

KANSAS FARMER

For the improvement



of the Farm and Home

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SWEET CLOVER LOT WINS

Brown Alfalfa Hay Equals Hay Cured in Good Condition

THE once despised weed, sweet clover, has become a valuable feed crop. In the cattle feeding test at the Kansas Experiment Station the lot fed hay made from sweet clover was ahead in point of profit on the day the cattlemen met in Manhattan. Prof. W. A. Cochel explained the details of the experiment and presented the figures giving results. He stated that the calves used were the first crop from a group of heifers owned by the station. These heifers had been purchased as calves, costing at weaning time \$30 a head. At the time the calves used in this test were dropped they had cost \$70.97 each and weighed 928 pounds.

During the summer of 1916 these calves were on very short pasture, hence the average weight of 340 pounds is decidedly below what is usually expected. The fire which destroyed the feeding sheds early in the spring caused a decided setback, so that the average gains are not up to those which are usually made.

The table on page four is self-explanatory. During the first three months of the feeding period the grain ration was limited to the same quantity in each lot. After this each group was fed according to appetite. Cottonseed meal was fed during the first three months and linseed meal during the last three months of the experiment. Feeds are charged at the average market prices during the time the experiment was in progress. As a considerable quantity of the feed was produced on the college farm and a still larger quantity pur-

chased before the advance in values, the profits indicated represent less than half the actual profits to the institution.

The most rapid gains were made in the lot which was fed on ground barley. There was little difference either in the cost of gain or in the profits secured from feeding alfalfa hay that is cured in good condition as compared with the ordinary brown or stack-burned alfalfa.

Lot 28 fed on sweet clover hay returned the greatest profit of any of the lots. This was due to the fact that the sweet clover used was of the finest quality and cured in excellent condition, being as good sweet clover hay as it is possible to obtain. The alfalfa would grade as standard alfalfa on the market.

The addition of silage to the rations which were used proved to be advantageous in increasing the profits and the finish of the cattle.

Black alfalfa used in the last lot was stacked immediately after the mower, the outside of the stack being green, then a strip of moldy material followed by very brown alfalfa almost in the form of silage, while the center of the stack was completely charred. This feed is charged at \$5 a ton because of the large amount of moisture it contained. The results indicate that it is not a profitable method of curing alfalfa for feeding to beef cattle.

This experiment continued for six months, a sufficient period of time to determine the comparative value of feeds, which was the purpose of the experiment. The yearlings, however, were

not finished, but will require from six to eight weeks more of full feeding in order to make them prime.

No credit is given to the various lots for the amount of pork produced in connection with the feeding of the cattle, although hogs were in the lots at all times to prevent waste. No credit is given to the value of the manure which was produced in connection with the feeding operations. These two sources of profit are over and above those indicated in the table.

In this experiment the average profit secured by the farmer in the growing of crops is charged against the cattle. The feeder's profit is the only one under consideration. In practice it is found that the chief profit which comes to the cattle feeder who is also a land owner is the increase in the yield of crops and the maintenance of the

land. The calf's share when they pay for the feed consumed. Any additional profit secured is due to the ability of the feeder and to his judgment in making use of favorable opportunities for the purchase of feed and putting into practice the best information which he can secure in the growing of crops for cattle-feeding purposes.

Silage from Corn Fodder

A question came up at the recent auxiliary meeting of the Kansas State Dairy Association as to whether silage could be made profitably from corn after the

grain had been harvested. The idea seemed to be that when corn is so high in price and so much in demand for human food, some way should be worked out whereby the forage part of the crop could be utilized as silage and the grain marketed separately.

No one should expect to take from a silo more feed value than was put into it, and silage from which the grain had been removed would not be as rich in feeding nutrients as silage from a crop cut at the proper time and containing three or four bushels of grain to the ton. The silo, however, is essentially a means of getting a larger return from the forage part of the crop, and under present price conditions this is a pertinent question.

Some cattlemen who have been short on roughage have found that they can make dry fodder go much farther by refilling their silos during the winter with shocked corn, supplying enough water as the cut fodder runs into the silo to make it pack solidly. Prof. O. E. Reed stated at the meeting referred to above that experiments were being conducted to determine the practicability of harvesting the ears of corn and then storing the forage part of the crop as silage. Under present conditions it is quite possible that this may be a desirable thing to do.

We will keep in touch with the results of the experimental work and report to our readers later in the season on how best to handle the crop if it is found feasible to make silage from corn after the ears have been removed.



CATTLE ON ADAMS & ROBERTS' RANCH, PLAINS, KANSAS.—MOTHERS OF STEERS FED PAST SEASON AT KANSAS EXPERIMENT STATION PURCHASED AS CALVES FROM THIS HERD

Your Ford Car



Why it should be lubricated with Gargoyle Mobiloil "E"

In lubricating Ford Cars, there are eight vital considerations. Each one must be met if the engine is to deliver its full power and be free from undue heat and wear.

These factors are:

(1) **Speed, Bore and Stroke.** Under the hood you have a small, high-speed engine. The Ford speed conditions demand oil of a different body from that demanded by low-speed conditions. The body of Gargoyle Mobiloil "E" meets this Ford need with scientific exactness.

