food stocks in cold storage is too obvious to need comment. The facts gained are, of course, of constant use, not only in the food trades, but in our production and conservation and distribution programs. If the reports from the freezers show 150 or 200 per cent larger stocks than on the corresponding date of the previous year, we can be fairly sure that it will be safe to let up on our conservation efforts.

The Food Products Inspection Service has inspectors stationed in some thirty of the larger markets in the eastern and central states. These men can be called upon at any time to examine and report upon the quantity and condition of any shipments of fruits or vegetables arriving in their respective markets. They make such inspections only when requested to do so by some interested party. These inspectors are authorized also to make inspections.

Car shortages for fruits and vegetables movement have been reported by our field agents in practically all sections of the country and we have been able to put before the Commission on Car Service formerly, and now before the director general's office, accurate and prompt information of cars needed in particular sections, thus facilitating crop movement and reducing loss of foodstuffs.

Much attention has been given to the proper preparation, handling, pack-

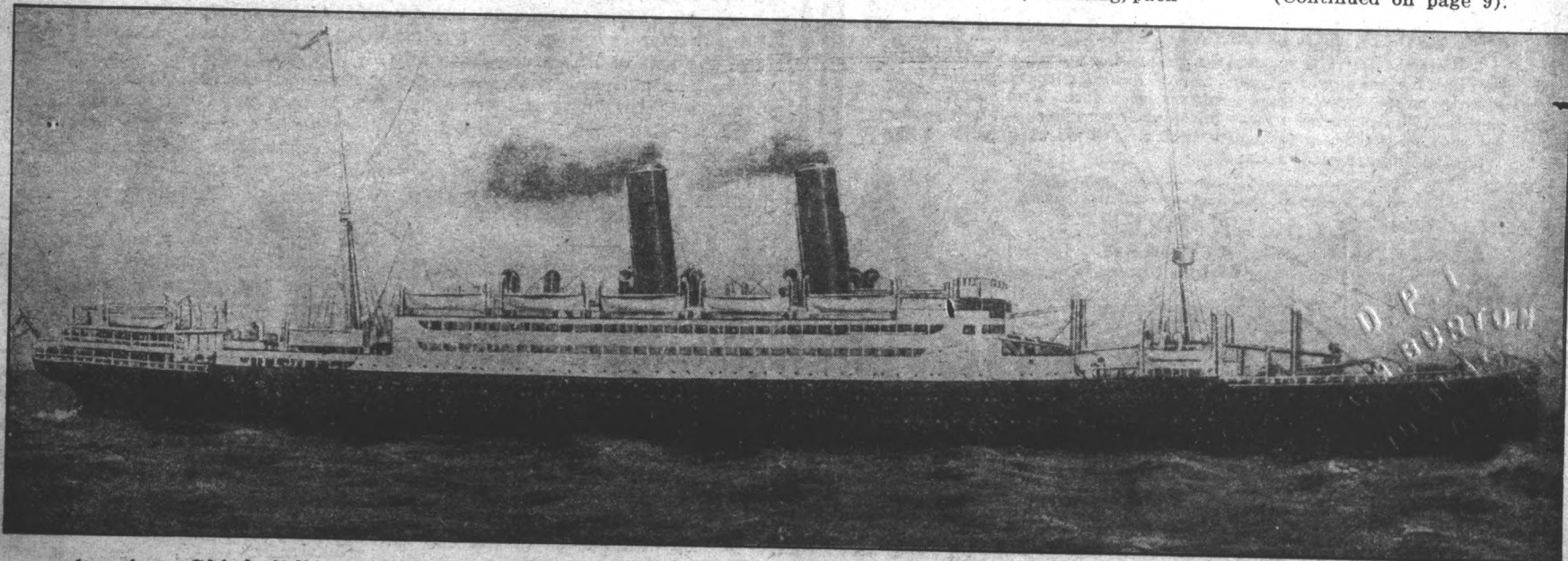
ing and loading of perishables for shipment, efficient refrigerator car construction, protection of the products against loss from freezing in transit, and standardized car loading methods. Out of our work has grown a uniform standard for refrigerator car construction which has now been adopted by the railroad administration and the carriers, and which will furnish the basis for the construction of future refrigerator cars and the rebuilding of existing equipment.

In cooperation with the Bureau of Plant Industry, there has been completed an outline for an investigation of the vegetable oil industry of foreign countries, in order to show the development of the industry during the war and its present position. The object of the investigation is to show the extent of competition encountered by the American industry as to the volume and costs of the foreign products. The information derived is expected to serve as a basis for definite conclusions as to the outlook for the American industry including the production of the raw materials.

Pursuant to the recommendation of a special commission appointed by the President in March, 1918, to consider national policies relative to the live stock industry and meat situation, the President on June 18, 1918, issued a proclamation providing that public stock yards operated for compensation or profit, and persons handling or dealing in live stock, or in connection with such stock yards should operate only under federal license on and after July 26, 1918. The administration of this service was placed under the Secretary of Agriculture by whom the Chief of the Bureau of Markets was designated as his representative in the enforcement of regulations governing licenses. The live stock market reporting organization of the bureau was at once reinforced and extended so as to provide for the immediate supervision of some thirty live stock markets by supervisors stationed at these markets. Approximately seventy additional smaller markets also were placed under the general supervision of these market supervisors. To date, 121 stock yards, 394 exclusive commission firms, 785 traders, 107 order buyers, 231 packer buyers and 1,051 concerns doing two or more classes of business have been licensed.

Hundreds of complaints and adjustments have been handled by the local supervisors and by the Washington office of the bureau. Inadequate facilities and service have been remedied in a large number of instances, including the building of new scales, pens and alleys, the cleaning of unfit yards, the

(Continued on page 9).



American Shipbuilding and the Development of Overseas Trade has Extended the Functions of the Bureau of Markets.

SAVAGE



Chicken Insurance —

A .22 Savage Hi-Power

A FLURRY of feathers, a squawk and a red streak going under the fence — another chicken gone!

How long are you going to stand it?

You know that fox 'won't look at your traps. And when your sling lead at him with your old slow-as-molasses .30-30, he knows you're guessing—you don't know how much to hold over him to allow for the drop of the bullet or how much to hold ahead of him to allow for his speed. And he knows you're half afraid to shoot anyway—the old .30-30 bullet might glance and hit a cow or a neighbor.

You need Chicken Insurance—the .22 Savage Hi-Power—the special tool for the job.

The .22 Savage Hi-Power rifle snaps its wicked little 70 grain Spitzer point bullet out 2800 feet—more than half a mile a second.

You don't have to guess how much to

hold over—you don't have to guess how much to hold ahead—you simply hold dead on. And at the crack of the gun the vicious little bullet bites in right where you are holding.

It hits a paralyzing, explosive, knock-out punch—hits hard enough to drop grizzly and moose dead in their tracks—yes, and tiger and buffalo, too, because its done it.

But it is safe to use anywhere, because the bullet will not glance. You can't make it glance, not even from water.

These are some of the reasons why so many United States Forest Rangers and Government hunters and professional wolfers use the .22 Savage Hi-Power. It's the modern, special tool for predatory animals—and, besides that, Captain E. C. Crossman, the United States Army Ordnance Department Expert, called it "The Best Deer Rifle in the World."

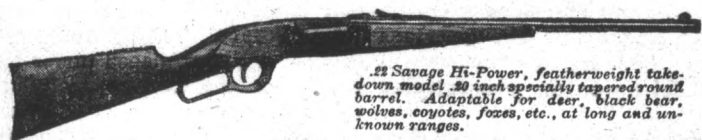
Write us for particulars and look at the rifle at your dealer's

SAVAGE ARMS CORPORATION

Sharon, Pa.
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Detroit, Mich.
New York, N. Y.



.22 Savage Hi-Power, featherweight take-down model .30 inch specially tapered round barrel. Adaptable for deer, black bear, wolves, coyotes, foxes, etc., at long and unknown ranges.

POWER-SIMPLICITY ECONOMY

WATERLOO BOY ORIGINAL KEROSENE TRACTOR

Dependable Power

that does not fail when your farm work has been delayed and you must take advantage of favorable weather and ground conditions.

Reserve Power that's available in emergencies—for variable soil conditions or upgrade work.

Simple Power

which the experienced hired man can utilize to full day capacity, at any draw-bar or belt job on the farm.

Economical Power

that insures low operating cost—works all day under full load on 16 gallons or less of cheap kerosene.

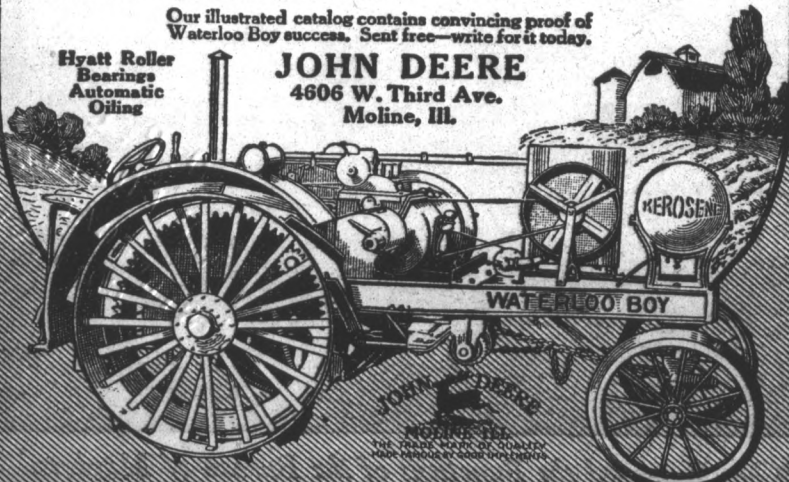
Built to Standard Quality

Waterloo Boy fully sustains the quality-fame attained by Waterloo Boy power machines in 25 years' manufacturing success. Backed by a plain guarantee from a responsible manufacturer. Two-speed motor supplies ample reserve power for tillage operations, and belt power for all farm needs, including threshing. All working parts of the Waterloo Boy are easily accessible.

Our illustrated catalog contains convincing proof of Waterloo Boy success. Sent free—write for it today.

Hyatt Roller
Bearings
Automatic
Oiling

JOHN DEERE
4606 W. Third Ave.
Moline, Ill.



Agricultural News

RUMANIA EATS AMERICAN FLOUR.

ALL Rumania is eating flour from America today. The people realize where the aid has come from and are exceedingly grateful. Without American help starvation certainly would have become very general. These are the words of Lieutenant Colonel H. Gideon Wells, American Red Cross commissioner to Rumania, who recently arrived at Belgrade from Bucharest.

Colonel Wells said the great bulk of the Rumanian food supply, including about twenty thousand tons of flour monthly, is furnished by the American food administration. It is sold in wholesale quantities to the government, which attends to all details of transport and distribution. Flour trains run continually from the ports to the interior and have the right-of-way over all other transport. The supply is being well handled and there is no longer danger of starvation except in isolated areas, particularly in the Dobrudja region, where local transport is excessively difficult.

Supplementary to the food administration program the American Red Cross commission to Rumania has already developed a nation-wide food and clothing relief program which aims particularly at the relief of the destitute, the welfare of orphans, the organization of sewing-rooms and the general amelioration of conditions. This effort had the hearty cooperation of the Rumanian government. From King Ferdinand and Queen Marie to the last clerk, the Rumanian people are very grateful, and "to be an American is to be honored."

CHASES RATS WITH TRACTOR.

GET out the gas masks!" That no doubt will be the slogan of Nebraska rats, at least those which infest the corn cribs of farmers, for J. C. Boyd, a farmer, has devised a method of killing rodents that beats rat poison or any exterminating agency.

Boyd backed up his tractor to his corn crib the other day, which was fairly alive with rats that had defied rat poison and attacks of dogs on the place and turned on the exhaust. Soon there was a gas barrage that Boyd believes was equal to any put on in the late war. The rats began to scamper from the crib and most of them succumbed to the fumes of gas.

Those few that got out of the crib were so weak from inhaling the gas that they could not put up much of a fight and the dogs that had been gathered for the occasion made easy work of them. But inside the crib was the real sight. The dead rats were found by the dozen, and when Boyd finished gathering them up he had more than a tub full of the rodents.

Boyd thinks this is the quickest and most satisfactory method of getting rid of the rats and he proposes to follow the plan until they are exterminated. His neighbors having heard of his successful plan also have begun to adopt it with beneficial results.

WESTERN NEW YORK FRUIT CROP LIGHT.

THE federal government's forecast of a fifty-two per cent apple crop in western New York is not far out of the way, according to recent orchard investigations. The Rhode Island Greening crop will be very good, but the Baldwin crop will be small.

The government's estimate of a sixty-five per cent peach crop will not hold good in the Lake Ontario peach belt. B. J. Case, of Wayne county, a leading fruit grower, has made a careful survey of orchards in the district east of Rochester, and has found that peaches will be only a fifty per cent

crop, while in Niagara and Orleans the condition is not over forty per cent. These counties have not only suffered a large decrease in acreage during the last two years, running from twenty-five per cent in Niagara to fifty per cent in Wayne, but the yield is light.

Mr. Case reports that cherries are a total failure. Pears and plums will each be fifty per cent of a full crop. Strawberries have been a good crop, selling as high as thirty-five cents per quart, the highest price the growers have ever received. Raspberries are yielding a fine crop. One Wayne county grower will harvest about fifty thousand quarts, which will bring twenty cents a quart, making a \$10,000 crop. The grape crop not only in Wayne but other counties will be large.

All kinds of fruit are bringing unusually high prices, and the growers are making larger profits than in years of full crops.

The central packing house idea has been so successfully developed in Niagara county, that cooperative associations to operate central packing houses have been formed in a large number of fruit growing communities throughout western New York. These organizations will standardize the fruit pack, which will be sold under a county organization brand.—E. E. R.

BRAND SHODDY CLOTHING.

A LAW providing that all clothing shall bear a plain mark, stating whether it is all of virgin wool or part shoddy, is demanded by the National Sheep and Wool Bureau, in annual meeting held recently in Chicago.

"If we get this law, moderate priced goods will be much cheaper," said Alexander Walker, president of the bureau. "The people have been paying big prices for goods marked 'all wool,' when in fact, a large part is second-hand wool, saved from old clothes sent in by ragpickers."

THE ARMY'S SURPLUS FOOD.

SIXTY-EIGHT bids for the purchase of approximately 143,000,000 pounds of surplus canned and cured meat were rejected by the War Department recently. The bids came mostly from packers, and in the majority of cases were for less than half of what the government had paid these same packers for the goods originally. Allowance, of course, has to be made for the difference between war prices and those obtainable on a peace market. It must also be borne in mind that the high prices in the first place were due to the enormous demand from the government and the consequent reduction of supplies available for the civilian market.

Another element to be considered in establishing the present market value is that these goods were packed for army use and they cannot be resold for any such purpose. Goods for civilian use are packed differently as to cut, size of cans and general attractiveness. The army goods have a generally unfinished appearance and are unattractive to the eye, and the public would expect to get them at a considerably reduced price, so that while the War Department may feel greatly disappointed at the result of its effort to dispose of the goods, it is just as well to take these facts into consideration. For the packers to undertake to rehandle these goods involves considerable of a business risk, which they may not be too eager to undertake. The War Department can hardly expect to resell its own purchases on a war basis.

SOLD OUT.

Gentlemen:—I have got to send a change of copy for my advertisement. You have sold me out. P. P. Pope.

Lillie Farmstead Notes

THE best quality of hay is that which contains the largest per cent of digestible nutriment and is the most palatable, when cut before the crop gets too ripe and cured in such a manner that the leaves will be retained.

I used to think that leaves were worth no more, pound for pound, than the stalk of the plant, providing the stalk was cut before it had a large per cent of woody fiber and was still digestible and palatable. That is, I believed, and I think most people did, that a ration if composed of the proper amount of protein, carbohydrates and fats in good palatable and digestible condition was just as good as any other ration and that the protein, the carbohydrates and fats in the stalk and in the grain were equal and perhaps superior to these nutriment found in the leaves.

But Dr. McCollum, in his extensive experiments in nutrition has brought out new facts that never were known before and has opened up a field of nutrition that never was before explored. Dr. McCollum has performed a great many experiments which warrant him in saying that a sufficient amount of protein, carbohydrates and fats is not all that is necessary in a ration. There are two unknown ingredients which he calls Fat Soluble A and Water Soluble B that must be present in this ration with the necessary amount of protein, carbohydrates and fats or else the ration is not a proper ration. At first he was inclined to think that while young growing animals must have these ingredients in the ration, adults might live in normal condition without them, but more extensive experiments prove beyond a doubt that adults also must have these ingredients in their rations if they keep in normal condition.

He finds Fat Soluble A in the butterfat of milk, in the yolk of eggs, and in the leaves of plants. He finds Water Soluble B in milk and its products and in the leaves of plants. Now the food which we feed our animals should contain these essential vitamins, hence the making of hay and ensilage and the procuring of all the foods for our domestic animals becomes a much more interesting subject than ever before. It does make a difference whether you save the leaves on the alfalfa and clover and the other plans which are stored for our live stock or not. Animals would not live and keep in normal condition on straw without leaves and an abundance of grain for long periods of feeding. They must have the leaves of plants in order to get these essential vitamins, consequently the hay maker must devise some means if he wants to get the best results in feeding to so cure his hay that he preserves the leaves on the plant.

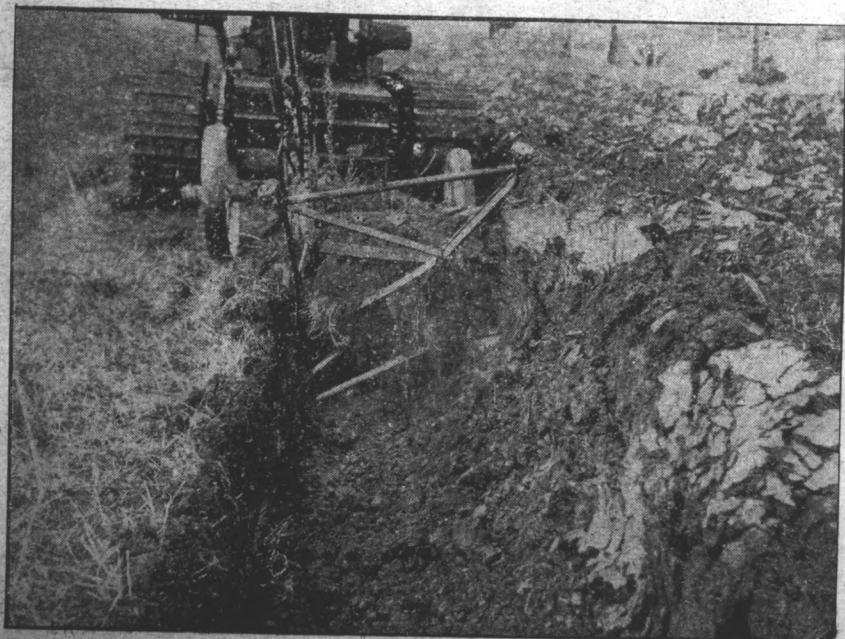
If you cut clover or alfalfa and let it lay in the swath in the blistering sun until it is dry, the leaves will become dry and brittle like parched paper. In stirring up the alfalfa or the clover the major portion of the leaves all break off and fall on the ground and one rakes up practically nothing but the stalks. In this way you have lost all of these essential vitamins. On the other hand, if just as soon as the alfalfa or clover is nicely wilted in the swath, before the leaves get crisp and dry, this is raked up and put in cocks and allowed to cure in the cocks away from the sun, the leaves do not break off and are retained on the stalk which makes it possible to save these essential vitamins.