(2) **Piston Clearance.** The Ford pistons are closely fitted. Each piston has two upper rings and one lower ring and an oil groove. The lower ring tends to prevent a surplus of oil working into the combustion chamber, while the oil groove insures proper lubrication of the wrist-pin. Engineering tests show that the body of Gargoyle Mobiloil "E" forms the correct film for the Ford piston clearance.

(3) **Lubricating System.** The oil is supplied to the forward end of the crank case and flows back to the fly wheel compartment which acts as an oil reservoir, the lower portion of the fly-wheel being submerged below the oil level.

The fly-wheel in revolving, picks up the oil which is thrown by the centrifugal force of the revolving fly-wheel into the catch-basin, from where it is led by $\frac{1}{4}$ " copper piping to the timing gears and then to the oil splash trough under the front cylinder.

From the front splash trough the oil overflows into the second splash trough; from the second splash trough into the third splash trough. From the third splash trough the oil returns to the oil reservoir in the fly-wheel compartment, whence it is again circulated.

Gargoyle Mobiloil "E" has the scientifically correct body to properly distribute to all friction surfaces.

(4) **Cooling.** The Ford engine is water-cooled by the thermosiphon system, and is equipped with two forward speeds. The con-

tinued use of low gear often causes over-heating. For full protection, oil should be used which distributes freely to the heated frictional surfaces, as Gargoyle Mobiloil "E" does.

(5) **Ignition.** The Ford system of ignition is by low-tension magneto, located in the fly-wheel, employing a four-unit coil of the vibrator type. Gargoyle Mobiloil "E" will burn cleanly from ignition points—a most important consideration.

(6) **Bearings.** The Ford bearings are of the two-bolt type, brass with Babbitt lining, closely fitted. The correct body of Gargoyle Mobiloil "E" enables it to properly reach all parts of the closely-fitted bearings.

(7) **Carbon Deposit.** To insure the least carbon under all conditions, an oil should be used whose only deposit will be of a dry, non-adhesive character—easily and naturally expelled through the exhaust. Gargoyle Mobiloil "E", if the proper level is maintained, will deposit little, if any, carbon in a Ford engine.

(8) **Extreme Weather Conditions.** On hot Summer days you will sometimes see Fords running under over-heated conditions, often due to faulty lubrication. Ford owners, who use Gargoyle Mobiloil "E" are free from this trouble, owing to the ability of the oil to absorb and radiate heat. On cold Winter days oil is required of a fluidity which enables it to meet low-temperature conditions and permit ease in cranking the engine. Gargoyle Mobiloil "E" completely fills these requirements.

We guarantee Gargoyle Mobiloil "E" to be fully up to the high standard demanded of all Gargoyle products. It easily reaches all friction surfaces and gives thorough protection after distribution.



Mobiloils

A grade for each type of motor

In buying Gargoyle Mobiloil "E" from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container. If the dealer has not Gargoyle Mobiloil "E", kindly write our nearest branch, giving dealer's name and address.

YOUR TRACTOR

also may be lubricated efficiently with Gargoyle Mobiloils. On request we will mail you a separate Chart specifying the correct grade for each make and model of tractor.

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Specialists in the manufacture of high-grade lubricants for every class of machinery. Obtainable everywhere in the world.

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The Farm Implement Situation

OUR government is making strong appeals along the line of keeping our food production up to the maximum. The American farmer has been able to take the important place he holds in food production because of his large use of machinery of all kinds. The implement and machinery business has a most vital relation to agriculture. If anything should happen to seriously reduce the supply of agricultural machinery available it would certainly tend to reduce our capacity for food production.

The National Implement and Vehicle Association, which is an organization of the manufacturers of farm operating equipment, is endeavoring to impress upon the authorities at Washington the importance of permitting the companies manufacturing such equipment to have ample supplies of raw materials. This apparently is not an instance of an industry asking to be preferred over another, for these manufacturers have already offered their plants to the Government to be used as directed. It would seem in the present emergency that they can render a larger service by being permitted to turn out the tools required for agricultural production instead of using their plants entirely for the making of munitions or other war equipment.

The following extracts from a statement recently issued by the above mentioned organization gives some light on the situation and should be of much more than passing interest to those engaged in crop production.

The statement is made that since the Government has furnished figures to show what our food reserves are, in the raw state, as coming from the farm, it has had no difficulty in securing co-operation from all classes in urging everywhere increased planting and making it clear that labor in connection with agriculture at this time is as truly a patriotic service as going to the battle-front.

Strange as it may seem, however, only passing interest has been taken in the supply and efficiency of tools and equipment in the hands of the farmers at this time with which the work must be done. The farm equipment industry, which is one of the largest single lines of manufacture in the country, has for years kept pace with the demand, and competition has so quickened the wits of these manufacturers that today this industry leads the world in producing not only the greatest volume but the most labor-saving machinery found anywhere throughout the world.

It is now nearly three years since the war began, and by investigation it has been found that in many instances the farmer's operating equipment is more nearly worn out than ever before, and much of that which is still serviceable is of a character that does not economize in labor as do the more modern and up-to-date kinds. Our Allies passed through an experience which we could profit by, for in response to the alarm of war, the demand for munitions seemed paramount, and it was nearly a year before they realized that the food problem was the greatest they had to contend with and they then began a hasty scramble to rearrange their plans and systems to meet it. The time lost by this delay has not only proven serious but undoubtedly would have been vital if we had not joined with them in the struggle.

In order to do our part satisfactorily we shall have to move rapidly, for agriculture, unlike manufacturing, is seasonal and, as with time and tide, waits for no man. The manufacturers of implements and farm machinery have suffered serious delays in securing materials during the past three years, owing to the congestion of orders at the mills and in transportation, therefore the production has been below normal. This year these delays have been greater than ever before and had it not been for some of the railroads placing agricultural implements on the preferred list where embargoes existed, considerable of the country would have been without adequate equipment to put in this year's crop.

It is fortunate that the manufacturers have had the capacity to meet the demands upon them up to this time, but they are now confronted with a most serious condition in looking forward to the manufacture of implements for use

this fall and next spring, because of our Government requiring extraordinary amounts of material for war purposes, which naturally must be given precedence over all ordinary demands.

Plowing in the Southwest for fall will follow the June wheat harvest and will gradually progress with the season to all other territory. Consequently the manufacturer must order his materials now and have assurance of deliveries, or it will be impossible for him to plan his production intelligently. If tillage implements are not provided when needed, the passing of the season renders them useless until the proper time again arrives and in this respect the situation with these manufacturers is different than that of most other lines.

Efforts have been made to bring these important facts before those in whose hands rests the matter of determining the proper apportionment of materials to those industries which should have preference for the protection of our food supplies and the welfare of the people in general. It is hoped that the seriousness of the situation will be so realized that early action will be taken to prefer the necessary materials and labor used in the construction of labor-saving equipment, and further that the shipments of this material, not only in the raw state but when completed, will be permitted to move to its destination quickly and without any unnecessary delay.

It is hoped, therefore, that the seriousness of the situation may arouse general interest in this contingency and that all who are disposed to do their bit may see here an opportunity for rendering help. Our farmers, our business men, our agricultural colleges, and all organizations who realize the importance of increasing food supplies, may with propriety write to our constituted authorities relative to this matter, until by reason of volume of interest, steps may be taken which will provide the desired relief.

A short time since we did not consider that this was our war, but today it is generally realized as our greatest responsibility and that we must move and move quickly.

Kerosene for Motor

E. R. N., Marion County, writes as follows: "I have been told that kerosene will not work efficiently in a high speed tractor motor. The tractor which I have in mind has a speed of about 1,800 revolutions per minute. Would you advise one to buy a tractor with such a motor? Also is the splash system of lubrication sufficient to adequately lubricate a kerosene engine on a tractor either at low or high speed?"

In reply to this inquiry, W. H. Sanders, instructor in farm motors at the Agricultural College, states that he has observed engines operating perfectly on kerosene at a speed of a thousand revolutions per minute. He says: "Most men fail in their efforts to operate engines on kerosene because they do not know how. With proper carburetion, an engine designed to meet kerosene conditions should operate at the speed mentioned."

"It is better to use some additional help to insure proper lubrication. Most engines using kerosene do not burn all the fuel. The residue thins the lubricating oil on the walls of the cylinder and eventually finds its way to the crank case, thinning the oil there and rendering it useless. It is a good plan to remove all such oil at regular intervals, and to put in a fresh supply."

A Tip to Auto Owners

Automobile owners should allow as much cold air as possible to enter the carburetor nowadays. In the winter time it was necessary to draw the air around the exhaust pipe and also have the carburetor bowl heated. It is now economy either to allow cold air to enter the carburetor or to remove the carburetor heater. This will give the engine more power because the cool gas will cause a higher pressure in the cylinder when it is ignited.

Cylinder oil for the gas engine must be of the best quality and highest grade to get the best results from the tractor. A cheap low-grade oil will cause frequent stops and delays and will seriously interfere with the efficiency of the engine.

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HORSES FOR THE ARMY

In our issue of June 2 we called attention to the plans of the Government for buying the horses needed for the army. The country had been divided into zones and dealers had been asked to submit bids for furnishing horses of the different classes. These bids were to have been opened June 7. The following animals had been asked for in the first proposal: Twenty-one hundred cavalry horses at \$180 a head; 1,500 light artillery horses at \$195 a head; 924 siege artillery horses at \$235 a head; 364 wheel mules at \$235 a head; 364 lead mules at \$190 a head; 144 pack and riding mules at \$165 a head.

Without giving any reasons, the War Department suddenly cancelled these orders. The plan had been criticised by some horse dealers who claimed that it would not work. It met with more favor from producers because the prices to be paid were openly stated.

The sudden change of plans leads to considerable speculation as to just how the army will obtain the horses and mules required. In spite of the remarkable development of the tractor and its wide use in war, horses and mules are required in large numbers. Horsemen all over the country will be much interested in the report brought from France by Col. Henry J. Reilly, a regular army officer who went to France in February for the Chicago Tribune and while there gave special attention to the place horses were taking in modern warfare. Colonel Reilly has recently been made colonel of the First Regiment of Illinois Cavalry. In his report he says:

"There seems to be a rapidly increasing opinion that the day of the horse in war has passed. The nearly three years of warfare in Europe has shown this to be an entirely erroneous idea. On the eastern, or Russian-Roumanian front, where there are few good roads—in other words where the road conditions are somewhat similar to those which ordinarily obtain in the United States—the horse has not only held his own for the mounted service such as the cavalry and artillery, but also for supply purposes. Again and again the armies operating on this front have found the arrival of supplies and ammunition dependent upon the use of horse transport. Even on the western front where the road system is probably the best in the world, mechanical traction has not been able to displace the horse. In general, it might be said that the line between mechanical and horse traction on a battlefield is the extreme limit of the enemies' artillery fire when any heavy action is going on. The horse is used on the battlefield and the mechanical traction in rear of it. Of course during calm periods, mechanical traction is used along the rear part of the battlefield. There are various reasons for this division. Probably the main one is that batteries frequently must be placed and supplied in positions some distance from a road. Often the country to be traversed is so rough that a tractor cannot get over it. If the army is operating on conquered ground, this ground generally is so cut up with old trenches and shell holes that horse traction only is practicable. Frequently the mud is so deep that mechanical traction is helpless. In many cases the situation is such that no wheeled carriages of any kind can move. In such cases pack animals have to be used.

"So well are these conditions recognized that in spite of the tremendous weights of heavy artillery material and the slowness and difficulty of moving them by horse traction, it is considered

that only half the heavy batteries should have mechanical traction. The remainder are horsed and thus the means is always available to move the batteries, no matter what the difficulties. Therefore, in general it may be said that an army must still have animals for all its cavalry, the usefulness of which is far from disappearing; it must have horses for all its light field artillery, half its heavy field artillery, and all its regimental and divisional supply trains. Incidentally every regiment of infantry must have several hundred of horses and mules. The more the question is examined, the more two facts stand out. The first is that certain work in modern warfare can only be done by horses. The second is that the number of horses needed by armies which are counted by millions, must be counted by the hundred thousands."

KANSAS BREEDERS' DIRECTORY

The Kansas State Board of Agriculture is preparing a complete directory of the breeders of pure-bred live stock in the state. Last year the preliminary steps were taken toward getting the necessary information. The assessors turned in with their reports the number and kind of pure-bred stock kept by every man they assessed. The names of 10,000 breeders have been obtained in this way. In order to verify this information and give opportunity for the making of such corrections as may be necessary, return postal cards have been sent to all these breeders.

There are doubtless some breeders in the state who have not received cards. We hope that every breeder will take special pains to see that his name gets on this list. A complete breeders' directory will be greatly appreciated by all interested in improved live stock. We are glad our State Board of Agriculture has seen fit to take up this piece of constructive work. If you have not received a card, send in a report at once to Secretary J. C. Mohler, Topeka, Kansas, giving the number, sex, and breed of registered animals you own.

CURING ALFALFA HAY

It takes dry air and sunshine to cure alfalfa hay properly. When cut a ton of green alfalfa contains in the neighborhood of fifteen hundred pounds of water. Before it can be stored as hay, fully four-fifths of this must be evaporated. While it takes the right kind of weather to cure hay, it is well to understand some of the principles which govern the rapid removal of water from the stems and leaves of the plant.

When the plants are alive and growing they give off moisture constantly through the pores of the leaves. When the plants are cut this process continues, the water in the plant passing off through the pores of the leaves. The stems of alfalfa contain much more water than the leaves, but because they do not have pores they cannot give off this moisture rapidly except by passing it through the pores of the leaves. One might think that alfalfa would cure more quickly by letting it lie exposed in the swath to hot sunshine. The leaves, however, cease to pump the moisture from the stems when they become dry and brittle. Exposure to the sun in the swath may dry the leaves quickly but leave the stems full of moisture. After the leaves become dry and brittle the moisture in the stems can get out very slowly and it is not at all uncommon to have hay apparently cured but having so much juice in the stems that it can

be wrung out by twisting a wisp of hay in the hands.

This may seem rather theoretical, but in spite of the uncertainties of the weather, it is a good plan to have a system in hay making and work to it as nearly as possible. A full knowledge of the theory of evaporation will help in working out a plan. The important point in this plan is to try to keep the leaves in condition to help in removing moisture from the stems as long as possible. Curing in the windrow furthers this object. In a light, fluffy windrow such as is left by a side-delivery rake, alfalfa will cure more rapidly than if left flat in the swath. This method of curing also helps to retain the leaves, which are the most valuable part of the hay.

Where a large amount of alfalfa must be handled, it is almost necessary to employ all the labor-saving machinery possible such as hay loaders, slings, forks, stackers, etc.

Good hay weather is none too plentiful and it is always important to have the work progress as rapidly as possible when conditions are favorable. With plenty of the right kind of equipment, hay making can be pushed along when the weather is right. It should always be remembered that hay is more apt to be injured by moisture that is on it than moisture that is in it. It should not be raked or stacked when there is any dew or rain on it.

THE COLLEGE COMMENCEMENT

The Agricultural College closes another year of most successful work next week. Thursday, June 21, is Commencement Day. The commencement address will be given by Dr. W. O. Thompson, for more than twenty years president of the Ohio State University. For the past eight years he has been president of Miami University. Doctor Thompson is widely known as an educator and speaker. The Right Reverend James Wise, Bishop of Kansas, Episcopal Church, will deliver the baccalaureate sermon on Sunday, June 17. His subject will be "The Foundations of Life."

Probably for the first time in the history of the institution the military band will be absent Commencement week. It is stated in the daily papers that this band has been selected for service in France at the base hospitals. It left for Philadelphia this week. While en route it led a marine recruiting campaign on the streets of St. Louis. The band consists of twenty-eight members, every one a native-born Kansan. It will be the first contingent of military musicians to reach France from the United States. This fine musical organization has always been a most important feature of the Commencement exercises and will be greatly missed this year.