The most observing farmers have noted for a long time that cattle did better on hay that was cured away from the sun so that the leaves do not dry up and fall off than they do where the leaves were largely lost. For my part, I laid this largely to the palatability of the leaves. They contain more aroma and cattle like them better, but Dr. McCollum has come forward with a scientific reason and it is backed by extensive experiments which cannot be gainsaid; we have simply got to believe that these essential vitamins are in the leaves and in the leaves only, and if we want to keep our live stock up to normal vigor we must feed them the leaves of plants along with the grain and the stalks and if we want to keep up the vigor of our children and ourselves we must see to it that they get an ample supply of milk and butterfat in their diet and that we encourage the eating of leaves like lettuce, cabbage, spinach, Swiss chard, etc. In no other way can the human being be properly nourished.

Dragging Corn.

Not in a number of years have conditions been so favorable in our locality for working the corn ground after the corn is planted, and even before for that matter, as they have this year. For many years as soon as the corn was planted a spell of wet weather would follow so closely that we could not work the land, which allowed the weeds to get ahead of the corn, when a lot of work was necessary to secure a clean corn field. This year has been favorable; the corn was dragged twice before it came up and again afterwards, killing untold millions of weeds with a minimum amount of labor. If we could only have just the right conditions all the time farming would be a much pleasanter business.

The bacteria or organisms which cause the souring of cream are most active at temperatures ranging from eighty to one hundred degrees Fahrenheit. When the temperature falls much below sixty degrees they become practically dormant.



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Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws. Write AERMOTOR CO., 2500 Twelfth St., Chicago

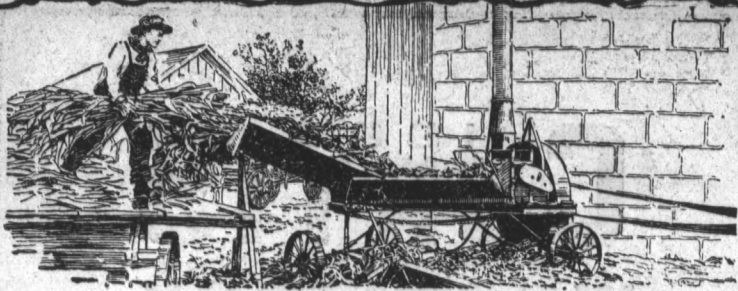


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		Binder Twine

International Harvester Company

of America, Inc.

Chicago

U S A



Crops in Young Orchards

THE farmer with a small acreage grower desires fruit bud formation and a desire to own an orchard he does not wish to encourage a large rank growth. Then the hoed crops, like vegetables, are not desirable in bearing. A regular income is necessary from the land to meet the expenses of the home. Apple trees take quite a long time to return a profit and even peaches, pears and plums have quite a bill charged against them before they are ready to start payment.

The orchardist must realize that the trees must come first. Otherwise it is a waste of time to plant them. The crops grown in the orchard must not rob the trees of fertility and stunt their growth. What crops can be grown at a profit between young fruit trees without injuring them? Strawberries can be grown in young orchards. Currants and gooseberries have been profitably grown in orchards in sections where there is a good market for such fruit.

Melons and cucumbers are often grown between young trees with no damage to the trees and the income from such crops helps the orchardist to pay the bills while the trees are increasing in value. Some orchardists grow corn in their young orchards and where the soil is fertile and fertility is constantly added, good crops of corn can be produced and the trees are not injured. Corn should not be planted so close that the young trees are shaded or injured by the horses when the corn is cultivated. A crop of beans has made spending money from many a young orchard. Being a legume, the beans add a certain amount of fertility to the soil.

Grapes can be grown in young orchards in sections where they will thrive and it might be mentioned that there are many districts growing no grapes where they might be found very profitable when sold on a local market, when freshly picked and before they have been jostled for many miles and handled by several middlemen.

Crops like pumpkins and mangels are fine for dairy or poultry feed during the winter and the farmer with cows and hens can often grow these crops in the orchard and take the returns from the land in milk and eggs. Possibly there is a danger of injuring fruit trees if the practice of intercropping is continued too long. The same danger exists when the farmer plants peach trees as fillers in an apple orchard. When the peach trees are still bearing, the apple trees reach a stage where they need the room and if the owner needs the income from the peaches, they may be left too long and severely injure the growth and future productive ability of the apple trees. During the first five years of a tree's growth, intensive tillage is necessary to build a strong frame and this tillage is expensive unless some of it is used to raise other crops at the same time it is helping the growth of the trees. At this time the crops which can be hoed help the farmer to obtain an immediate return for his work.

After trees are five years old, the

QUARANTINING INSECT PESTS.

FLORISTS and others who are complaining of the quarantine which the Department of Agriculture has applied to imported plants in order to avoid adding new insect pests to those that already have cost the country millions every year should remember that in this instance the government is acting for the best interests of all. While the exclusion of roots and bulbs and plants from suspected regions may seem to work a hardship, it is well known that unless these importations can be absolutely sterilized so that all the insect pests that they may harbor are killed they are a distinct menace to the plant life of the country. Any foreign insect, large and small, whether it be a moth or a butterfly, etc., when carried to a new habitat is apt to change its character. Very often it increases its range of activity, as in the case of the potato bug, the so-called "Colorado beetle," and by no means stick to the wild plant or the garden species that brought it in. Moreover, the ravages of imported diseases and insects are more or less unchecked, since the foreign species is unattacked by its natural enemies, which are left behind in its old habitat. The pests that prey on pests have to be imported, which is a doubtful and dangerous remedy, or new checks and germicides must be discovered. The losses due to imported pests have reached colossal amounts in the destruction of fruit and plant life generally, the gypsy moth and the chestnut blight leaving wildernesses in their trail, while the conquest of the whole United States by the San Jose scale and the potato bug are classical examples. Then there is the great cost involved in fighting the pests. The Department of Agriculture should therefore be encouraged in keeping out pestiferous insects even if certain plants and flowers may be denied our gardens for a certain number of years.



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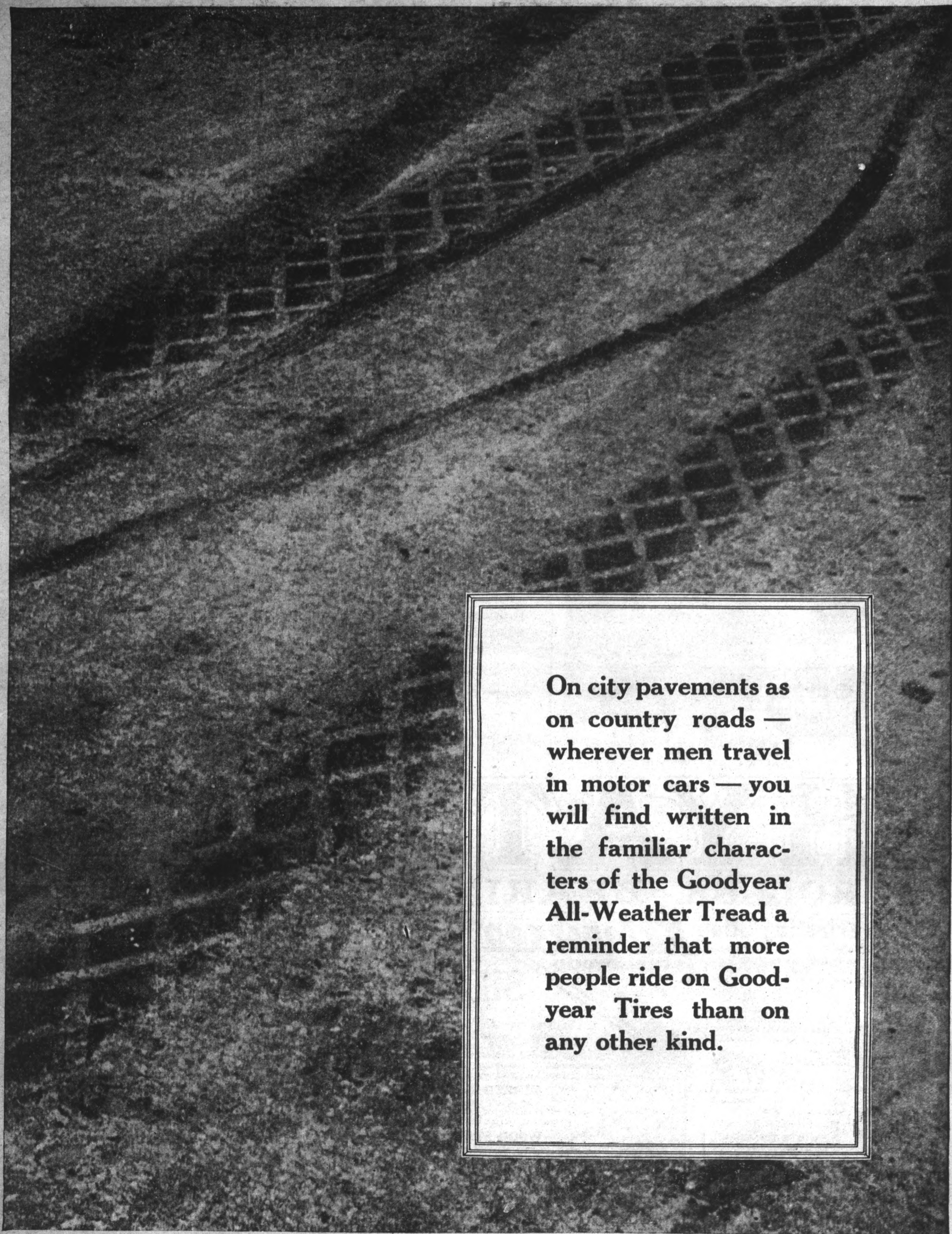
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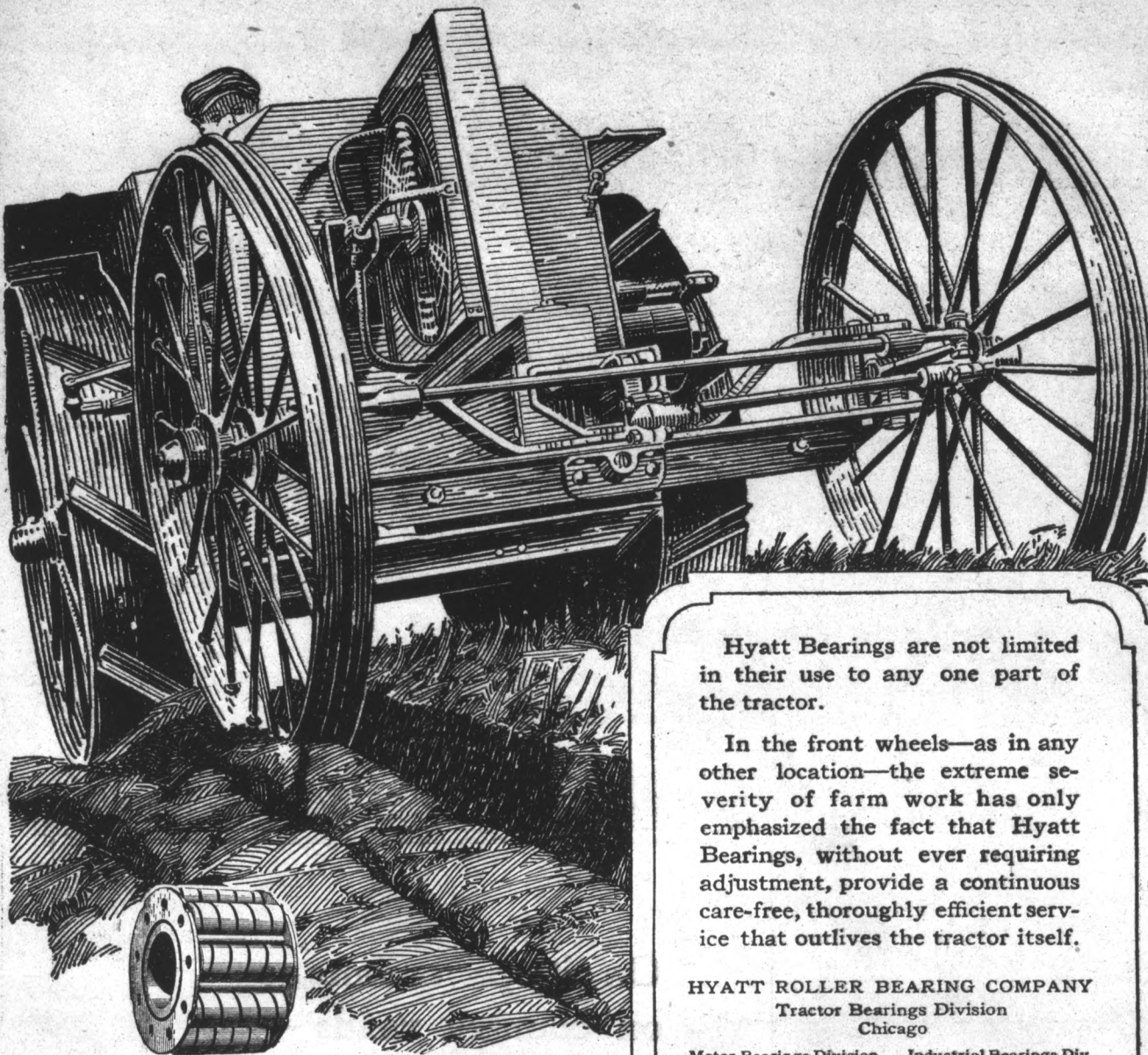


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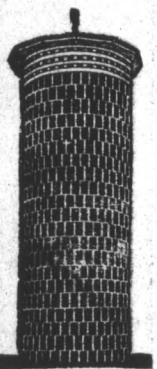
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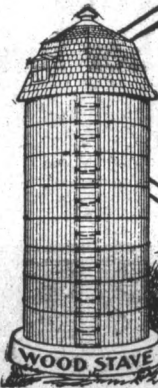
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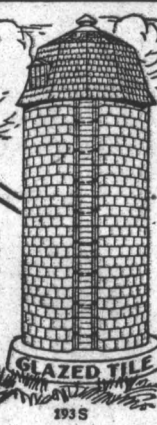
are built to meet the exacting farmer's needs. They excel in design, material and workmanship—combining every desirable feature a silo should have and embodying the knowledge and skill acquired thru 28 years experience in silo construction. All Kalamazoo Silos have the famous Kalamazoo Galvanized Steel Door Frames and Continuous Doors.

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Made from the nutritious hearts of corn kernels

Write to H. CRYSTAL, Selling Representative, 909 Ford Building, Detroit, for sample, literature and particulars. Who is your dealer?

Service Department RYE AND VETCH SILAGE.

I have about five acres of rye and vetch which I sowed for hay and under the weather conditions could not cure it, so have cut it in full bloom, and have put it in silo. It is very heavy. We put it in before it became wilted. Now, could this ensilage be kept for winter use, or should it be fed at once, and is it as good as corn and alfalfa ensilage?

Allegan Co.

F. A. S.

There is no reason why rye and vetch silage will not keep for winter feeding if it is put in the silo in proper condition. Possibly there was juice enough in these plants to make them pack readily and exclude the air, but I would prefer to have added some moisture besides to be sure. Of course I could not tell definitely unless I could see the condition of the crop at the time it was ensiled. Was there moisture enough so that when it settled some of the juice seeped through the silo, that is, what you have got to have is sufficient amount of moisture and that is practically all there is to it. If this ensilage will keep in good condition for several weeks it will keep for several months. With these kind of plants for silage there is apt to be considerable loss on top where it is left exposed, because it will not settle down as compact as green corn because it hasn't the weight in proportion to the bulk, but if great pains are taken in tramping on top and then if it is to be left for a considerable length of time before feeding the top of it should be thoroughly wet down, and take pains about wetting it around the sides. Let the water run down if possible between the silo walls and the ensilage.

C. C. L.

CALF MEAL.

Can you give me a recipe for making a good calf meal to raise calves without milk? The advertised meals are from \$150 to \$175 per ton, which seems unreasonable.

Montcalm Co.

D. C. E.

The Wisconsin Experiment Station made some quite exhaustive experiments in raising young calves without milk. They found they got the best results when a mixture of various grains and food products were combined. Mix corn meal, ground oats, ground barley, ground wheat, wheat bran and middlings, oil meal—do not use cottonseed meal—and any other food stuffs which you can get, all thoroughly together, and this combination seems to give better results than any other food.

You must bear in mind, however, that there is no substitute for milk for young calves. The calf should have the first milk of its dam for several days at least, then this whole milk can be gradually lessened and skim-milk used as a substitute, but the calf ought to have some milk in its ration until it is old enough to eat some clover hay.

Professor McCollum has proved in his nutrition experiments that the life-giving vitamins so essential to the development of normal animals are found only in the butter-fat of milk and the green leaves of plants. Now, the calf should have some milk until it is old enough to eat the green leaves of plants, then the milk can be gradually taken away and a combination of these grain foods can be entirely substituted with, of course, all the good hay the calf will eat.

A young calf can be successfully raised without milk when very young if one will make hay tea by boiling clover hay just as our pioneer forefathers did and mixing grain with this hay tea. In this you have the nearest that can be obtained as a substitute for milk. In this hay tea you have the extract of these same vitamins we have in butter-fat, which are absolutely necessary for normal development.

W. C. C. L.

THE BUREAU OF MARKETS.

(Continued from page 3).

more expeditious handling of stock, the furnishing of a better quality of feed and a closer check on weights of feed. Dishonest and elusive practices on the part of speculators, and in some cases, of commission men have been uncovered and dealt with.

In connection with the supervision service, and operated as part of it, the bureau on June 1, 1918, took over all telegraphic live stock market reports emanating from the Union Stockyards at Chicago. This service is used by the telegraph companies, press associations, Board of Trade and other news distributing agencies, besides being transmitted over the bureau's own transcontinental leased wire system. The supervisory authority conferred upon the bureau by the President's proclamation, also has made possible more complete, exact and useful daily telegraphic meat trade and live stock loading reports. This information has an important effect in making market manipulation more difficult and placing the selling and buying sides of the trade more nearly on an equal footing.