On every hand dairymen and other producers of live stock and live stock products are asking how to get around the excessively high cost of feeds of all kinds. It seems to us that there is just one answer to this question, and that is to build a silo. If there ever was a time when all the crops grown should be preserved so as to be consumed with maximum results, it is the present. There is not a farmer in Kansas who cannot grow a silage crop of some kind. The sorghums are as well adapted to making silage as corn, and in the western part of our state pit silos can be made by those who cannot afford to put up a more expensive kind. It is a part of preparedness to make provision to feed all our stock as cheaply as possible next winter.

NEW BOARD NAMED

Dr. Wilbur N. Mason, president of Baker University; E. W. Hoch, former governor of Kansas, and Charles W. Greene, former mayor of Kansas City, Kansas, have been appointed as members of the new Board of Administration by Governor Capper. The governor of the state is an ex-officio member of this board. The law creating this board was passed at the last session of our legislature. It will have the largest responsibilities of any board ever named in the state. On July 1 it will take charge of the work done by the present Board of Administration, the Board of Control, and the Board of Corrections. All the educational, penal, and charitable institutions of the state will be under its supervision. The board will employ a business manager or purchasing agent for the various institutions.

Doctor Mason has been president of Baker University for the past six years and has become widely and favorably known as an educator. He holds degrees from a number of the leading universities of the country. Ex-Governor Hoch is one of the best known men in Kansas. He has lived in the state more than forty years, most of which time he has been editor and publisher of the Marion Record. He has twice been a member of the legislature and from 1905 to 1909 was governor of Kansas. He was appointed on the Board of Administration by Governor Hodges, and was reappointed by Governor Capper. He has thus served on this board from the time of its establishment until it has been superseded by the present board. Mr. Greene is one of the successful business men of Kansas City. He has always been active in promoting the best interests of the city and for several years was its mayor.

How to Make Prime Hay is the subject of a twenty-page bulletin just issued by the Emerson-Brantingham Company, of Rockport, Illinois. This bulletin is attractively illustrated and gives the most up-to-date methods of handling hay. One of the big problems of the farm in Kansas is to handle the successive crops of alfalfa. Haying on the Kansas alfalfa farm is an almost continuous performance. The work must proceed rapidly and large use must be made of modern labor-saving machinery. Prof. A. M. Ten Eyck, who is the author of this treatise on hay making, will be remembered for his work as head of the Agronomy Department of our Agricultural College for several years and as superintendent of the Fort Hays Branch Experiment Station. This bulletin will be sent to any farmer sufficiently interested to write for it.

GRADUATING CLASS BUYS BONDS

Instead of placing a class memorial on the campus as has been the practice for several years, the class graduating from the Kansas State Agricultural College next week has spent \$300 in the purchase of Liberty Loan Bonds. This action was taken at a most enthusiastic class meeting and is substantial evidence of the patriotism of these young people who go out from this institution this year.

This bond purchase does not mean that the class will not have a permanent memorial. When normal conditions have been restored it is their purpose to sell the bonds and use the proceeds in purchasing some suitable memorial to be placed on the campus. Some sort of temporary memorial—possibly a bronze or copper plate—will be placed in Anderson Hall.

FINANCING THE CATTLEMAN

Logical Place to Procure Money for Handling Cattle is From Local Bank

By P. W. GOEBEL, President
American Bankers' Association

Before Annual Cattlemen's Meeting
Kansas Experiment Station

TO MY mind cattle raising is the greatest industry in the country and affords the best security on which to base paper if it is done rightly and by the right kind of cattlemen.

In order to make the financing of the cattlemen legitimate and successful, you must be able to analyze your operations the same as is done in any other line of business. In order to do that, you must get away from commission agencies in making loans. I am not objecting to the commission on buying and selling cattle, but it ought not to enter into the consideration of making a loan. A cattle loan ought to be made by people or banks who know the cattle business and whose capital is large enough so that they can carry the loan to the maturity of the stock and not merely to the maturity of the loan. There is no trouble about financing the cattleman who understands his business, who has a reasonable margin in his business, and who has demonstrated that he knows how to handle cattle. There is a great difference in cattlemen. There are those who spring up over night. It is too complicated a business to go into in that way.

CONSIDERATIONS IN PLACING LOAN

The first thing the bank is going to consider in placing a loan is the question of honesty. The second is the question of ability to handle cattle so as to get the best results from every pound of feed that is put into them. The next will be consideration of the economy with which the applicant for credit conducts his business, and the last perhaps the amount of property he has outside of the stuff upon which the loan is to be based. You cannot expect to get the best rate of interest and have the assurance that the loan will be carried to the maturity of the stock rather than the maturity of the loan unless you can demonstrate that you are all right in the above mentioned particulars. The time has gone by when men who know nothing of the handling of cattle could be persuaded by commission men to go into the cattle business and depend upon the market next fall to pay. Once in a while that works, but more often it does not work.

Cattlemen are themselves responsible for some of their troubles.