Reference has been made thus far mainly to certain activities that were created or enlarged by reason of war conditions. Our regular duties are many and can be referred to only in the briefest possible way. We have helped in bringing about improved methods of handling and marketing cotton, in the establishment of public markets, both municipally and privately conducted, in the establishment of cooperative organization of farmers for the purpose of picking, packing and marketing their crops, in the preparation and assistance in bringing in use of grades and standards for grain, cotton, potatoes and other products, also for the standardization of warehouse construction and operation, and for the standardization of containers. We have collected and made available information on many subjects and assisted in the preparation of accomplished and pending legislation relating to rural credit associations, farmers' insurance, rural marketing organizations, state marketing laws, laws for the standardization of grades and containers and on many other subjects.

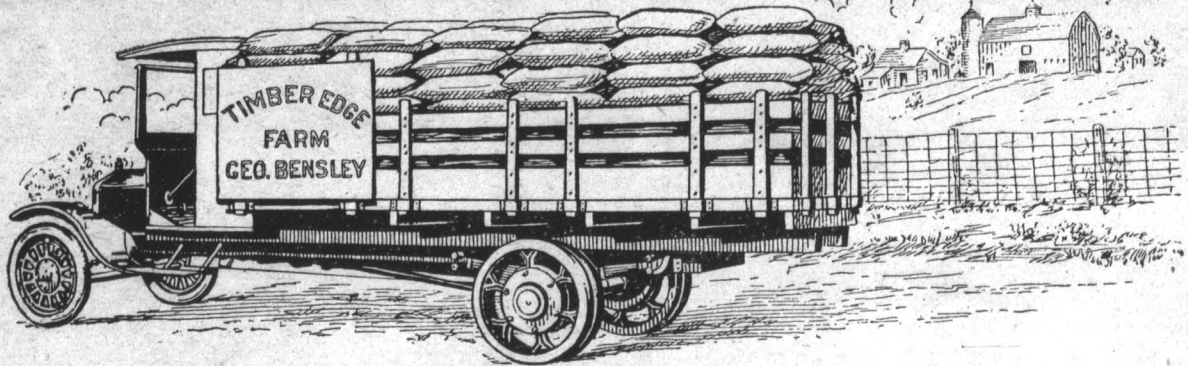
Uniform accounting methods and business practices have been elaborated for grain elevators, creameries, marketing and shipping associations and other farm organizations. Our uniform accounting system is in use in more than one thousand country grain elevators. Our regulatory activities are indeed numerous and include the enforcement of the United States cotton futures act, the grain standards act, United States warehouse act, the food products inspection law, and the standard container law, all of which have been prepared and enacted for the purpose of making the nation more efficient in the marketing and distribution of agricultural products.

ORCHARD PAYS WELL.

A FIFTEEN-ACRE Michigan peach orchard, owned by Messrs J. K. Barden & Son, of Allegan county, has returned a net profit of nearly a thousand dollars a year during the first twelve seasons. The total profit for the twelve-year period is \$11,263.05.

F. M. Barden, one of the owners, kept all the records on the orchard and included every item of expense from the initial cost of the young trees to the marketing of the last crop. Even the labor put in by the owners was charged up at the prevailing rate. Total expenses for the twelve years are \$7,831.37. This deducted from the total receipts of \$19,094.42 gives the net profit shown above. The average yearly net profit per acre is \$62.57.

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CHASSIS Will haul anything from 500 lbs. **CHASSIS**
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Motor Transmission—Ford Power-Plant Complete.

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Springs—Extra heavy side springs, 52" long, 14 leaves 2 1/4" wide, special heat treated alloy steel. Dust proof oilers at every bearing.

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A year round truck, capable of handling three tons, yet it operates at one-third less per ton mile than the Ford Ton Truck.

The lowest priced 2-ton truck in the world!

The famous Ford truck power-plant insures low upkeep and economical service anywhere.

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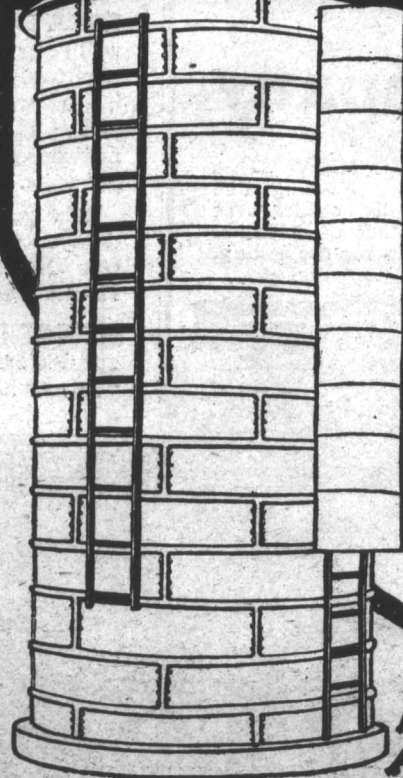
We know of no other truck of any capacity so well adapted to farm use. A 2-ton truck is required, a 1-ton will not do the work of two horses, nor will it mount a full sized wagon bed. You get Ford Service on the Olson, it uses the famous Ford Truck Power Plant. You know all about it, any man or boy can operate it.

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Thousands of farmers, however, have turned their share of this loss into gain. They are now getting three, five, ten—yes, even as high as fifteen bushels

more to the acre. And they are doing this without extra labor or extra cost—with the manure spreader that pays for itself twice over in its first year's use.

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"Spreader Specialists"

A copy of the latest NEW IDEA catalog, together with "Feeding The Farm," the best handy booklet ever published on the subject of scientific fertilization—are yours for the asking. Write today.



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The Original Wide Spreading Spreader

THERE is a vital need on every farm for this better spreader. It's the spreader that everyone knows—that loads high, hauls easy, shreds manure fine and spreads it a full seven feet wide.

The NEW IDEA is built for long, hard service. It can't be compared with any other spreader on the market. Examine one carefully and you will see why. You notice the heavy steel construction, the direct chain drive without gears or clutches, the big steel distributor paddles, the lever at seat regulating spread of 3, 6, 9, 12, or 15 loads to the acre, shredding cylinders, chain conveyors, etc.

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See your NEW IDEA dealer without delay. Give him the opportunity to point out the many ways in which the NEW IDEA leads all other spreaders made.

IN THE WEST—this company's "NISCO" spreaders are marketed under the trade-name of **NISCO**

WORLD EVENTS IN PICTURES



Queen Marie of Roumania, and King Albert of the Belgians photographed together in Paris.



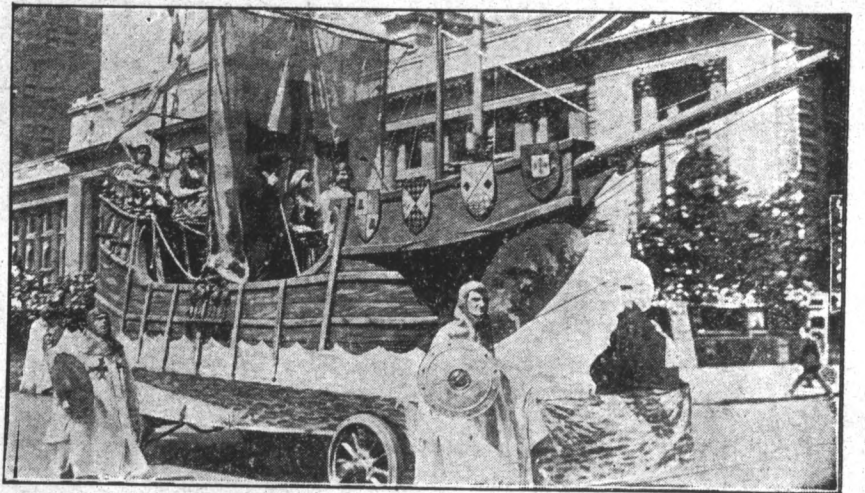
Mme. Sarah Bernhardt pausing beside her bust of Edmond Rostand, the French dramatist.



Beautiful Italian Princess di Prombino, who will tour America after conclusion of peace.



This is the first "home" built amid the ruins of Lens, once one of the most prosperous French coal district cities.



Picture of a Portuguese float in a recent New York parade. The ship represents an old Portuguese battleship, and is accompanied by warriors in armor.



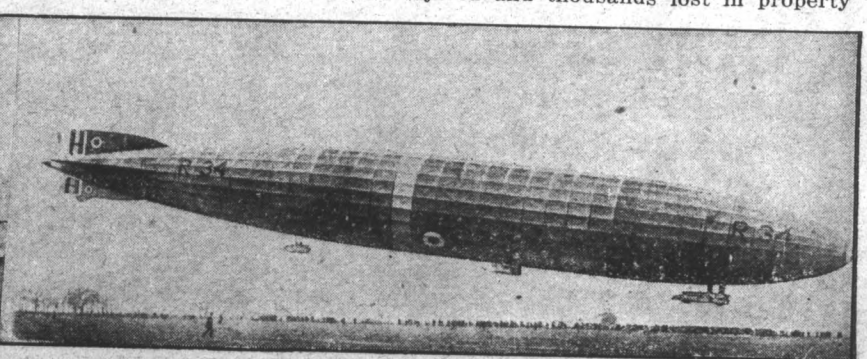
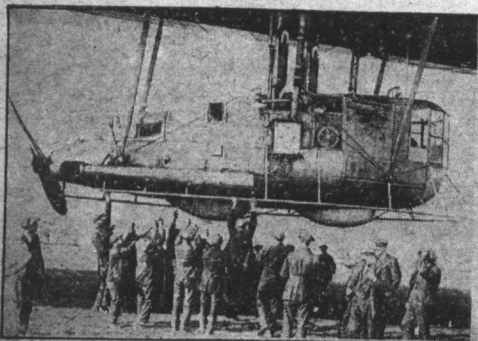
Palace of the King at Brussels, Belgium, where President Wilson was entertained, and below a late picture of our President.



"Dare Devil" Reynolds juggling three balls while he balances himself on the top of a twenty-five story building.

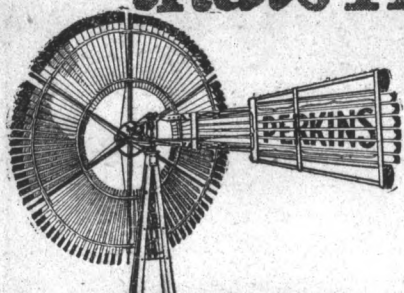


How Madrid, Spain, police handled the Bolsheviks during the recent uprising. Many people were injured and thousands lost in property.



Giant English Rigid Dirigible "R-34" which is expected to attempt a non-stop flight from England to New York in a few days. At the left is a "close-up" view of one of the three gondolas which are connected by a passageway inside the bag. In the center are Lieut. Colonel Lucas and Major Fulder, who are here preparing for the arrival of the R-34.

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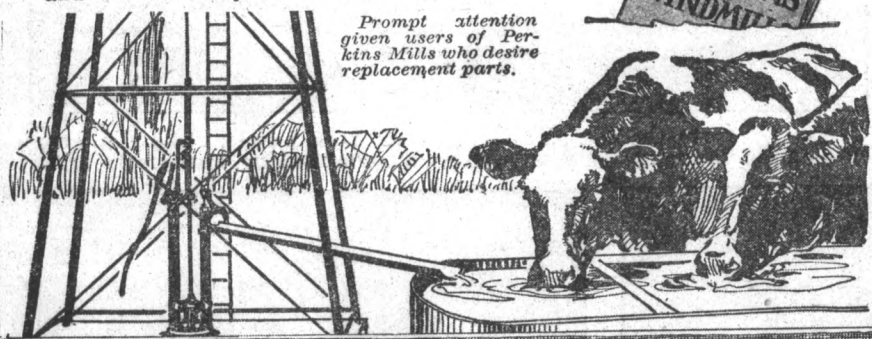
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THE MICHIGAN FARMER DETROIT

The Fire Warden

By Robert W. Chambers

(Continued from last week).
"Once," she said, "I knew a boy—like you—when I wore a muslin frock, and I have never forgotten him. He was extremely silly."

"Do you remember only the silly people?"

"I can't forget them; I try."

"Please don't try any more," he said.

She looked at him, still smiling. She gazed off through the forest, where the men were going home, shovels shouldered, the blades of axe and spade blood-red in the sunset light.

How long they stood there she scarcely reckoned, until a clear primrose light crept in among the trees, and the evening mist rose from an unseen pond, floating through the dimmed avenues of pines.

"Good-night," she said, gathered bridle, hesitated, then held out her ungloved hand.

Galloping homeward, the quick pressure of his hand still burning her palm she swept along in a maze of disordered thought. And being by circumstances, though not by inclination, an orderly young woman, she attempted a mental reorganization. This she completed as she wheeled her mare into the main forest road; and, her happy, disordered thoughts rearranged with a layer of cold logic to quiet them, reaction came swiftly; her cheeks burned when she remembered her own attitude of half-accepted intimacy with this stranger. How did he regard her? How cheaply did he already hold her—this young man idling here in the forest for his own pleasure?

But she had something more important on hand than the pleasures of remorseful cogitation as she rode up to the store and drew bridle, where in their shirtsleeves the prominent citizens were gathered. She began to speak immediately. She did not mince matters; she enumerated them by name, dwelt coldly upon the law governing arson, and told them exactly where they stood.

She was, by courtesy of long residence, one of them. She taught their children, she gave them pills and powders, she had stood by them even when they had the law against them—stood by them loyally and in the very presence of Grier, fencing with him at every move, combating his brutality with deadly intelligence.

They collapsed under her superior knowledge; they trusted her, fawned on her, whined when she rebuked them and carried themselves more decently for a day or two when she dropped a rare word of commendation. They respected her in spite of the latent ruffianly instinct which sneers at women; they feared her as a parish fears its priest; they loved her as they loved one another—which was rather toleration than affection; the toleration of half-starved bob-cats.

And now the school-marm had turned on them—turned on them with undisguised contempt. Never before had she betrayed contempt for them. She spoke of cowardice, too. That bewildered them. Nobody had ever suggested that.

She spoke of the shame of jail; they had heretofore been rather proud of it—all this seated here in the saddle, the light from the store lamp shining full in her face; and they huddled there on the veranda, gaping at her, stupefied.

Then she suddenly spoke of Burleson, praising him, endowing him with every quality the nobility of her own mind could compass. She extolled his patience under provocation, bidding them to match it with equal patience. She bade them be men in the face of this Burleson, who was a man; to display a dignity to compare with his; to meet him squarely, to deal fairly, to

make their protests to his face and not whisper crime behind his back.

And that was all; she swung her mare off into the darkness; they listened to the far gallop, uttering never a word. But when the last distant hoof-stroke had ceased, Mr. Burleson's life and forests were safe in the country. How safe his game was they themselves did not exactly know.

That night Burleson walked into the store upon the commonplace errand of buying a jack-knife. It was well that he did not send a groom; better still when he explained, "one of the old-fashioned kind—the kind I used as a school-boy."

"To whittle willow whistles," suggested old man Santry. His voice was harsh; it was an effort for him to speak.

"That's the kind," said Burleson, picking out a one-blade.

Santry was coughing; presently Burleson looked around.

"Find swallowing hard?" he asked. "Swallerin' ain't easy. I ketched cold."

"Let's see," observed Burleson, strolling up to him and deliberately opening the old man's jaws, not only to Santry's astonishment, but to the stupefaction of the community around the unlighted stove.

"Bring a lamp over here," said the young man.

Somebody brought it.

"Tonsillitis," said Burleson briefly. "I'll send you something tonight."

"Be you a doctor?" demanded Santry, hoarsely.

"Was one. I'll fix you up. Go home; and don't kiss your little girl. I'll drop in after breakfast."

Two things were respected in Fox Cross-roads—death and a doctor—neither of which the citizens understood.

But old man Santry, struggling obstinately with his awe of things medical, rasped out, "I ain't goin' to pay no doctor's bill fur a cold."

"Nobody pays me any more," said Burleson, laughing. "I only doctor people to keep my hand in. Go home, Santry; you're sick."

Mr. Santry went, pausing at the door to survey the gathering with vacant astonishment.

Burleson paid for the knife, bought a dozen stamps, tasted the cheese and ordered a whole one, selected three or four barrels of apples, and turned on his heel with a curt goodnight.

"Say!" broke out old man Storm as he reached the door; "you wasn't plannin' to hev the law on Abe, was you?"

"About that grass fire?" inquired Burleson, wheeling in his tracks. "Oh, no; Abe lost his temper and his belt. Any man's liable to lose both. By-the-way—he came back slowly, buttoning his gloves—'about this question of the game—it has occurred to me that it can be adjusted very simply. How many men in this town are hunters?'"

Nobody answered at first, inherent suspicion making them cow. However, it finally appeared that in a community of twenty families there were some four of nature's noblemen who "admired to go gunnin' with a smell-dog."

"Four," repeated Burleson. "Now just see how simple it is. The law allows thirty woodcock, thirty partridges and two deer to every hunter. That makes eight deer and two hundred and forty birds out of the preserve, which is very little—if you shoot straight enough to get your limit," he laughed. "But it being a private preserve, you'll do your shooting on Saturdays, and check off your bag at the gate of the lodge—so that you won't make any mistakes in going over the limit." He laughed again, and pointed at a lean hound lying under the counter.

"Hounds are barred; only 'smell-dogs' admitted," he said. "And"—he became quietly serious—"I count on each one of you four men to aid my patrol in keeping the game-laws and the fire laws and every forest law on the statutes. And I count on you to take out enough fox and mink pelts to pay me for my game—and you yourselves for your labor; for though it is my game by the law of the land, what is mine is no source of pleasure to me unless I share it. Let us work together to keep the streams and coverts and forests well stocked. Good-night."

About eleven o'clock that evening Abe Storm slunk into the store, and the community rose and fell on him and administered the most terrific beating that a husky young man ever emerged from alive.

CHAPTER III.

IN October the maple leaves fell, the white birches showered the hill-sides with crumpled gold, the ruffed grouse put on its downy stockings and the great hare's flanks became patched with white. Cold was surely coming; somewhere behind the blue north the Great White Winter stirred in its slumber.

As yet, however, the oaks and beeches still wore their liveries of rustling amber, the short grass on hillside pastures was intensely green, flocks of thistle-birds disguised in demure russet passed in wavering flight from thicket to thicket, and over all a hot sun blazed in a sky of sapphire, linking summer and autumn together in the magnificence of a perfect afternoon.

Miss Elliott, riding beside Burleson had fallen more silent than usual. She no longer wore her sombrero and boy's clothes; hat, habit, collar, scarf—ay, the tiny polished spur on her polished boot—were eloquent of Fifth Avenue; and she rode a side-saddle made by Harrook.

"Alas! alas!" said Burleson; "where is the rose of yesterday?"

"If you continue criticising my habit—" she began, impatiently.

"No—not for a minute!" he cried. "I didn't mention your habit or your stock—"

"You are always bewailing that soiled sombrero and those unspeakable breeches—"

"I never said a word—"

"You did. You said, 'Where is the rose of yesterday?'"