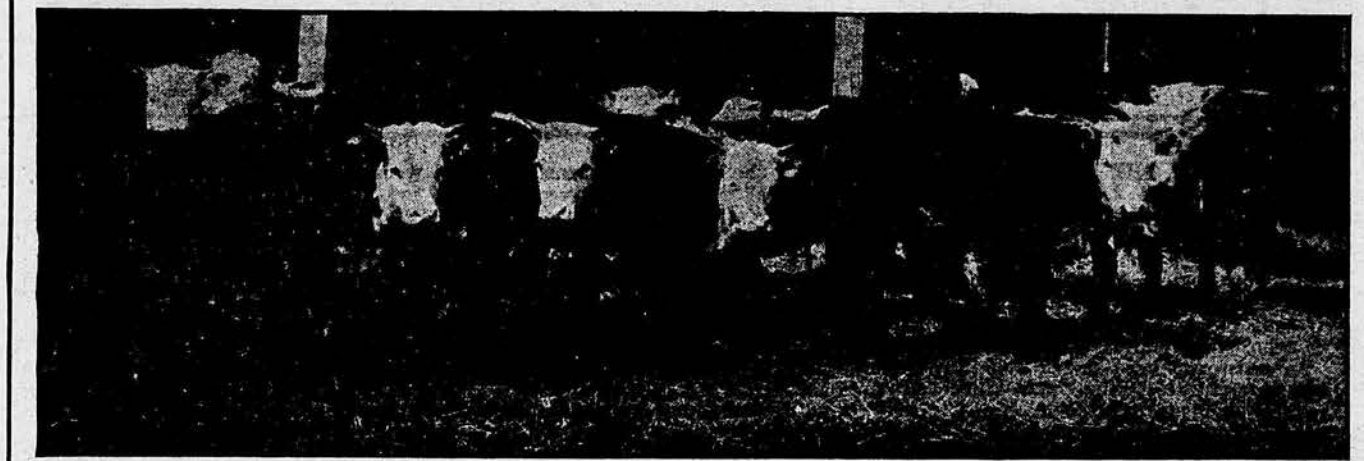
Competition among buyers is not as keen as it is among you cattlemen when you come to buy your stockers and feeders. I believe in competition, but I do not believe in reckless or destructive competition.

I have been in the banking business for thirty-six years. I have made a specialty of loaning money to cattlemen and have loaned a good many million dollars to them, but I have never lost a dollar when I came in direct contact with the man using the money. I have loaned a lot through bankers and brokers. The amount lost where I took paper from local bankers that I knew personally has been small, so small as to be almost negligible. I have lost considerable money, however, on paper I took through brokerage firms, principally because this paper is usually of men who could not get security in their own home towns.

Loans to cattlemen should be made through the local bank or through a large central bank that is big enough to keep local inspectors in the territory in which they are loaning money. Cattle are the best security in the world. The Federal Reserve banks give special consideration to cattle paper. They are allowed to rediscount all agricultural paper on a six months basis. Commercial paper is restricted to three months.

INDUSTRY TOO MUCH IN SPOTS

The cattle industry of this state is carried on too much in spots. In nearly



THESE HEIFER CALVES FED AT KANSAS EXPERIMENT STATION WINTER OF 1913-'14.—THE RATION WAS SILAGE AND STRAW AND A POUND DAILY PER HEAD OF COTTONSEED MEAL.—AFTER DEVELOPMENT AT FORT HAYS BRANCH STATION THEY BECAME DAMS OF STEERS FED THE PAST WINTER AT MANHATTAN

every township in the state there are a few men who are handling cattle. These men buy the stock produced in their local communities and feed it out. The business becomes to a certain extent speculative. What we need to make the cattle business a thorough success is to have enough cattle on every quarter section to consume the feed raised there. It is also highly desirable that every man mature his cattle for market if possible. We should get out of the notion of selling the calves and after a while we will get out of the notion of trying to buy calves unless for breeding purposes. There should by all means be some community arrangement whereby the very best of sires could be used to produce the stock on the smaller farms. If this could be done there would be a marvelous improvement in the character of the stock in the course of ten or fifteen years. With every man handling a certain amount of cattle, it would be an easy matter for the local banks to handle the loans without outside help.

Cattle loans should not be made for more than six to nine months at a time because there are a good many things that can happen to a herd of cattle in that time. Money has been too easy on steers. This has made speculation possible. The cattlemen figured that when he could get money for a lower rate of interest he could afford to bid higher on the cattle. Quite often he failed to take into consideration the fact that the difference in interest might not amount to

more than fifty cents on the steer, whereas the increase in the price he was offering might amount to as much as six or seven dollars.

MORE ORDERLY MARKETING

Co-operation among men in growing cattle along the line of more orderly marketing must be taken into consideration to make the business more stable. I have always gone on the theory that the world consumes about so much food each month of the year and that about so much should be marketed each month. This would result in a more uniform price both for the producer and to the consumer. This reform in the marketing of stock should take place at its origin. This would be a restriction on the food speculator. When we have done this financing of the cattle, business will be easier and the interest rates lower. Interest rates have been almost too low. A rate of four per cent encourages speculation. The normal rate on commercial paper at the present time is five per cent.

I have been asked to state my opinion as to whether interest rates will be higher during the war. I see no reason why they should be. Of course they have been abnormally low, in fact too low because this permits speculation. I do not believe the rate will be much higher, because practically all of the Government loan must be spent in this country.