"I meant the wild rose. You are a cultivated rose now, you know—"

She turned her face at an angle which left him nothing to look at but one small, close-set ear.

"May I see a little more of your face by-and-by?" he asked.

"Don't be silly, Mr. Burleson."

"If I'm not, I'm afraid you'll forget me."

They rode on in silence for a little while; he removed his cap and stuffed it into his pocket.

"It's good for my hair," he commented, aloud; "I'm not married, you see, and it behooves a man to keep what hair he has until he's married."

As she said nothing, he went on, reflectively: "Eminent authorities have computed that a man with lots of hair on his head stands thirty and nineteen-hundredths better chance with a girl than a man who has but a scanty crop. A man with curly hair has eighty-seven chances in a hundred, a man with wavy hair has seventy-nine, a man—"

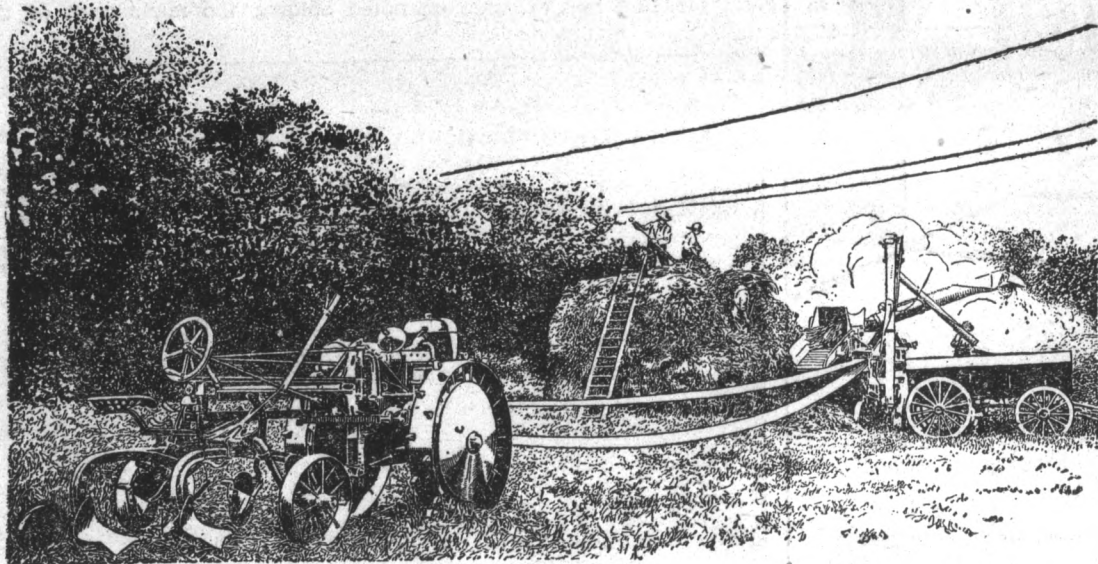
"Mr. Burleson," she said exasperated, "I am utterly at a loss to understand what it is in you that I find attractive enough to endure you."

"Seventy-nine," he ventured—"my hair is wavy—"

(Concluded next week).



MOLINE UNIVERSAL TRACTOR



Saves 1½ Men and 5 Horses Per Farm

Through the most comprehensive tractor survey yet attempted, we have found by figures from Moline-Universal Tractor owners—not by guess work—that the Moline-Universal actually saves an average of one and one-third men and five horses per farm.

Over 200 farmers in 37 states from Maine to California and North Dakota to Texas were closely questioned, and their farms ranged in size from 40 to 800 acres. Every one of the Moline-Universal owners whose data forms a basis for these conclusions was selected at random from our list of owners, so that these results are average—not exceptional.

That the Moline is really a Universal Tractor and fits any size farm is proven by the fact that the farms reporting ranged in size as follows: 8%, 100 acres and under; 37%, 100 acres to 200 acres; 21%, from 200 to 300 acres; 13%, from 300 to 400 acres, and 19% above 400 acres. In their report 76% agreed that they could use the Moline-Universal wherever they used horses, and 83% said they could

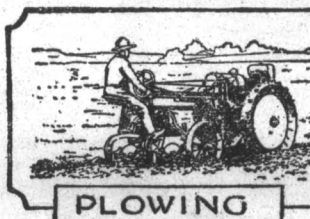
do better work—and thereby make more money.

Owners are positive in their statement that the Moline-Universal is a good investment, and 73% of the Moline owners state that they wouldn't farm again without the Moline-Universal Tractor, while the rest say that they would dislike to go back to horses.

In reply to the question, "Can you operate and maintain the Moline-Universal Tractor for what it would cost you to keep three or four horses?" Ninety-two per cent replied "yes." Many reported they could do so for less.

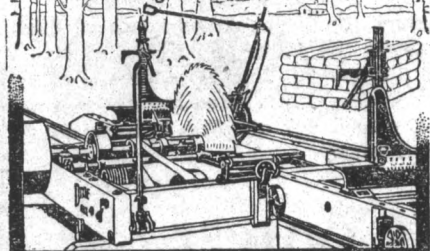
Space does not permit a complete report, but surely these figures must convince farmers and business men who believe in facts instead of theory that the Moline System of Power Farming is the most economical and efficient, and this is the reason why thousands of Moline Power Farmers are making more money with less hard work. Complete report of this tractor investigation will be gladly furnished on request.

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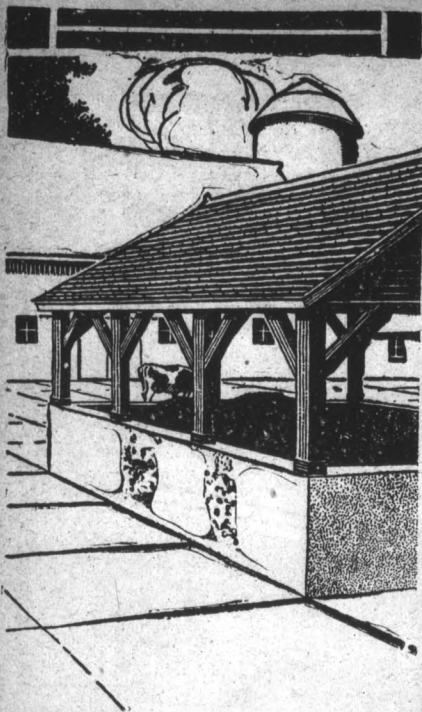
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Concrete for Permanence

The Star Spangled Banner

By J. H. Brown

We have always had great interest and burial place of Francis Scott Keys in this flag of ours, and have one that who wrote the "Star Spangled Banner." Here, again, is shown our old original design Betsy Ross is credited with making in her home in Philadelphia.

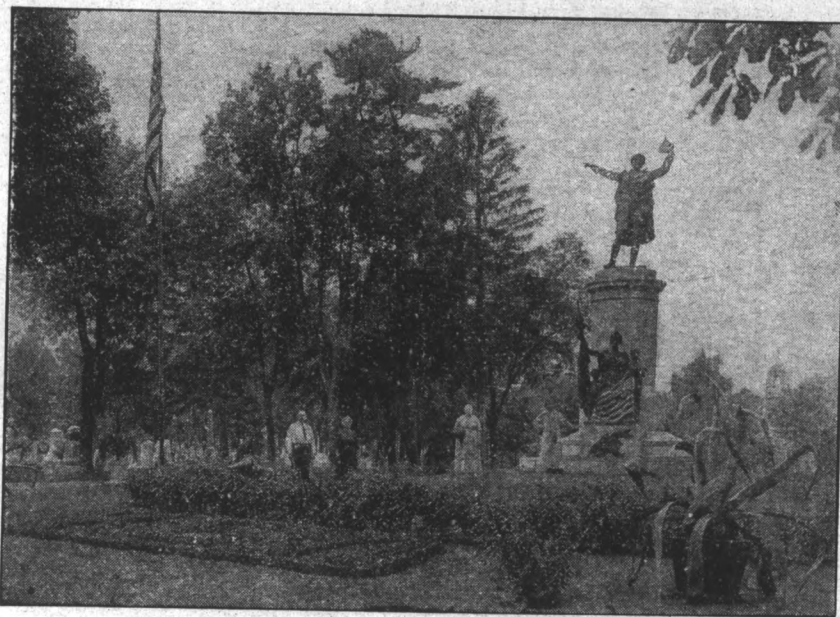
This old flag we have carried with us on our long touring trips and took great pleasure in placing it on noted holding the manuscript of the three



historical spots. We carried it into every room in the old Betsy Ross house at 239 Arch street, Philadelphia. The picture shows Mrs. Brown holding our old flag up in the doorway. It contained thirteen stars in a circle. Floating from the dormer window of the old Betsy Ross house is the flag kept out every day in fair weather.

This old house is solidly penned in between two business blocks, and a national association is trying to raise

stanzas of The Star Spangled Banner in his left hand, while with his right hand he is pointing to the flag. It is directly back of the main entrance into this noted cemetery that this fine monument and burial lot of Keys stands. It is a beautiful place and a shrine for hundreds of thousands who come from all parts of the world every year to visit the grave of the author of the Star Spangled Banner.



money by popular subscription to buy the land around this old place and convert it into a little park.

The other view is one we took two years ago in Mt. Olivet cemetery, Frederick, Maryland. It is the monument

Some distance further south of this grave is the grave of Barbara Freitchie, heroine of John Greenleaf Whittier's poem. We visited her grave also and placed our old flag thereon for a few minutes.

Our Prize Contest

DEAR BOYS AND GIRLS:

The right kind of boys and girls usually succeed in making "The Jobs they Would Like" really and truly their jobs. The one big thing necessary is to be well prepared so that when we get the job we want we can make a big success of it.

Not a small part of our preparation will be to build up strong healthy bodies and minds, and in learning to enjoy life; both the work time and the play time; so that when the big job really does come, we will be able to do it so well that it will give us the

keen pleasure we anticipate.

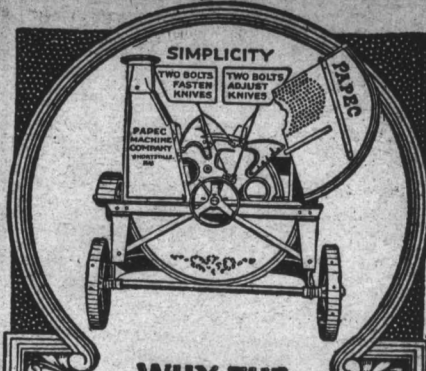
Sincerely yours,
Editor Boys' and Girls' Dept.

FIRST PRIZE.

The Job I Would Like.

I would like best to be a farmer because I love the country, where the air is fresh and pure, the sun shines brightest and the birds sing sweetest. I would make my farm such a model of neatness and profit that people would admire it and friends would ask advice.

I would tile, fertilize and cultivate



WHY THE PAPEC KNIVES SHEAR CLEAN

FOR SATISFACTORY
ensilage cutting, the knives must shear *keen and clean*—and do so *every* time around, and year after year. The knives and shear plate *must* be in close, perfect adjustment.

The adjustment of a knife on a Papec Ensilage Cutter is simply a matter of turning two bolts. And the shear plate is double-nut bolted to the *solid one-piece semi-steel frame*—it *never* gets out of alignment. In fact, because of the solid one-piece semi-steel frame, with main-frame bearings *cast in, every* part of the Papec cutting mechanism *stays* in alignment. The solid frame *never* twists—it's *always true*.

Both the knives and the shear plate on a Papec are easily removed and replaced *without disturbing any other parts*.

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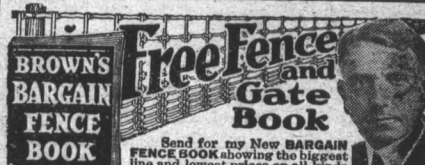
Sold Direct \$20.50 JUST the THING for SHOCK or SILO CUTTING



Works in any kind of soil. Cuts stalks, does not pull like other cutters. **Absolutely no danger.** Cuts Four to Seven Acres a Day with 1 man and 1 horse. Here is what one farmer says:

Dear Sir: In regard to your Corn Harvester I must say, we are perfectly satisfied with the work it did. It cut just the same and just as fast as four men would cut it by hand. I am well pleased with it. With best wishes, I remain, Yours truly, Louis Johanson, Benton Harbor, Mich.

SOLD DIRECT TO THE FARMER. Send for booklet and circulars telling all about this labor-saving machine; also testimonials of many users. **LOVE MANUFACTURING COMPANY** Dept. 30 Lincoln, Ill.



Send for my New **BARGAIN FENCE BOOK** showing the biggest line and lowest prices on all kinds of wire fencing. My latest direct-from-factory prices save you a lot of money. 150 STYLES—FREIGHT PREPAID. We use heavy **ACID TEST GALVANIZED** wire—outlasts all others. Book and sample to test—FREE by return mail. **THE BROWN FENCE & WIRE CO., Dept. 149, CLEVELAND, O.**

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my farm to the very best of my ability. I would use the very best of seeds and rotate my crops so as to obtain the best results, as my course in agriculture taught me.

I would try to have enough machinery, including a tractor, a truck and an automobile, to make farm life easy. This would also enable me to plant my crops at the right season, also to harvest them at the right time.

I would have a wonderful garden, which would supply me with a host of vegetables and small fruits from early spring to late fall.

My orchard should contain apple, plum, pear and cherry trees.

My barn should be large enough to shelter all my hay, grain, stock, and a team or two. There should be a silo nearby, also a granary, henhouse, tool shed and garage.

My house would be a modern steam-heated and electric-lighted home, surrounded by beautiful lawns and shade trees.—John O. Roberts, Breckenridge, Michigan. Age fourteen years.

HONORABLE MENTION.

The Job I Would Like.

I would like to be a farmerette. Because I like to have a large garden and can fruits and vegetables. I have a large garden of my own this year, too. I have in it cucumbers, beets, cabbage and tomatoes. And I like to help my father. I help him sometimes to drag and cultivate. And I like to feed the cows, horses, calves and chickens, and like to watch them eat.

I like to go in the woods and pick berries and pick flowers, and like to watch the squirrels climb the trees.

I like to live in the country better than the city, because it is healthier in the country than in the city, and you can do anything you want on your farm because there is no one to boss you and no rent to pay, so no one to bother you. Don't you think so?—Alice Sheretsky, Ionia, Michigan. Age twelve years.

HONORABLE MENTION.

The Job I Would Like.

The job I would like is to be a writer, because I read many good stories and poems written by other people, so I would like to write some for other people to read.

I like to make poetry but it is rather hard for me. I can write stories easily, as we had to write them in school.

I have a great aunt who is a writer and I like to read her poems and stories that are printed in a paper we take and so that makes me all the more anxious to write.

If I ever wrote I would like to have a large room with many windows from where I could get good views and plenty of sunshine.—Gertrude Layton, Howell, Michigan. Age thirteen years.

Our Prize Contest

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

Subject of letter to be mailed by July 14.

"The last day of school."

Subject of letter to be mailed by July 21:

"Fishing and swimming."

Subject of letter to be mailed by July 28:

"Our garden."

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

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



There are six distinctive features in the making of Empire Tires

Two of these features are exclusive. Four of them are used by other makers of good tires. But there is no manufacturer except Empire who combines *all* of these features in the same tire.

I—Standardization Tests for Uniform Tensile Strength

Every lot of crude rubber that comes into the Empire factory is tested for tensile strength, because the best of rubber varies. Each lot is then graded according to tensile strength. In making the compound, batches of varying tensile strengths are combined to obtain an *average tensile strength*. Three more standardization tests are applied to the stock at three different stages of manufacture. This assures absolute uniformity for every tire.

II—Pure Rubber and More of It

All tires are made of "compounds"—a mixture of rubber and other materials. But Empire Tires contain a higher percentage of pure rubber and a lower percentage of the heavy compounding materials. There is no cheap filler in the tread. The rubber between the plies of fabric is not a hard compound, but pure, cushion rubber—much thicker than in the ordinary tire. This makes a carcass

which is thicker and stronger than the average, as well as lighter in weight.

III—Greater Air Capacity

Empire Tires are made larger than the average, by inside measurement. This increases the air capacity. And it is air capacity that gives higher mileage as well as greater comfort in riding.

IV—Air-Cure

Air curing is used on all Empire Tires except the smaller sizes, which can be cured to better advantage by the full mold process. Tests prove that large-size tires cured on air by the Empire method yield much greater mileage than tires of the same construction cured by other methods.

V—Equal Tension Fabric

The patented Empire process for handling fabric under "equal tension" eliminates the unevenness and looseness which results in weak spots and blowouts. Fifty-three per cent of all blowouts are due to unequal tension in the fabric, which the Empire process eliminates.

VI—Tapering Tread

The Empire tread has a wide bearing for the anti-skid projections and tapers off down the side walls in such a way that there are never any fabric breaks at the point of flexing when the car is in motion. Note that the tread is also ribbed, preventing side-slipping.

But no amount of description of the distinctive features of Empire manufacture will mean as much to you as one good trial of an Empire on your own car. Make a test by putting an Empire on your "southeast" wheel, the hardest service you can give any tire. Then see if it does not justify the care with which it is manufactured, and the faith we have in it.

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and lay away an abundant supply of wholesome fruits and vegetables for winter, besides earning some ready cash selling to others. Size, 2 ft. x 4 ft. Price \$4.50. Circular free. The Ideal Pump Co., Wilmington, Ohio

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\$38 Buys the New Butterfly Jr. No. 2½. Light running, easy cleaning, close skimming, durable. **NEW BUTTERFLY** Separators are guaranteed a life-time against defects in material and workmanship. Made also in four larger sizes all sold on **30 Days' FREE TRIAL** and on a plan whereby they cost their own cost and more by what they save. Postal brings Free Catalog Folder. Buy from the manufacturer and save money. (9) Albaugh-Dover Co. 2105 Marshall St. Chicago

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Michigan Farmer\$1.00
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Breeder's Gazette, wk..... 1.50
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Green's Fruit Grower, mo..... .50
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Woman's Interests

Women and the Forward Movement

IN an article in the Michigan Farmer Deborah proposes that everyone get up tomorrow morning and begin to live the Golden Rule as a remedy for the present seething state of world affairs. Very good! With this matter of making over the old world, we women must have a deal to do. It is indeed well to advocate that the Golden Rule be immediately brought into use. It was never more sadly needed. But we must match our resolution to act upon it by an understanding of where to apply it to the affairs that concern us most.

In other words, we have come to the place where we must think about a great many subjects we have heretofore given little heed to; and we must prepare to act upon many matters with which we have never before concerned ourselves. In all these matters the Golden Rule may best be woman's guiding star; and, since her chief characteristic is a deep affection, this bright rule of love, well applied, will set aright her understanding of her new duties. For love is truly the only constructive force.

In this connection we should be turning inquiring eyes toward the new movement now noticeable among the people on American farms. It is an agitation, an uneasiness akin to that discernible in every other field of labor; for by no means is this unrest of farmers confined to North Dakota or the northwest. True, out there is the largest rural laboratory in which some of the rankest economic abuses connected with crops are being diagnosed and cauterized; but, in every state, farm people are awakening to conditions which cry for remedy. In Michigan we are not without reasons for seeking distinct changes in some matters that affect farmers.