LOAN COMPANIES DANGEROUS

One of the worst things for the cattle

industry and the financing of cattlemen is the large number of cattle loan companies that have sprung up in the last few years. Some of these with a capital of but \$25,000 have floated three million in loans. When you make a cattle loan from such a company with but \$25,000 capital, you must make up your mind that you will have to pay this note the day it is due. They are conducting the business of floating these enormous loans simply from the standpoint of the commissions they are able to make.

GET MONEY FROM LOCAL BANK

The logical place to get your cattle loan is at home where the people know you and know your business methods. If you are doing too large a business for the bank at home to handle the loan you wish to make, you should go direct to some large city bank with a plain statement of your business and the methods you are following. Do not go to the commission men. The only warning I would give would be to carefully avoid the danger of getting more money than you need.

There is scarcely a farmer in Kansas that cannot handle eight to twelve head of cattle in the feed lot or in the pasture and do well with them. There are quite a good many that can take care of a carload of cattle and do well with them. There are but few farmers, however, that can feed and handle twelve to fifteen carloads of cattle and make money. By this I mean that men who can borrow a hundred thousand to two hundred thousand dollars, put it into cattle, and make a profit, are mighty scarce. The average man is able to handle a small retail business. It is only exceptional men who have the requisite ability to carry on business on a wholesale scale. For this reason, as well as for others I have mentioned, we should get into the cattle business on the basis of smaller units. We must break up the big herds and produce our cattle in these smaller units because the great majority of men can only handle these smaller units and but few can handle the larger ones.

There has never been any serious trouble in handling the loans of cattlemen, and there will be none, but the business would be conducted much better if it were not so irregular. Too often cattlemen have jumped from one bank to another. It is my advice to select a good, reliable bank, and stay with it.

Says a motor traffic magistrate: "Automobiles are ferocious animals." Bet he caught his judicial finger between the chain and the sprocket teeth, and forthwith imagined the darn thing had bitten him.—American Motorist.

Time spent in destroying flies or their breeding places is well spent.

Cattle Feeding Experiment

DECEMBER 1, 1916, TO MAY 30, 1917.

	LOT 24	LOT 25	LOT 26	LOT 27	LOT 28	LOT 29
Initial weight	338.6 lbs.	342.1 lbs.	334.5 lbs.	334.7 lbs.	342.6 lbs.	338.6 lbs.
Final weight	682.4	682.4	688.3	688.3	698.8	690.7
Total gain	343.8	340.3	353.8	353.6	356.2	262.1
Average daily gain	2.12	1.89	1.96	1.96	1.97	1.45
Average daily ration:						
Grain	7.32	6.63	7.39	7.39	7.38	6.65
Oil meal	1.32	1.19	.49	.49	.49	.49
Hay	4.05	4.05	7.82	7.82	7.32	14.45
Silage	7.75	7.75
Cost of feed per day	\$.24	\$.202	\$.216	\$.216	\$.212	\$.15
Cost of 100 pounds gain	11.34	10.68	11.01	11.10	10.71	12.36
Cost of feed per steer	43.20	36.36	38.88	38.88	38.16	32.40
Initial cost of steer at \$8.50	28.78	29.07	28.43	28.45	29.12	28.78
Total cost of steer	71.98	65.43	67.31	67.33	67.28	61.18
Final cost per cwt.	10.01	9.59	9.77	9.83	9.62	10.18
Final value per cwt.	10.20	10.35	10.25	10.35	10.50	9.60
Final value of steer	73.43	70.62	70.55	70.83	73.27	57.67
Profit per steer	1.45	5.20	3.24	3.55	6.09	-3.51

Lot 24 was fed a ration of ground barley, oil meal, alfalfa hay (brown), and silage. Lot 25 was fed a ration of shelled corn, oil meal, alfalfa hay (brown), and silage. Lot 26 was fed a ration of shelled corn, oil meal, and alfalfa hay (good color). Lot 27 was fed a ration of shelled corn, oil meal, and alfalfa hay (brown). Lot 28 was fed a ration of shelled corn, oil meal, and sweet clover hay. Lot 29 was fed a ration of shelled corn, oil meal, and alfalfa (black).

Fourteen steers in each lot. They were fed 180 days. Alfalfa hay used in Lots 24, 25 and 27 was brown (stack burnt) and medium coarse; that used in Lot 26 was of good color, same quality otherwise. Sweet clover hay used in Lot 28 was the first year's growth, very fine quality and excellent color. Black alfalfa used in Lot 29 was stacked immediately after cutting without being cured. Cottonseed meal used the first three months, linseed meal used the last three months.

Prices used for feeds: Corn, \$1.12 per bushel; barley, \$1.06 per bushel; alfalfa hay, \$15 per ton; sweet clover hay, \$15 per ton; black alfalfa, \$5 per ton; silage, \$5 per ton; linseed and cottonseed meal, \$45 per ton.

Avoid Misuse of Resources

WASTE, if not a sin, is not far out of that class. And waste is not only the wanton destruction of property, the dissipation of money, the impairment of values—these are dictionary definitions—but in its broadest sense, waste is misdirected energy, misuse of resources and absence of common sense.

Common sense is the greatest gift of the human race and, as such, bears a direct relation to waste, perhaps its greatest curse. When common sense ceases, waste begins.