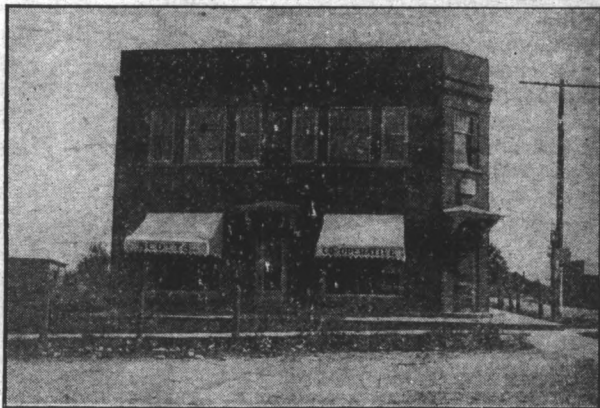
Why, in Michigan where brooks and rivers run hither and thither in prodigal waste of power, should not every remote home be lighted by electricity and its water pumped, its wood sawed, feed ground, butter churned, clothes laundered by this same natural energy? If the actual good of the inmates of such homes is striven for by our legislators, why is not such help available to them, just as the mail is now taken to them?

To some of us women, too, there is a glaring incongruity in adding to our taxes, instead of decreasing them, when the farm home is painted, or a new barn is built, or a fresh field is cleared and tilled. I should like to have every woman, who has served sentence under a farm mortgage, ask a big "Why?" when unlawful interest is charged and objections are raised to making credit easy for the laborer and small farmer.

The second step left to us, in order to cure present economic ills, is to promote cooperation. When women come to study into the principles and far-

reaching effects of Rochdale Cooperation, we shall see a decided surge of people toward organizations founded upon that plan. Women can do more to spread its gospel, when once they start the campaign, than thrice their number in men.

Cooperation is, fundamentally, the people's expression of themselves. It is so much more than merely buying and selling together for the saving of dollars. It is taking over leadership, responsibility, and the practice of business methods one's self. It is democracy in action. It is man-voting, in place of money-voting, as is the case when a member of a corporation has as many votes as he owns shares of stock. Thus in cooperative associations manhood becomes master of money, and is no longer its servant. In cooperation, members may have access to the books of their business; rightly handled, at any moment they may know exactly how the business is run-



Housewives, as Purchasing Agents, Find it an Advantage to Use the Cooperative Store.

ning, what departments are making good and which are falling behind, and thus quickly remedy mistakes.

Money put into cooperation earns a fixed rate and the dividends are upon what is bought and sold. The dividends in cooperation, depend largely upon one's loyalty in patronage. If a man joins a cooperative live stock shipping association or potato exchange, and never sells stock or potatoes, through his association he gets no dividend. If he buys a share in a cooperative store and never trades there, he gets interest on his money invested but no purchase rebates. Thus affection, or loyalty, for one's association is fostered and rewarded. This makes the cooperative association especially the friend of the man or woman of limited means; for, without much to invest, but having to expend most of his or her income, the returns come back from necessary expenditures.

These facts about cooperation appeal to the sensible woman spender, for, woman, not man, is the money spender in ninety per cent of our homes. Particularly, if that woman has lived under the shadow of a farm debt, they appeal to her as a practical way of knowing definitely where she is financially.

Cooperation, like mercy, "is twice blessed," blessing him who buys and him who sells. To illustrate, let us take example that has been made quite widely known this past season through the food cost charts shown at Grange

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cost less; outlast three ordinary roofs. No painting or repairs. Guaranteed rot, fire, rust, lightning proof.

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Installed in one day without tearing up floors and walls.

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meetings and institutes by Mrs. Dora H. Stockman, lecturer of State Grange. Mrs. Stockman showed that, in the month of November, she used upon her family table foods produced upon their farm to the amount of \$12.99. This sum is what she would have received for them, had she sold the foods in Lansing, one mile away; but had her friend, Mrs. B., who lives in Lansing, bought these same foods at a store and had them delivered at her home, the cost to her would have been doubled. Now, suppose that both Mrs. Stockman and Mrs. B. belonged to a cooperative association and the former sold the foods to it, and Mrs. B. bought them of the association. In this case both would have received benefit at time of the distribution of dividends. Mrs. Stockman would have received more than \$12.99 for what she sold, and Mrs. B. would have gotten them for less than double that amount, as in the present instance.

Still another thing that appeals to the common sense of women as soon as they understand it, that cooperation handles goods that people want for use rather than to sell through loud advertising those goods that bring largest profit. Again, another reason why a community should operate its own trading centers, is because money is then kept in the neighborhood. "But," you say, "it is now kept here when we trade with local dealers." This is true, if the people trade at local stores; but it is hard to discover the spot where people do not do much buying through mail orders. And when we trade through mail order houses, the money goes out of the community, profit and all. If you think otherwise, recall, if you can, how much of your local assessment for Liberty or Victory bonds was taken by mail order houses. Their bonds were credited to Chicago, New York or otherwise.

Finally, in cooperation immense sums for "overhead expenses" are eliminated. (Women must learn what "overhead" means, whether applied to producing a bushel of Michigan wheat or to selling a pound of imported figs). Private operation tends to multiply places of trade, thus increasing overhead costs; but cooperation diminishes the number and cuts down running costs. For example, why should any little town need have three or four groceries and as many dry goods stores, two banks perhaps, and a hardware store or two, while one postoffice serves all these very people? Every added store or stock buyer means another family to be supported out of profits that must be made. It is competition that costs and becomes a charge upon public welfare. It is co-operation that saves and builds up the community.

And farm women must lead in much of this sort of thought and its resulting action, for they are close to the bases of supplies and are more closely associated with their men in their work than are any other class of women.

CLEAN COWS AND CLEAN MILKERS.

(Continued from page 1).

healthy attendants in a clean dairy room and put into clean shipping cans and immediately cooled down to forty or fifty degrees and held at that temperature until ready to be shipped. By clean and sanitary milk I mean only such a degree of cleanliness as outlined in this paper, and which does not

OPEN-TOP PAIL

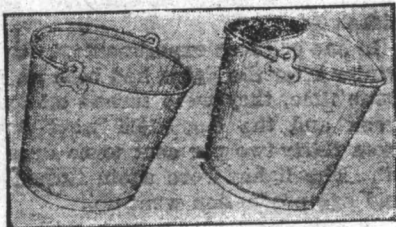
SMALL-TOP PAIL

Relative Quantities of Sediment in Milk Drawn into Open Top and Small-top Pails.

involve expenses that are entirely out of reach of the dairyman's means. Healthy cows and cleanliness will give

milk that is bacteria free. Cold will keep it in this condition. We can not get sanitary milk from cold, dirty milk, or from warm, clean milk. Both factors are essential to success.

Most of the dirt which gets into milk falls into the pail during milking. A large part of this dirt may be kept out by the use of a small top or partially covered pail. In Dr. Charles E. North's famous demonstration in producing clean milk amid ordinary farm surroundings it was shown that the use of covered pails had a greater influence in determining the cleanliness of milk than elaborate equipment. With ordinary clean surroundings and covered pails the dairyman can produce a grade of milk corresponding very closely to that of certified milk, now being produced at high cost on many expensively equipped farms.



Small-top Milking Pail Made from an Ordinary Pail by Addition of Hood.

In producing clean milk it is not more knowledge that we need so much as it is the desire to do decently the things we already know. It is easy for the scientist to tell us how to keep harmful bacteria out of milk, but in our every day work we are doing pretty well if we succeed in keeping out something that is called by a different name.

When You're Tired

and need the invigoration of a well-flavored, full-bodied hot cup, there's nothing superior to

Postum Cereal

Delicious and healthful, it supports and cheers with its refreshing goodness, and it is an economical table drink as well.

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Two sizes, usually sold at 15c and 25c

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USL Service-Stations do more than add water and take hydrometer-readings. All stations have our standard set of rules for checking up each battery-cell and testing the car's electrical system. If anything is wrong USL service men know what it is and where to find it. There is no guess-work. Consequently USL men repair many batteries pronounced worthless by others.

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And USL Service-Stations do more than repair. They guarantee their work on any make of battery for eight months on an adjustment basis. That's the honest way. It gives you what you pay for; you always receive full value.

USL "Dry-Charged"

But if you need a new battery there is a brand new factory-perfect "USL" waiting to fit your car. It comes to the USL Service-Station USL "Dry-Charged." That means it's made ready for you, when you want it. It has not been car-worn or shelf-worn and you will get its full battery-life.

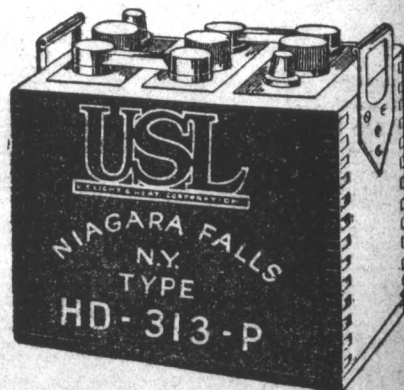
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For Name and Address of Your Nearest USL Service Station write to
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Ring Neck Pheasants

Lay 40 to 50 eggs each per year. Why raise chickens to eat when these are much more profitable and raised as easily? Weigh 3 pounds at six months, and bring \$1 a pound in the market. Set the eggs under chickens—feed and care for the young the way you would chickens. Are economical as they only require one-half as much food. Are very hardy and not subject to disease. Best eating bird in America. Eggs guaranteed from vigorous healthy, unrelated stock.

\$ 6.00 for 15 Eggs
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Genuine Wild Mallard Ducks

Lay 50 to 60 eggs per year. We guarantee our breeding stock to be the best in the country as they are entirely wild trapped Mallards and not the coarse semi-wild strain.

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This is just the time to set these eggs as the birds will mature by early fall.

Send your order in at once with check or money order and we will make immediate shipment.

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EAST HIGH ST., FOSTORIA, OHIO.

400 WHITE LEGHORN Yearling Pullets

These fine S. C. Leghorns with a colony laying record during their first laying season, will make valuable stock for the farmer poultryman on the coming year. They will be sold in lots of 6, 12, 25, 50, and 100—August delivery. Write for description, laying record & price.

Fall Chicks for Spring Layers—White and Brown Leghorns; Anconas; Black Minorcas; Barred Rocks; Hatching eggs, all breeds.

Cockerels, Guineas, Ducks, Geese, Turkeys, for fall delivery.

Rabbits—Belgians; New Zealands; Flemish Giants.

Send for explanation of fall chicks and illustrated catalog.

BLOOMINGDALE FARMS ASSOCIATION,
Bloomington, Michigan

Buff Leghorns, and White Leghorns, eggs and baby chicks from great laying strains, satisfaction guaranteed.

Dr. WILLIAM SMITH, Petersburg, Mich.

Barred Rocks Exclusively. Baby chicks all sold. Thanks to all our customers. Order early for next season. H. R. Pierce, Jerome, Mich.

Barred Rock Eggs 15 for \$1.50, postpaid. 62 hens laid 8867 eggs last year; average 140 eggs. Lewis B. Avery, Saline, Mich.

LOOK BABY CHICKS \$12 A 100 UP
By Special Delivery Parcel Post, postage paid 20 different thoroughbred breeds. Utility & Exhibition grades. Live delivery guaranteed. Capacity 100,000 weekly. Catalog free. Nabob Hatcheries, Gambier, Ohio.

OUR JULY CHICKS

Rose and Single Comb R. I. Reds and Barred Plymouth Rocks, should begin to lay in January or February. Vigorous, farm raised stock, bred for color and egg production. 25 chicks, \$4.25, 50, \$8.10, \$16, prepaid by parcel post and safe delivery guaranteed. Interlakes Farm, Box 39, Lawrence, Michigan.

Blue CUSTOM HATCHING Hens

Fifteen dozen eggs incubated and chicks boxed and shipped prepaid \$8.75. Send eggs fresh well packed prepaid. Order July & August chicks now. Many varieties send for circulars. Crescent Egg Company, Allegan, Mich.

CHICKS AND PULLETS

Barron strain. From high producing hens that are bred right and handled right. All eggs from my own hens. Let us have at least three weeks to fill your order. Prices reasonable. Write for circular.

FOLLY COVE FARMS, R. R. 1, Holland, Mich.

30,000 Fine, Husky Baby Chicks For July Delivery, sent safely everywhere by mail. White Leghorns, \$12.00 a 100; \$8.25 for 50; Anconas, \$14.00 a 100; \$8.25 for 50. Order direct. Prompt Shipment. Strong, vigorous stock of grand laying strains. Full satisfaction guaranteed. Free catalogue.

W. Van Appledorn, R. 7, Holland, Mich.

Barred Roc's Chicks and eggs from healthy heavy layers. Price reduced. Catalog free.

T. C. SMITH, Route G, Chubbuck, Indiana

CUT PRICES—Baby Chix. Low Prices on Eggs—Varities, Bar. Rocks, S. C. W. Leghorns, Reds, W. Wyandottes, Buff & Wh. Orpingtons, Special Sale—Free. Goshen Poultry Farms, R-15, Goshen, Ind.

Leghorn chix hatched in July and Aug. make good layers. July and Aug. del. of day old chix W. & Br. Leg. \$12 per 100; R. I. Reds, Brd. & W. Rks. \$13 per 100; Buff Rks. & Orp. \$15 per 100; by parcel post, 2 wk. old chix \$35 per 100; 4 wk. \$45 per 100. Airedale paps. Sunny Side Poultry Farms & Hatchery, Blanchester, O.

Barred Roc's egg contest winners, eggs from strain with records to 290 a year. \$2.00 per setting prepaid by P. P. Circular free.

FRED ASTLING, Constantine, Mich.

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.

Learn Much About Hens

IN the past ten years we have learned more about hens and how to control them to obtain maximum egg production than in the preceding half century, according to Professor James E. Rice, of the Cornell University poultry department. The poultry keeper can now tell by her appearance whether a hen is laying, is going to lay, or is a loafer on the job. He has been able to hatch early chicks and get them to laying in the fall. But in spite of all he could do the hen has remained master of the situation. He could not get the egg yield in fall and winter with the best of care that was forthcoming in spring under ordinary care.

Here is where artificial lighting comes in. Discoveries in the use of artificial lighting in poultry houses, in recent years, said Professor Rice in a recent address, has enabled the poultry keeper to level the egg yield throughout the entire year, instead of having the usual heavy laying period in spring and few eggs in fall and early winter. The hens not only continue to lay eggs through the season when prices are high, but they lay more eggs than normal. This is because arti-

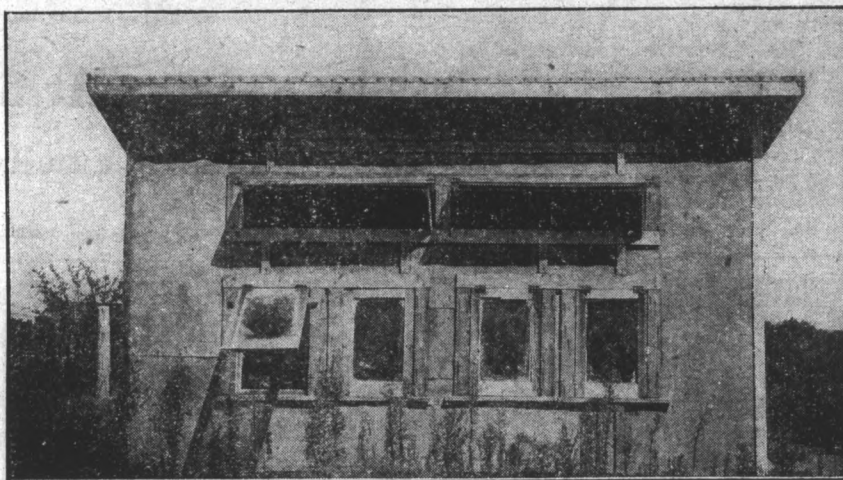
In the experiments two years ago at Cornell University the lights were turned on the twenty-eighth day of November from twilight until nine o'clock and this was continued until March 21, after which time artificial lighting is considered to be not necessary.

In these experiments dim lights were an aggravation. They were no better than normal daylight. With lights of the proper size, egg production was heavy in season of high prices, and the yearly production per hen was increased to a considerable extent. There was an increase in number of eggs laid of from twenty-two to thirty-three per cent during the first month.

In 1918, illumination was started on November 4, and was continued until March 24, 1919.

In one of these experiments, in early winter after the lights had been on for some time, they were turned off for a week and the egg yield went down from thirty-two per cent to no eggs at all. The lights were again turned on and egg production went up.

In one instance, a man with two thousand hens paid the entire cost of



WHEN stove brooders are used in colony houses in early spring it is necessary to have a house that is well ventilated and yet one that can be protected in case of severe storms. The house illustrated in the photograph has a front that will be satisfactory for early spring brooding. The four lower windows provide plenty of light on the floor in front of the brooder and the temperature of the house can be regulated by opening or closing certain of these windows.

The upper two windows can also be used to control the ventilation of the house and under ordinary circumstances they will be left open to provide the chicks with plenty of fresh air on the same principal as the open-front poultry house for laying hens. The early spring brooding of chicks can be managed very successfully with the coal-burning brooder stoves if they are located in a well-built colony house in which the ventilation can be controlled.

R. G. K.

ificial lighting enables them to handle the feed to better advantage.

Many poultry keepers have experimented with artificial lighting without a knowledge of the principle upon which it is based. Professor Rice says this is very simple. Hens are tropical fowls. They originated in a region when the days and nights are exactly the same length. They have a digestive tract of twelve hours' capacity.

When the hen was removed from her natural environment of twelve hours each day she merely adapted herself to the situation without changing her digestive system. When the shorter days of early winter come she stops laying. Then she hibernates like the woodchuck. She eats less, is less active and less productive. When the equal days come in March high egg production is reached.

If the hens are in good condition the poultry keeper can get eggs just as well in the fall and early winter as in spring, if they are fed exactly twelve hours apart every day in the year, and have ample time to eat the feed before going to roost. Professor Rice has the results of many practical tests made at Cornell and elsewhere to prove this statement.

a lighting system from the profits on one month's egg production due to the artificial lights.

Farmers with small flocks are using various kinds of lights, from kerosene lanterns and gasoline lamps to electric lights. The light can be hung in the poultry house nights and mornings, and will cost but little. A reflector is needed to throw the light on to the floor. This can be made from a piece of discarded tin. Some poultrymen with an electric lighting system, have an arrangement to turn the lights on or off by pressing a button in the house. One farmer has a clock arrangement by which the lights are turned on or off automatically at certain hours.

The cost of poultry house illumination may not be large. A New York state farmer made a gain of one hundred and thirty dozen eggs in a year from one hundred hens, and the cost for the lights was not over \$3.00.

It has been found that it requires but little if any more feed to produce eggs by artificial illumination than in the old way. Sixty-five per cent of the egg is water, and the profit comes not so much from increased egg production as from the larger number of eggs

CORONER'S INQUEST

Over the Death of Gerald Sumner and Mrs. Raymond Sumner

Fenton, June 25th.

A coroner's inquest was held before Justice Charles Corrigan today over the death of Mrs. Raymond Sumner and her son Gerald Sumner, who were killed Sunday morning when the Grand Trunk train No. 16 ran into their automobile, wrecking the car, and carrying it down the track about fifty feet.

Gerald Sumner, a boy six years of age, was killed instantly, and his mother, Mrs. Sumner, lived about three hours and died as the result of the injuries received; four others in the car were badly injured.

The entire community was shocked to learn of the frightful accident. A coroner's inquest was held, Clarence Tinker appearing as attorney for the Grand Trunk Railway and W. E. Robb, Secretary of the Howell Auto Insurance Company, appearing for the Sumner family. It appeared that on the main street of Fenton a gate keeper was employed to protect the public on week days but that the gates were not operated on Sundays. A number of the leading business men of Fenton testified that they had witnessed narrow escapes as most people relied on the gates being up as an invitation to pass over the track in safety. They also testified that the traffic on Sundays by automobiles was much greater than on week days, and that there was a greater necessity for a watchman on Sunday to protect the public. The jury, consisting of some of the best men in Fenton, brought in a verdict placing the responsibility on the railway company for not operating the gates to protect the public.

Mr. Sumner was insured in the Howell Company for collision insurance. This accident shows the necessity of carrying automobile insurance to protect the car in case of a collision with a railroad train or other moving object, and the complicated matters arising from the operation of automobiles shows the necessity of having an attorney in charge of an automobile insurance company who can give its members advice and assistance when the serious claims occur.

Laybilt S. C. W. Leghorns

Large, great layers, pure white. "Our hobby." Strong Day-Old Chicks. Hatch every week, but please order in advance. 15c each in lots of 25 or over. Guaranteed delivery full count alive and lively—parcel post paid. Choice cocks, cockerels, hens & pullets after July 1st.

V. A. MORSE, Ionia, Mich.

Fowler's Buff Rocks Cockerels \$4 up. Utility eggs for hatching \$2.00 for 15.

R. B. FOWLER, Hartford, Mich.

Chix 15c up 75,000 selected utility, exhibition, trap-nested chicks, always 3000 on hand. Some 10 days old, several varieties. Hatching eggs. Catalogue Beckman Hatchery, 26 E. Lyon, Grand Rapids, Mich.

Baby Chicks S. C. White & S. C. Brown Leghorns. July chicks from bred-to-lay farm. Range stock. Price was \$15, now \$12 per 100 by parcel post prepaid. Order direct from this ad.

Sunnybrook Poultry Farm, Hillsdale, Mich.

For sale "Buy the Best" eggs for hatching from 200 Egg strain Barred Plymouth Rock. \$2.00 per 15, \$5.00 for 45 eggs. H. B. PROCTOR, Grand Haven, Mich.

Rhode Island Whites for eggs and meat; 15 eggs \$2.50, 30 eggs \$4.00. Chicks for sale.

H. H. JUMP, Jackson, Mich.

R. C. Brown LEGHORNS, Pekin Ducks, W. Chinese Geese. Place orders early for young stock.

rs. Claudia Betts, Hillsdale, Mich.

S. C. Brown Leghorns. Heavy laying strain. Cocks, cockerels and yearling hens for sale.

Floyd Robertson, R. 1, Lexington, Ind.

Snowy White Rocks Fishal Strain, dandy layers.

Eggs \$1.50-15; \$4.50; \$7.00.

All prepaid. Mrs. Earl Dehnhoff, Vanburen, Ohio.

S. C. B. Minorcas. Eggs from pen 1, \$3.00 per 15, from pen 2, \$2.00 per 15. Incubator eggs \$7.00 per hundred.

R. W. MILLS, Saline, Mich.

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

laid when prices are high.

The secret of artificial lighting is that hens lay best when the nights and days are of equal lengths, and the poultryman who lights his hen house in fall and winter with this point in view will obtain the most satisfactory results, because he is catering to the natural requirements of the hen.

The poultry industry suffered a serious decline during the war, especially

in the east, the poultry population in New York decreasing thirty-three per cent, but Professor Rice predicts that within the coming five or six years eggs are going to bring higher prices than at present while cost of poultry feeds is quite certain to decline. This will give the poultry keeper a profit which will recompense him for his losses during war time.

New York.

E. E. R.

Home-Grown Dairy Feeds

THERE is no justification, business or economic, for so many dairy farmers to depend upon the purchase of concentrates. It is purely a soil question, and the majority of us are not making good use of our soils. Ninety per cent of the dairy farms throughout the country are not self-sustaining, that is, they do not produce enough grain feed for the cows, or sell enough cash crops to pay for the concentrates purchased. There are times when it may pay the farmer to buy concentrates, but there is no reasonable excuse for not trying to grow cash crops to pay for the purchased feeds.

Well matured corn for silage, with as many ears as one would grow for grain, clover, alfalfa, soy beans, oats and peas are the crops one ought to grow. These crops properly handled will provide ideal feed for the dairy herd and produce it cheaper than purchased concentrates. A few years ago there was reason in feeding a properly balanced ration, bringing it down to one to five and a half. Such a ration will produce the most milk, but it is the net profit we are after, and the man who grows good silage corn and feeds it along with clover and alfalfa hay, making a ration of perhaps one to seven, upon which his cows will thrive and keep in good health, even though they produce less milk, will make as much money in the long run. By adding to this ration from five to ten pounds of home-grown grains, corn and oats, he will have a nutritive ratio of one to six or seven, and all grown at home.

With land valued at \$100 per acre no man can afford to devote more than four acres of land to the cow. On this basis his corn must yield ten tons of silage to the acre, his corn for grain fifty bushels, his oats fifty bushels and his clover and alfalfa from two to three tons of cured hay. Such a yield of crops from two and a half acres will feed a cow two hundred and forty days. The intervening time, or one hundred and twenty-five days, will require at least one and a half acres for soiling and pasture crops. This gives us a total of four acres required under good farm conditions. By reinforcing the farm manures with phosphates and buying say six hundred pounds of good fertilizer per acre for each acre of land once in four years, the dairy farmer can grow a crop for market such as potatoes, beans and cabbage, in his rotation and still maintain the same yields of food crops for his cattle. A few dairy farmers are doing this, but the average is way below it. Such results are possible and merely call for an efficient system of cultivation and fertilization such as should be practiced on every well-managed

dairy farm in the state.

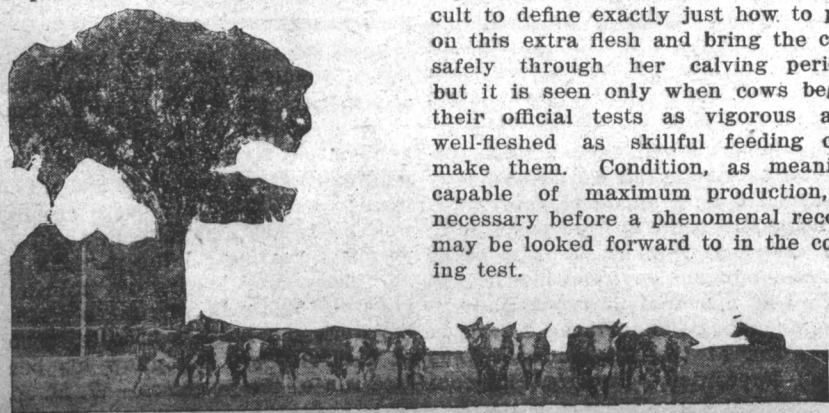
The time has come when dairy farmers must devote more attention to soil management and crop growing and less attention to soil management and less attention to balanced rations until they get their farms on a self-sustaining basis. When dairy farmers do this they will discover that they are independent of feed dealers in feeding the cows, and as the system is continued a few years they will create a surplus which can be utilized in feeding horses, beef cattle, sheep and hogs. No greater agricultural fallacy was ever preached than that of feeding heavy rations of grain and by-product feeds to dairy cows and making the farm merely a feeding spot for dairy cows. Give any dairy farmer ten thousand pounds of milk a year cows and let him continue to buy all of his grain feeds and he would not be lifted to the cheerful heights of prosperity. The trouble on most farms is that the land has not been given proper cultivation and fertilization to encourage the growth of the right kinds of feed for the cows. Of course the dairy farmer must have good cows and clean and comfortable stables, but these are merely incidentals to the real economical manufacture of his raw products into milk. The farm is the basis of successful dairying, and any other view of the business is not founded on business or economic principles.

W. M. K.

THE HERD AND DAIRY.

THE farmer of moderate means can use an ordinary herd of cows as a part of the foundation of a splendid grade herd if he selects a good sire of either one of the great dairy breeds. He can secure one or two heifers of the breed of his choice for a moderate outlay of money and gradually as time goes on he can sell his grade cows to his less fortunate neighbors and fill their places with pure-bred animals grown on his own farm. By and by he will find himself with a pure-bred herd and it will have cost him no large amount of money at any particular time. Such a course and such results are within the reach of most farmers throughout the country.

The cow must be in proper condition to go through the work of making a good production record, whether for seven days, thirty days, ninety days or one year. Few breeders of dairy cattle realize what condition means in making a great production record. It is often the extra few pounds of flesh and reserve energy that means the breaking of a world's record for milk and butter-fat production and places some breeder on the highest pinnacle of fame. It is difficult to define exactly just how to put on this extra flesh and bring the cow safely through her calving period, but it is seen only when cows begin their official tests as vigorous and well-fleshed as skillful feeding can make them. Condition, as meaning capable of maximum production, is necessary before a phenomenal record may be looked forward to in the coming test.



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Farmers appreciate the De Laval during the busy summer season because of its large capacity and the fact that it is easy to turn and easy to clean.

With a De Laval the milk is taken care of in the shortest time and with the least effort—both important in hot weather when a number of other things have to be done.

Quick handling of milk and cream in hot weather maintains the highest quality of both, and often means the difference between profit and loss.

Over 2,500,000 De Lavals are in daily use the world over—more than all other makes combined. More than 50,000 local agencies look after the needs of De Laval users.

If you don't know the De Laval agent in your community, write to the nearest De Laval office.

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

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

ABERDEEN ANGUS

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

"Edgar of Dalmeny" won the Michigan Grand
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Chicago International last December.

We have a few females with calves at foot and
re-bred to "Edgar of Dalmeny" that Mr. Scripps
has consented to sell to reduce the fast grow-
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ORION, MICHIGAN

W. E. SCRIPPS, Prop.,

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WOODCOTE ANGUS

Established in 1900.

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The herd (tested annually) is absolutely
free from tuberculosis.

A few bulls (no females) for sale

WOODCOTE STOCK FARM, Ionia, Mich.

LONGWOOD ANGUS: A choice lot
of young bulls
for sale, also a few cows and heifers.
MARSHALL KELLY, R. R. 10, Charlotte, Michigan.

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

FOR SALE. Six registered Aberdeen Angus
Bulls, one year old. Prices
reasonable. LANG BROS., Davison, Michigan.

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

AVONDALE STOCK FARM,
WAYNE, MICH.

Registered Guernseys

Choice May Rose Bull Calves—at prices you can
afford to pay.
J. M. WILLIAMS, North Adams, Mich.

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Rose Bull Calf, Sired by St. Austell Dreadnought
34671, by Don Diavolo of Linda Vista, 23565, and from
Miss Bess of Yellowdale, A. R. 583 lbs. B. F., and
average record for three years of 510 lb. B. F. and a
calf. Price \$200. Also several fine A. R. bulls of ser-
viceable age. BALLARD BROS., R. 4, Niles, Mich.

Guernsey Pure Bred Bull Calves from one to
two months old \$50 each "registered."
WALTER PHIPPS FARM, 30 Alfred St., Detroit, Mich.

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GUERNSEYS must reduce herd, so offer
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Glenwood breeding also bulls, all stock of A. R. breed-
ing, herd tuberculosis tested.
T. V. HICKS, Battle Creek, Mich.

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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.

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Traverse City, Mich.

"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.

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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.

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Gall Cure is GUARANTEED to cure your horse
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eases, bruises, cuts, chafes, mud scalds, grease heel,
chapped teats on cows and other wounds on horses,
cattle, pigs, and poultry. W. R. Pearson, Oakville, Ken-
tucky, says: "I had a mare with an awfully bad shoulder
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remedy and it has healed up nicely. I will never be with-
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Accept no substitute; watch for the famous "Old Gray
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Write us your wants.

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have sold the cow adv. and have for sale a 2-yr-
old daughter of a 25 lb. cow, dark in color and
due to freshen Oct. 15, 1919 to 27 lb. grandson
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yearling daughter of a 28 lb. son of Maplecrest
Korndyke Hengerveld.

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NO more bull calves to offer until next fall. Place
your order for one from next fall's crop. My herd
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Holstein Bull dropped May 25-19, a beauty, 1/4 white,
dam 21.4. Price \$100.00. Write for photo
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Registered Holstein Friesian Bull calves from 5 to
7 mo. old at \$75. each. 30 lb. Pontiac breed-
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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 123 lbs.
of butter in one year. It is the yearly cow we are
looking for to deliver the goods. Flint Maplecrest
Boy's Dam is Gluck Vassar Bell, 30.57 lbs. of butter
in 7 days and 121 lbs. in 30 days. Her butter fat test
is 5.27. This looks about right to the man who goes
to the creamery. We have bull calves from 2 weeks
to 12 months old. From A. R. O. dams and sired by
Flint Maplecrest Boy, which we will sell at a dairy
farmers price breeding considered. Just think 40
more cows to freshen which means more bull calves.
Let us know your wants. We will make terms on
approved notes.

JOHN H. WINN, Inc.

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

REGISTERED heifer and bull calves, of the best
A. R. breeding in Holsteins for sale. Special price on 2
heifers and bull. C. H. GIDDINGS, Gobleville, Mich.

Shorthorn Breeders' Outing

THURSDAY, the morning of the
nineteenth of June, dawned a
perfect day. It proved irresist-
ible to the many Shorthorn breeders
of Clinton county who had read the re-
cent announcement of the excursion to
the Richland Farms at Prescott. The
line of automobiles started promptly
on scheduled time, with W. G. Ander-
son, the president of the Clinton Coun-
ty Shorthorn Breeders' Association,
leading the procession. On the back
of his car was a large sign which read,
"Clinton County Shorthorn Breeders,
B' Gosh." Other machines joined the
line, a mile or more in length, at Mc-
Master's Corners and at Ithaca. There
were ten of them altogether with thir-
ty-seven enthusiastic Shorthorn pas-
sengers. Across the back of the cars
down through the line were other
signs such as "To Prescott and Back,"
"Forty-three of Us," (indicating the
number of Shorthorn breeders in the
county), "We Breed Shorthorns,"
"Shorthorns for Us," and "Clinton
County Shorthorns." These signs serv-
ed a good purpose in keeping the auto-
mobiles in line as well as announcing
the nature of the expedition to people
along the line, advertising Clinton
County Shorthorns and adding to the
general jollification.

The round trip covered three hun-
dred nineteen miles from St. Johns.
Not an incident happened to mar the
pleasure of the tour, but each driver
had just trouble enough of one kind or
another to keep him from thinking he
had the best car in the bunch.

The first stop was at the farm of
Charles Wetzel just east of Ithaca and
while we looked over his small herd of
good Shorthorns and some of his prize
Poland-Chinas he put on a clean collar
and joined the crowd.

The crowd ate a picnic dinner on
the beautifully shaded lawn of Kennel-
ley Brothers near Saginaw.

We were met at Prescott by our
War Food Administrator, George A.
Prescott, who is the senior member of
the firm, his younger son, George A.
Prescott, Jr., who plays an important
part in the firm's big business and
whose face is familiar to all good
Shorthorn men the county over, W. J.
Bell, of Rose City, and two other Short-
horn breeders from farther north in
the state, also joined the crowd for
a brief period.

The firm of C. H. Prescott & Sons
is doing a lot toward putting Michigan
on the map again in the Shorthorn
world. Their equipment for the breed-
ing Shorthorns is ideal and there is
abundant room for expansion. There
are around eight thousand acres in one
body belonging to this outfit, twenty-
five hundred of these acres are plow
land. Their two large elevators, the
capacity of which is eighteen thousand
bushels, are not sufficient to hold their
annual production of grain.

Haying had just begun. Hundreds
of acres of alfalfa and clover with a
slight mixture of timothy looked good
for two tons per acre and promised to
keep the hay-making crew busy all
summer. Blue grass and white clover
grew thick and deep in the boundless
pastures. The soil is full of limestone,
none of the vegetation showing the
least sign of acidity. The quality of
the soil and the crops was a pleasant
surprise to many of these men from
one of the richest counties in the state
as well as the quality of the cattle.

The imported bull, Lorne, which rep-
resents a value to this concern of many
thousand dollars appeared very much
at home out in the cleared pastures in
the company of a score or more of
matrons. In this environment close to
nature he appeared to as good advan-
tage as among the admiring crowds in
the arena at the International Live
Stock Exposition. Imported Edgcote

Medora was found in company with a
number of others of her class "knee
deep in June" and, strange to say, she
did not appear at all lonesome or out
of place. I dare say, however, that to
be again surrounded by an admiring
throng of men with a dozen hands
stroking her all at the same time re-
called to her memory the days back in
Chicago last December when she stood
so close to the head of her class.

The young bulls in their comfortable
boxes at the big barn are a choice lot.
There is no inferiority. They are all
good, and the large numbers of well-
nigh perfect youngsters made a strong
impression upon the crowd of the im-
portance of a good sire and a good
care-taker.

Much credit is due to the herdsman,
Mr. Napier, for the high-class condi-
tion of the herd and for the valuable
information he was able to give.

I expect that in addition to the im-
mediate enjoyment of the occasion this
trip will eventually result in helping
the Clinton County Shorthorn Breed-
ers' Association to bring about the ful-
fillment of their motto: "More and
Better Shorthorns." P. P. POPE,
County Agricultural Agent.

QUARTERS FOR THE BOAR.

ONE of the best investments the
breeder or farmer can make is a
safe and comfortable house and yard
for the breeding boar. It should be
away from the rest of the hogs but
connected with the other yards with a
lane or driveway. A comfortable col-
ony house and a strong iron fence in-
closing a small yard, and a larger yard
making altogether an acre of land will
be sufficient to give him the necessary
exercise and afford good grazing when
the ground is not covered with snow.
If the soil is good and the lot properly
drained by a porous subsoil or tile it
will produce a variety of grasses and
clovers, such a combination as will
suit the needs of the hog. Alfalfa is
not well suited for the small yard so
one must provide grasses that are.
Bluegrass, orchard grass, timothy and
red-top mixed will survive and last for
years unless abused or rooted out. To
start such a combination of grasses in
the boar pasture prepare the ground
in the spring, sow oats and peas mixed
and seed with timothy, clover, orchard
grass and red-top mixed equal parts
and add one-third the amount of blue-
grass. The lot will be ready for graz-
ing in six weeks. Such a seeding will
come on and furnish grazing for a
long time.

Alfalfa is such a valuable crop for
grazing that it will pay one to have a
field adjoining the boar's yard, so that
he may have access to it when it is
ready for grazing. If the growth is too
luxuriant for him to graze profitably
alone turn one or two bred sows in
with him to get the full benefit of the
crop. By changing him as the condi-
tions of growth in the two lots demand
and allowing one or two sows to run
with him when there is an abundance
of grazing he will always have better
grazing than when only a small lot is
used. Of course, if he is to have good
grazing he must have rings in his
nose to prevent rooting.

Such a house, yard and pasture for
the boar will save a lot of unpleasant
and risky work in caring for the hogs,
more especially when an aged boar is
kept on the farm. Besides there is no
more disgusting feature of hog raising
than to have breeding boars breaking
through fences and running about the
premises rooting up the gardens and
shrubbery and tearing up things in
general. The man who takes pride in
his work and keeps a breeding record
of his sows will not allow his boars
free run of the premises.—W. M. K.

HOGS ADVANCE AGAIN.

MANY times this year nearly everyone interested in the hog trade in any way has been fooled by the course of the market, the fluctuations being by far the widest every known. Just when it looked as though prices were headed for reductions of several dollars per hundred pounds the market has suddenly started upward, climbing up \$1.00 or more within a short time, and when prices go up as much as fifty cents in the course of a single day, it does not require much time to recover previous big breaks in values. Within a short time high record prices have been paid for hogs, following severe declines, and the number of pessimists predicting big declines is decreasing very fast, although no one can tell what will take place in July and August. These freak markets are deplored by legitimate traders, being in a great measure brought about through the operations of "yard" speculators, who buy frequently many thousand hogs with the intention of reselling them to the packers in hope of realizing substantial profits by doing so. On many days great numbers of "stale" hogs accumulate in the stock yards, and by piling up on top of fresh supplies, a glutted market and sharp declines in prices are brought about. It has happened recently that early sales in the day were made at advances of fifty cents per 100 pounds, while the close saw the improvement all lost. Choice barrows weighing from 180 to 225 pounds have sold the highest, while rough heavy packing sows sold lowest of all. As is apt to be the case, heavy sows that have weaned their litters are arriving in increasing numbers, but it is hoped and believed that most farmers will realize the great importance of retaining their good sows for further breeding. Provisions share with hogs the great rise in prices, with recent sales of pork on the Chicago market around \$9 a barrel higher than a year ago. Late foreign advices indicate that fat substitutes will be used extensively instead of American fats, but of late the exports of all kinds of provisions have been of enormous proportions. For a recent week exports from the seaboard amounted to 22,102,000 pounds of lard and 50,146,000 pounds of meats, these shipments comparing with 19,942,000 pounds of lard and 40,143,000 pounds of meats a week earlier, and with 6,940,000 pounds of lard and 16,916,000 pounds of meats for the corresponding week last year. Recent Chicago receipts of hogs have averaged in weight 232 pounds, being five pounds lighter than receipts for the corresponding week of 1918.

W. W. F.

HOLD ON TO SOWS.

A FIRM heavily interested in the provision trade in Chicago, and having extensive sources of information about the hog industry, makes the following statement: "We are now at about the end of the last autumn's pig crop, and through the months of July and August heavy sows will make up the big end of the supply. How liberally producers will market their sows remains to be seen, but from what we can gather from the farmers who are arriving in the stock yards, indications are that more sows than usual will be carried over to increase the pig crop of the future. Farmers say that sows are the best property on their farms at the present time, and they think they will continue to be good property for a few years to come. With sows marketed only sparingly and the new hog crop well marketed, hog prices will keep high all summer."

W. W. F.

Rape possesses high feeding value for pigs during the fall months.

MICHIGAN LIVE STOCK INSURANCE COMPANY

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



100 Pounds Of Milk Per Day From Holsteins.

The breed of cows that produces upwards of one hundred pounds of milk in a day is the breed the practical dairyman wants on his farm or at his country home. Holstein cattle have broken every record in the production of milk and butter, and there are many individuals of the breed that are daily yielding over a hundred pounds of milk a day.

Holstein cows are larger and more vigorous than the cows of any other breed; they are more easily cared for and less susceptible to disease; and when their milking days are over they are far more economical for converting into beef.

If interested in HOLSTEIN CATTLE Send for our booklets—they contain much valuable information.

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

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

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

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

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

For Sale Jersey Bull, Goldie Foxhall Lad No. 170446, Sire Pegasus Foxhall No. 129549 Dam Goldie Sophie No. 352783, this bull is solid color, black tongue and switch, dropped Mar. 10th, 1918, an extra fine individual, good enough that I will ship him C. O. D. Also a few bull calves. Address NEWMAN'S STOCK FARM, R. 1, Marlette, Mich.

The Wildwood Jersey Farm. Bulls for sale by Majesty's Oxford Fox 134214 and Eminent Lady's Majesty 150894, and out of R. of M. Majesty dams. ALVIN BALDEN, Capac, Mich.

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

HEREFORDS 8 bulls from 7 to 10 months old, Prince Donald and Farmer breeding for sale. ALLEN BROS., Paw Paw, Mich.

Harwood's White Faces KEEP ON 508019 A Ton Bull Heads the Herd The beef cattle of the day. Only 2 yearling bulls left. My 1918 crop of bulls ready for sale. Will spare a few females. You can not make a better investment. I wish to thank my customers for past favors.

JAY HARWOOD, Ionia, Mich.

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

Herefords Bob Fairfax #94027 at head of herd. Stock for sale, either sex, polled or horned, any age. Priced right. EARL O. MCARTY, Sec'y. H. B. Ass'n. Bad Axe, 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. Herd under state and federal supervision. 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.

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

Richland Stock Farm SHORTHORNS HOME OF THE MICH. CHAMPIONS We offer for sale a few good dual purpose cows with calves at foot. Also two three year old bulls suitable for range purposes. We invite inspection.

C. H. PRESCOTT & SONS, Office at Tawas City, Mich. Herds at Prescott, Mich.

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

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

Scotch Topped Cows For Sale. Bred by the Mich. Agr. College. M. V. Butler, Williamston, Mich.

For Sale Shorthorns of Quality Scotch and Scotch Topped descendants of Acheron Hope, Avondale, Maxwellton Sulton and White Hall Sulton, model type, by the Oscola Co. Shorthorn Breeders Ass. John Schmidt, Sec. Reed City, Mich.

Shorthorns New list, 27 bulls; 28 females. Feb. list all sold. Central Mich. Shorthorn Breeders' Ass'n., Oscar Skinner, Sec'y., Gowen, Mich.

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

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

For Sale Two Shorthorn Bulls, one red and one roan. Ready for service. LUD. HASTINGS, Napoleon, Michigan.

Bates Shorthorns Three extra fine cows for sale. J. B. Hummel, Mason, Mich.

HOGS Registered Berkshire Boars; ready for service. A few gilts and sows bred for May and June farrow. Also spring pigs. CHASE STOCK FARM, Marlette, Mich.

FOR SALE Fine Purebred Berkshire Pigs, both sex. Only a few left. Fairman Farms, Plymouth, Michigan

Attention Breeders and Farmers Now is the time to buy that Duroc Boar for fall service. We have some Carkers. March pigs will weigh 100 lbs. July 1st. Inspection Solicited. Prices very reasonable. RUSH BROS., Oakwood Farm, Romeo, Michigan.

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

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

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

REGISTERED DUROC BOARS—We have a choice lot of spring boars, sired by Michigan Cherry Col. No. 118479, Top Cherry King J. No. 102829, and Col. Defender 26th, No. 125705. Make your selection at weaning time and raise according to your own ideas. Write for pedigrees. The Jennings Farms, R. 1, Bailey, Mich.

SEVERAL GOOD Duroc sows bred to Orion's Fancy King. Boar pigs ready for service. NEWTON BARNHART, St. Johns, Mich.

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

DUROC-JERSEYS E. D. HEYDENBERG, Wayland, Mich.

DUROC JERSEYS Will sell bred sows and gilts August 7th. Ask for catalogue. CAREY U. EDMUNDS, Hastings, Mich.

DUROC gilts bred for August and September farrow, sired by Orion Cherry King Col. 2nd. Write for description and prices. W. C. TAYLOR, Milan, Mich.

8734 Hampshires recorded from Jan. 1 to Apr. 1 '19. Did you get one? Boar pigs only for sale now. JOHN W. SNYDER, R. 4, St. Johns, Mich.

Originators of the Famous O. I. C. Hogs

Breed The Best THE WORLD NEEDS LARGE FAT HOGS

Why lose money breeding 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.

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. S. Stock of all ages for sale. Herd headed by Calloway Edd, the World's Champion O. I. C. boar assisted by C. O. 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 Grandell'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 buyer's name. J. CARL JEWETT, Mason, Mich.

O. I. C.'s Big type serviceable boars and gilts bred for July and August farrow. G. P. Andrews, Dansville, Mich.

O. I. C. For Sale—Spring Pig's H. W. MANN, DANSVILLE, MICHIGAN.

O. I. C.'s Bred gilts all sold. Plenty of spring pigs good enough to ship C. O. D. F. C. BURGESS, R. 3, Mason, Mich.

O. I. C.'s 2 Choice Yearlings Boars and gilts. Clover Leaf Stock Farm, R. 1, Monroe, Mich.

O. I. C.'s One very good yearling boar, and this spring pigs to offer, registered free. 1/4 mile west of Depot. Citizens Phone 124. OTTO B. SCHULZE, Nashville, Mich.

For 25 Years We have been breeding Big Type Poland Chinas. Our new herd boar "Michigan Buster" is a mighty good son of the great "Giant Buster" dam "Mow's Miss Queen 2." Some breeding! Litter of 14. We are offering some sows bred for fall farrow. J. C. BUTLER, Portland, 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 less G. A. BENJAMIN, R. F. D. 10, Portland, Michigan.

Big Type Poland Chinas—A litter by Gerstale Jones (Carter); one by Gerstale King (Gerst); and a nice bunch of pigs by Mammoth Ben 311959. The stretchy, growthy, smooth, well marked pigs we like to see. Am pricing them for immediate delivery. Would be pleased to have you come see them, pick your pig and take him home with you. They sure will bear your inspection. Both boars and sows for sale. 8 miles straight north of Lake Odessa; 5 1/2 miles from Saranac; 8 miles from Ionia. "First come first served." WESLEY HILL, R. 6, Ionia, Michigan.

LARGEST Type P. C. in Mich. Nothing at present. L Spring pigs too young to ship. Have 60 the best I ever raised which I will offer later. Come and see two greatest boars in state: L's Big Orange 29187 and Lord Olanman 33027. W. E. LIVINGSTON, Parma, Mich.

THE OLD FASHIONED SPOTTED CHINA HOGS. Gilts due to farrow JUNE OR JULY—\$100 up. Spring pigs \$25 weaning time. J. W. WILLIAMS, North Adams, Mich.

L. S. P. C. Boars all sold. A few nice gilts bred for fall farrow. H. O. SWARTZ, Schoolcraft, Michigan.

Big Type Poland Chinas with quality. Bred for pigs. Ask any questions about sows sold. Get in line for pigs. BAUMGARDNER, R. 2, Middleville, Michigan.

Big Type Poland-Chinas pigs, sired by C. A. King Joe B 290331, by King Joe 251257; Monster Big Bob 327623, by Lukens' Big Bob 287777; Buster Half Ton 238225, by Great Big Half Ton 261243. Out of sows, whose pedigree, individuality and quality are of equal merit as my herd boars. Can furnish pairs and trios, not akin. C. A. BOONE, Blanchard, Mich.

MICH. Champion herd of Big Type P. C. Nothing for sale but fall pigs; orders booked for spring pigs. E. R. LEONARD, St. Louis, Mich.

Big Type P. C. boars all sold. Nothing now until fall. I thank my customers for their patronage. Spring pigs coming fine. C. E. GARNANT, Eaton Rapids, Mich.

Large Type P. C. Nothing for sale now. Will be in market with better than ever this fall. If herd stuff counts. W. J. HAGELSHAW, Augusta, Mich.

Big Type P. C. gilts, bred for August and September farrow. A. A. WOOD & SON, Saline, Mich.

Big Type P. C. Choice bred sows from Iowa's greatest herds, the big bone prolific kind with size and quality. E. J. MATHEWSON, Burr Oak, Mich.

Big Type Poland's all sold out, nothing for sale at present. Booking orders for spring pigs. Thanking my customers. L. L. Chamberlain, Marcellus, Mich.

Mammoth Poland Chinas all sold. General Jones No. 317249, son of Gerstale Jones heads our herd. Clyde Weaver, Ceresco, Mich.

Big Type P. C. Will have better males than ever for fall trade, gilts in season. JOHN D. WILEY, Schoolcraft, Mich.

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.

BREEDERS OF PERCHERONS

Important. (Wt. 2350) Sire of one & two yr. olds. Sevier a ton son with 14 in. bone at two years in service. Mares as good. Young stock for sale. Chas. Osgood & Sons, Mendon, Michigan.

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

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

7-Yr.-Old Grade Clyde Mare, due to foal in July, weight 1,700 pounds. F. W. Kennedy, Plymouth, Mich., Phone 250 F. 1-4.

SHEEP

TO THE KIDS

Over 300 have written me about the sheep I am giving away. I would like to send one to each of you but two is my limit. Three disinterested judges are picking the winners. If you are not one of the lucky kids, why not save your money and buy one next December. I will contract to buy the produce back at a splendid price. KOPE-KON FARMS, S. L. Wing, Proprietor Coldwater, Michigan

BUY A SHEEP

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

For Shropshire Yearling Rams write or call on ARMSTRONG BROS., R. 3, Fowlerville, Mich.

Shropshires Am offering 15 yearling rams and 8 yearling ewes of Senator Bibby breeding. C. J. THOMPSON, Rockford, Mich.

FOR SALE—34 Ewes and 38 Lambs. Inquire of H. E. PETERS, South Lyon, Michigan

LATEST MARKET REPORTS

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, July 3.

WHEAT.

There is very little activity in the wheat market, and not much trading is expected until the new crop begins to arrive. The outlook for a record crop has been little changed the past week, except that many reports of lodging are coming in. The grain is generally ripening a few days ahead of the normal date. Threshing has begun in the southern wheat growing states. The visible supply for the United States shows a decrease of 2,707,000 bushels the past week. A year ago No. 2 red wheat sold at \$2.17 per bushel on the local market. Present Detroit prices are:

No. 2 red	\$2.35
No. 2 mixed	2.33
No. 2 white	2.33

CORN.

Private reports on the prospective crop place the total at nearly a third of a billion bushels below the 1918 yield. These reports have had a bullish influence on trading. Dealers, however, are anxiously waiting for the government figures on the present acreage of the crop. The stocks of corn on hand are very small. Prices in Argentina where heavy European orders are being placed, have advanced. The United States visible supply decreased 298,000 bushels the past week. Chicago trading has been fairly active with prices as follows: No. 2 yellow \$1.83½@1.85; No. 2 mixed at \$1.80@1.83½; September \$1.82½; December \$1.61½. One year ago the quotation at Detroit was \$1.65 for No. 3 corn. Present prices here are higher as follows:

No. 3 corn	\$1.86
No. 3 yellow	1.86
No. 4 yellow	1.86
No. 5 yellow	1.83
No. 3 white	1.89

OATS.

Although there are two sides to the oat deal, the bulls have confidence in the demand from Germany as soon as her ports are open for free shipping. Weather conditions in France have been too dry for the proper development of the crop. In this country there has been some improvement in the grain the past fortnight, although in Illinois, Iowa, Wisconsin and Missouri rust is doing considerable damage to this cereal. The visible supply increased 2,469,000 bushels. One year ago standard oats sold on this market at 82½¢ a bushel. Present prices here are:

No. 2 white	72½
No. 3 white	72
No. 4 white	71

RYE.

Further declines are observed in rye markets. Trading has been in small volume with the visible supply showing a decrease of 67,000 bushels. At Detroit cash No. 2 is now quoted at \$1.42 per bushel.

BARLEY.

In the chief barley growing states the crop is in from good to excellent condition, with the acreage probably slightly below that of a year ago. On the local market there is very little trading with prices unchanged from last week at \$2.30@2.40 per cwt. for cash No. 3.

BEANS.

The feeling is easy in the bean market and transactions are of a small order. In New York there is a lack of buying interest, with the price paid for Michigan pea and medium varieties scarcely exceeding \$7.50 per cwt. Kotenashi from the Orient are coming forward freely and are selling from 25¢@50¢ lower than last week. Some export orders are being placed in New York. The Chicago market is slow and steady with stocks in moderate supply. Michigan hand-picked pea beans of choice to fancy grade are quoted there at \$7.75@8, and fair to good at \$6.75@7.25; red kidneys at \$11@11.50. At Detroit the trade is easy at \$7.15 per cwt. for immediate and prompt shipment.

HAY.

The hay market continues active with offerings light and the market steady at last week's decline. Detroit quotations are: No. 1 timothy \$36.50@37; standard timothy \$35.50@36; light mixed \$35.50@36; No. 2 timothy \$34.50@35; No. 3 timothy \$30@33; No. 1 mixed \$33@34; No. 1 clover \$30@31.

EGGS.

Values have held rather firm this past week. There has been some improvement in the demand for current consumption. Production appears to be shrinking. The quality of the arrivals at accumulating centers is deteriorating and dealers are taking the stock with greater caution. At Detroit fresh candled current receipts are jobbing at 40¢@41¢; do firsts in new cases 43¢; extra firsts candled and graded in new cases 44¢@44½¢. At Chicago the quotations are lower, with firsts at 39¢@40¢; ordinary firsts at 36¢@37¢. An irregular market prevails in New York, with nearby western stock bringing from 50¢@58¢. In Philadelphia the market rules firm with western extra firsts at \$15 and firsts at \$14.40 per case.

BUTTER.

With the exception of the Chicago market, butter is reported from steady to higher. At Chicago a fractional decline is noted, with creamery report-

ed at 48¢@48½¢ per pound. In Detroit fresh creameries are jobbing at 46¢@48¢. The New York trade is steady with a range in creamery prices from 48¢@51¢. A firm market obtains in Philadelphia with western creamery going to jobbers at 55¢@56¢.

POTATOES.

The old potato market is practically at an end. Last Saturday thirty-eight cars were moved, of which seven originated in Michigan. At Detroit the sales are too few to establish a market. Michigan round whites in sacks are generally selling at 75¢@1.25 per cwt. The new crop has an excellent start, particularly in the northwestern section of this state; the acreage, however, is considerably less than that of last year. Potato bugs are very numerous and spraying has already been started.

CHEESE.

Speculative buying has been noted in this market during the past week, and prices have generally advanced. Receipts show an increase but shipments have been so large that stocks have actually declined. At Chicago Young Americas are quoted at 31½¢ and single daisies at 31¢. At Detroit Michigan flats are going to jobbers at 30¢@31¢; single daisies 30½¢; bricks 31¢. Whole milk current make specials are reported at 31½¢@32½¢ in New York, and do average run 30½¢@

31½¢. Full milks bring 31½¢@32½¢ in Philadelphia.

DETROIT CITY MARKET

There is not a very large volume of business being done on the city markets. Old potatoes are moving slowly at 75¢@1 per bushel. Poultry is in fair demand at 34¢ per pound, and eggs are selling at 47¢ in case lots. Dressed veal is quoted at 24¢ a pound, and country butter at 60¢. Cherries \$8 per bushel; strawberries \$9 a bushel; green peas at \$3@3.50 per bushel; gooseberries \$8.

GRAND RAPIDS

There is very little demand for old potatoes and the few marketed last week sold at 50¢ per bushel. At some outside points farmers find no sale for them. At points where sales were made the price was 50¢@75¢. There is still a demand for old hay at \$27@28 per ton. Considerable new crop, alfalfa, is being marketed at \$24. Veterinarians advise against all daily feed of alfalfa to horses as it affects the kidneys. The extremely hot weather hit the early pea crop hard, it being only 60 per cent of a harvest. The price last week was \$2.50@3 per bushel. The hot spell also hit the red raspberry crop and the few crates marketed last week were at 38¢@40¢ per quart box.

NEWS OF THE WEEK.

(Continued from page 2).

Tuesday, July 1.

TWENTY-ONE American soldiers guarding the station at Romanovka, Siberia, are killed by the Russian Reds.—Over 1,000 officers and enlisted men of the 339th arrive at Camp Merritt, N. Y.—Earthquake shocks in Tuscany, Italy, are known to have killed 127 persons.—A late dispatch states that the former German crown prince escaped from the island of Wierengen on Sunday.—The latest compilation of statistics on the war shows that 7,450,200 persons were killed in battle.—During May 168 ships of food were shipped to seventeen different countries abroad by the relief organizations.

Live Stock Market Service

Reports for Thursday, July 3rd

BUFFALO.

On the market here today pigs sold at \$21@21.50 and top hogs at \$23.10; lambs brought \$18.50 and calves \$22.

DETROIT

Cattle.

Receipts, 2,226. Market strong at last week's closing prices. Best heavy steers \$13.00@13.25
Best handy wt bu steers... 11.50@12.00
Mixed steers and heifers... 10.00@10.50
Handy light butchers.... 9.00@ 9.50
Light butchers 8.00@ 8.50
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 9.00@ 9.50
Bologna bulls 8.00@ 8.50
Stock bulls 7.00@ 7.75
Feeders 9.50@10.00
Stockers 8.00@ 9.00
Milkers and springers...\$ 75@ 125

Veal Calves.

Receipts 1,416. Market closed dull. Best \$18.00@18.50
Others 11.00@17.00

Sheep and Lambs.

Receipts 969. Market steady. Best dry-fed lambs \$17.50@18.00
Fair lambs 16.00@17.00
Light to common 14.00@15.00
Yearlings 13.00@14.00
Fair to good sheep..... 7.50@ 8.00
Culls 4.00@ 6.00

Hogs.

Receipts 3,112. Market strong and 15c higher than Wednesday. Pigs \$ 20.15
Mixed 20.00@20.50

CHICAGO.

Hogs.

Estimated receipts today are 21,000; holdover 7,127. Better grades are unevenly 10¢@25¢ higher; packing grades mostly steady. Bulk of sales at \$21.25@22; tops \$22.25; heavy 250 lbs up, medium, good and choice \$20.40@22.10; medium 200 to 250 lbs, medium, good and choice \$21.30@22.20; light 150 to 200 lbs, common, medium, good and choice \$21.40@22.25; light lights 130 to 150 lbs, common, medium, good and choice \$20@21.85; heavy packing sows 250 lbs up, smooth \$20.65@21.25; packing sows 200 lbs up, rough \$19.75@20.50; pigs 130 lbs down, medium, good and choice \$18.50@20.

Cattle.

Estimated receipts today are 5,000; beef steers and bulls 25¢@50¢ higher; good she stock 25¢ higher. Beef steers medium and heavy weight 1100 lbs up, choice and prime \$15@16; do medium

and good \$13@15.15; do common \$11.25@13; light weight 1100 lbs down, good and choice \$13.75@15.25; do common and medium \$10@13.75; butcher cattle, heifers, common, medium, good and choice \$7.50@13.75; cows, common, medium, good and choice \$7.25@12.75; bulls, bologna and beef \$8@12; canners and cutters, cows and heifers \$6@7.25; do canner steers \$7@10; veal calves, light and handyweight, medium, good and choice \$17.25@18.25; feeder steers, common, medium, good and choice \$9.25@12.75; stocker steers common, medium, good and choice \$8@12; stocker cows and heifers, common, medium, good and choice \$7.50@9; stocker calves, common, medium, good and choice \$8.25@11.75.

Sheep and Lambs.

Fifteen cents higher. Lambs 84 lbs down, medium, good, choice and prime \$15.50@17.25; do 85 lbs up, medium, good, choice and prime \$9@15; spring lambs, medium, good, choice and prime \$10.50@14; yearling wethers, medium, good and choice \$7@9; ewes, medium, good and choice \$3@6.50; ewes, cull and common \$7.50@13.50; breeding ewes, full mouths to yearlings \$12.95@13.50.

BUFFALO.

Wednesday, July 2, 1919.

Cattle.

Receipts ten cars; best slow; grassy, kind 25c lower; prime heavy steers at \$14.50@15.25; best shipping steers at \$13.50@14.50; medium shipping steers \$12.50@13; best native yearlings, 950 to 1000 pounds \$13@13.75; light native yearlings, good quality \$12@13; best handy steers \$12@13; fair to good kind \$11.50@12; handy steers and heifers, mixed \$11@12; western heifers \$11.50@12; best fat cows \$11@11.50; butchering cows \$8.50@9.50; cutters \$7@8.50; canners \$5@6; fancy bulls \$10.50@11; butchering bulls \$9@10; common bulls \$7@8; best feeders, 900 to 1000 lbs \$10.50@11.50; medium feeders \$9.50@10; stockers \$9@10; light common \$7.50@8; best milkers and springers \$10@15; mediums at \$75@90.

Hogs.

Receipts five cars; market higher; heavy and yorkers \$22.65@22.75; pigs \$20.75@21.25.

Sheep and Lambs.

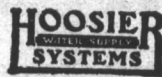
Receipts two cars. Steady. Spring lambs \$18@18.50; yearlings \$12@14.50; wethers \$9@9.50; ewes \$7.50@8.50.

Calves.

Steady with Monday; tops \$19.50; fair to good \$17.50@18.50; grassers at \$5@8.

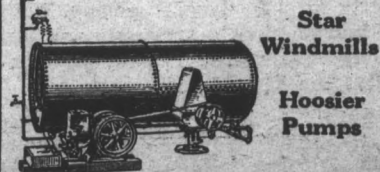
Water for Every Household Need

EVERY farm home needs an ample supply of water. To depend upon a hand pump often located some distance from the house is inconvenient. Running water, under pressure, as provided by



is the modern convenience which has banished the drudgery of hand pumping. Hoosier Systems use any kind of power, windmill, gasoline engine or electric motor, and are suitable for deep or shallow well pumping. Bulletin F describes our complete line of Hoosier Systems. This bulletin sent on receipt of your request.

Flint & Walling Mfg. Co.
Dept. C, Kendallville, Indiana



NEW YORK PRODUCE MARKET.

Butter.—The market started out at the beginning of the week with considerable activity. Many speculators who had been holding off for better prices suddenly decided that it was time to lay in stocks if they were to get June-made butter. In addition, the market was full of rumors of export inquiry, which had the effect of starting local buying. Trade was active until Wednesday afternoon, when a weakness developed and since that time there has been no activity. During the first part of the week the price advanced one cent but that gain has been lost and the market closed on Friday with quotations practically as at the close last week, or as follows: Extras 51½¢; 51½¢; higher scoring than extras 52¢; 52½¢; firsts 50¢; 51¢; seconds 48¢; 49½¢ per pound.

Cheese.—The cheese market has strengthened during the week. That has been due to more active speculative buying in all sections. Some export buying is reported, although it is having little effect on the market. Production is about at the maximum at present. It is expected that as soon as speculators lay in enough June cheese to supply their wants, the price will fall. Quotations are as follows: Common to fair 29¢; 30½¢; average run 31¢; 31½¢; specials 32¢; 32½¢.

Eggs.—The egg market has been irregular during the week. Receipts were light at the outset and values advanced. About Wednesday, receipts became heavy and the market weakened. On Thursday a good demand developed and since that time the market has been firm. Production is shrinking but yet remains quite large. Quotations are as follows: Firsts 45¢; 47¢; extra firsts 48¢; 50¢; extras at 51¢; 52¢.

Poultry.—Receipts have been heavy and demand inactive but in spite of those conditions the price has advanced. Large shipments are going to seaside and mountain resorts. Quotations are as follows: Broilers 50¢; 55¢; fowls 35¢; old roosters 24¢; ducks at 30¢; geese 20¢.

Veterinary.

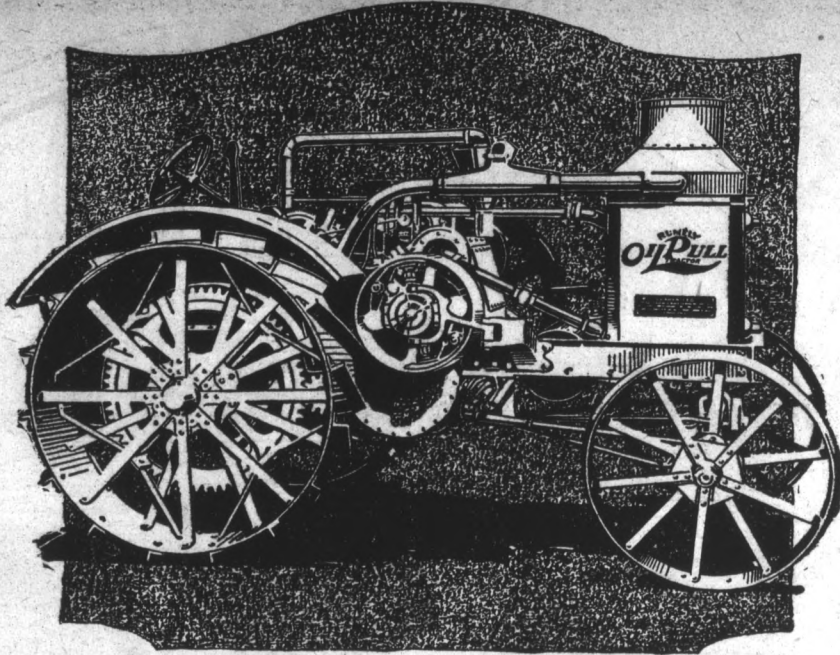
CONDUCTED BY DR. W. C. FAIR.

Infected Udder.—I have a six-year-old Jersey cow which I purchased February 1. She freshened 11 days later, and since then her udder has occasionally caked, but these attacks last only 24 hours. When the udder cakes the milk has clots in it. I would like to know if there is a remedy for her ailment. H. B. D., Fairgrove, Mich.—When udder congests, apply one part of fluid extract of phytolacca and six parts of sweet oil three times a day; and give her ½ oz. of fluid extract of phytolacca at a dose twice a day, until caking leaves. If her bowels are constipated give her 1 lb. epsom salts in three pints of water as a drench, one dose only. Gently hand-rub caked portion of udder.

Garget.—We have a fine Guernsey heifer that came fresh on February 1. She developed a very large bag and in spite of my efforts it caked and finally developed gland trouble. She seemingly recovered. I bred her May 9, and again the thirtieth. She is uneasy, holds tail up and out, back arched and is inclined to hold up her milk. A. W. de R., Berlamont, Mich.—Give her 1 dr. of acetate of potash at a dose in feed or drinking water three times a day. If the milk is on bad terms with the cow she is likely to hold up some of her milk. Rough milking is a common cause, excitement is another cause. Kindness is perhaps the best remedy.

Heat Prostration.—I would like to know what ails my eight-year-old mare. When hot weather sets in she puffs badly, but does not show any other symptom of sickness. I am anxious to know what to give her. J. D.—Traverse City, Mich.—When working her during hot weather, give her 1 oz. of sweet spirits of nitre in drinking water or as a drench in 15 times water. Give her three doses daily.

Snagg Foot.—My five-year-old horse recently snagged foot, wounding upper part of foot, since then the hoof grows uneven at the heel and bunch has to be cut off. This crack in hoof runs crossways and it must pain horse for he sometimes limps. Have applied wool-fat. I drive horse on road. N. W. W., Coleman, Mich.—A skillful horseshoer is the best man to consult, for about all that can be done is to keep hoof properly trimmed and kept in its normal shape. Occasionally, paint coronet with tincture iodine.



The
New
12-20
OIL PULL
TRACTOR

Cheapest in Cost per Year of Service

On what basis are you going to buy your tractor—by the dollar of cost or by the years of service?

Advance-Rumely is one tractor manufacturer who insists upon putting quality first. By quality we mean rugged, dependable construction, surplus power, real fuel economy and all around service.

In building the new 12-20 OilPull, Advance-Rumely refused to put out a cheap, lightly constructed tractor. We know and you know that durability can't be combined with cheap, light construction. And if a tractor won't "stand the gaff" nothing else about it counts for much.

We have embodied the proved OilPull ruggedness and substantial construction in this small, light weight 12-20. And by light weight we mean right weight—the proper weight to give long lasting, year after year, dependable service.

Like all OilPull tractors, the 12-20 is backed by a written guarantee to burn successfully all grades of kerosene under all conditions, at all loads to its full rated brake horsepower.

And just as Advance-Rumely guarantees its OilPull tractor as a cheap fuel burner, it insists upon giving the purchaser a surplus of power. The 12-20 rating is based upon only 80 per cent of its maximum power efficiency—a 20 per cent overload capacity when you need it. This means further insurance of long life—a tractor that will be doing the same good work five years hence as in its first season.

The 12-20 is oil-cooled—no evaporation and the radiator can't freeze. The circulating system is always open and oil preserves the metal parts. The OilPull cooling system keeps the motor at the right temperature at all loads—the harder the OilPull works, the cooler it runs.

On the 12-20 the belt pulley is on the right hand side—up within full view of the operator. The 12-20 can be lined up with a belt machine, backed into the belt and the belt started and stopped from the platform. The belt pulley is driven direct off the crankshaft—no loss of power.

The 12-20 OilPull will pull three 14-inch bottoms under ordinary conditions and a proportionate number of disc plows. It will operate a 22-inch thrasher fully equipped and economically handle all other power jobs, drawbar or belt.

To safeguard the customer's best interests Advance-Rumely maintains 27 branch offices and warehouses, each equipped to give immediate service in machinery, parts and expert help.

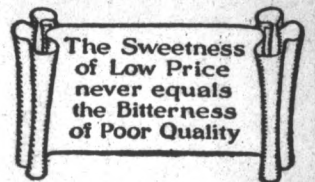
The wise farmer will buy a tractor by the year—not by the dollar. Just as the OilPull will plow an acre at lower cost than any tractor built, its cost measured in years of service makes it the cheapest tractor obtainable.

Ask for the catalog describing the new 12-20.

ADVANCE-RUMELY THRESHER CO., Inc.

La Porte, Indiana

Battle Creek, Mich.



Fuel—Guaranteed to burn kerosene successfully under all conditions.

Cooling—Oil cooled—no evaporation—non-freezing.

Motor—Heavy duty, 2 cylinder 6 in. x 8 in.—560 R. P. M.

Crankshaft—Built to U. S. naval specifications.

Frams—Hot riveted steel members—no bends—no splices.

Transmission—Cut steel gears—enclosed and running in oil.

Bearings—Hyatt roller bearings in transmission and rear axle.

Governor—Fly ball throttling type—automatic speed regulation.

Belt Pulley—19 inch diameter—running directly off crankshaft—no intermediate gears.

Lubrication—Force feed and splash.

Speeds—Two forward—one reverse.

Drawbar—Adjustable spring drawbar.



ADVANCE-RUMELY

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Buy a late model 1919 Galloway Separator on this special limited sale and save enough to buy other implements you need. Note these new low prices below—good only until July 15th. Buy your Galloway Separator now and take advantage of this great cut price offer. Remember, this sale applies to all the four good sizes on the famous Galloway Sanitary Separator that is unsurpassed for close skimming, easy running, easy washing, durability, simplicity, and all-round efficiency.

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Over 300,000 satisfied users. Separators shipped from points near you to save you freight. Write today—order direct from this ad.

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DEATH TO HEAVES! NEWTON'S

HEAVE, COUGH, DISTRESS AND INDIGESTION COMPOUND Cures Heaves by correcting the cause—Indigestion. Prevents Colic, Staggers, etc. Best Conditioner and Worm Expeller. 27 years sale. Three large cans guaranteed to cure Heaves or money refunded. The 1st or 2nd can often cures. \$1.15 per can (this includes 60¢ war tax) at dealers' or prepaid by parcel post. Booklet free.

THE NEWTON REMEDY COMPANY, Toledo, Ohio

MINERAL HEAVE COMPOUND CURES HEAVES

Booklet Free
\$3 Package guaranteed to give satisfaction or money back. \$1 Package sufficient for ordinary cases.

MINERAL HEAVE REMEDY CO., 463 Fourth Ave., Pittsburg, Pa.

CULOTTA & JULL Eastern Market, Detroit, Mich.

Headquarters for fancy fruits and produce. We make a specialty of berries, cherries, peaches, pears, asparagus, celery, etc., and need your shipments to supply our trade. We want your shipments of eggs, veal and poultry. We handle only on commission and give you the benefit of our market, large or small shipments have our every care and attention.

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Mr. POULTRY FARMER:

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Remember! We guarantee your satisfaction with every shipment.

EGGS We will pay \$.50 per dozen delivered here for strictly fancy new laid eggs. Shipments via express direct from farmers. This price good for one week ending July 12th. Watch our price each week.

AMERICAN BUTTER & CHEESE CO. Detroit, Michigan.

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

FOR SALE: Three months old light gray pedigreed Flemish Giant bucks \$5.00 apiece. They will increase the size of your stock.

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50 Belgian Hares, all ages, good, utility stock. Some selected breeders, cheap.

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Flemish Giant Rabbits, dark steel black. Grays 2 months old, \$3.00 & \$2.00 each. Pedigreed stock.

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Rabbits For Sale. Belgian hares, and Flemish giants. Very cheap.

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