If ever a time existed when a country should avoid the sin of waste, of misdirected energy, of misuse of resources, and should use common sense, that time now has arrived in our country. We have the energy—let us see that it is not misdirected; we have the resources—let us see that they are not misused; we have the common sense—let us see that it is our guide. We of the business world have work to do as great in its effect on the safety and welfare of the present and future generations as that of our army and navy, whatever they may be called upon to do. Their conduct will be governed largely by events of the future. Our course lies clearly before us now.

During the last two years our country has been the supply house of the world. It has had more business than it could take care of. Labor has been insufficient and inefficient, car supply inadequate, materials scarce, railroads congested. As a result, factories have been unable to turn out their products in quantities to meet the demand. This condition still exists and likely will continue for some time to come—at least until war ceases and the commerce of the world is able to return to a normal basis.

Solution of the problem lies in the elimination of waste, direct and indirect. Surely our people in this time of stress will avoid direct waste—destruction, dissipation, impairment. But they must go further and substitute common sense for indirect waste—misdirected energy and misuse of resources. Everything we do, everything we produce—our labor, our materials and the means of transporting them—must be directed along productive lines.

What are productive lines? It is easy at this critical time to determine the relative importance of a canning factory preparing food, and a piano factory. One is a necessity, the other a luxury. If there is a shortage of labor and materials in a certain town and two factories—one for the preparation of food and the other for the manufacture of a luxury—want to build additions, into which should the available supply of labor and materials go?

Each business man in his own community can direct his own and the energy and resources of others along productive lines. It is certain that in this country this year there will not be enough labor and materials to supply the demand. Therefore, each must be diverted into proper channels that will permit of the prosecution of work that for the national welfare must be done, while that which is unnecessary at this critical time in our affairs should be delayed. There is need for team work and the display of common sense on the part of all of us.

Government needs, of course, come first—particularly those of a national defense character. These include the building of fortifications, the manufacture of munitions in both raw and completed states, the growth and preparation of foodstuffs and in general everything that the federal government requires to continue its existence in a time of peril.

After urgent needs of the government, both direct and indirect, it is necessary in carrying on our work only to differentiate between necessities and luxuries. The latter to a large extent include comforts as well—and practically everything that is not properly classed as a luxury or a comfort is a necessity at this time. It is easy when the supply of labor, materials and cars is not enough to go round, to recognize the importance of providing facilities for turning out and transporting farm products, food stuffs,

clothing, motor trucks, cement, steel, paper, etc., rather than flowers, jewelry, musical instruments, etc.

Let us see to it that our energies, in the form of labor, and our resources, in the form of materials and the railroad facilities used to transport them, are diverted into the right channels. Proper selection of these channels may be left to our common sense.—B. F. AFFLECK, President Universal Portland Cement Co.

Drainage Increases Production

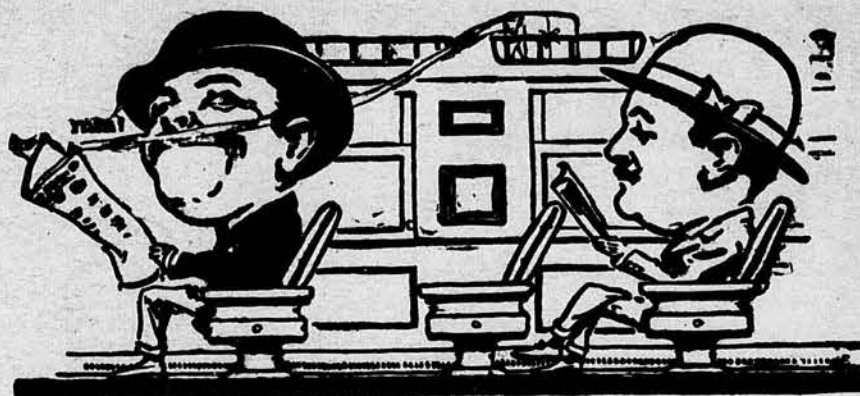
On practically every farm in Eastern Kansas there is some land that needs drainage. On many of these farms these patches of poorly drained land are of almost no value for production purposes. These idle acres reduce the average production of the whole farm. It takes more time and labor to farm around them than would be required to cultivate them. At tax-paying time the undrained acre must be paid for at the same rate as the productive acre. It is the opinion of the writer that no greater value could come from any one source than from properly tile-draining a farm. Money invested in tiling properly laid is sure to return good dividends.

There are a number of well established facts with reference to the advantages of draining that might well be considered. Properly drained land will produce better yields both in wet and in dry seasons. Frequently the soil of poorly drained land becomes hard and bakes. As a result of proper drainage the character of such soil may be so changed through the removal of the surplus water and aeration as to become highly productive. Soggy, seepy lands upon which crops cannot be grown at all can be brought into a high state of cultivation by tiling. Tile drainage will pay not only on bottom lands but also on the uplands. No investment made will bring a higher rate of interest or more certain returns than money put into tiling where needed.

Tile draining the wet land increases the value of the entire farm. The land owner need not have a large amount of cash in order to make this improvement in his farm. Money invested in tiling becomes productive capital and as a rule there will be little difficulty in financing a drainage project. The success of such improvements depends to a very large extent upon proper planning. Guesswork will not produce satisfactory results. An engineer who understands planning and constructing a system of farm drainage should be consulted. Each farm is a problem in itself and the wise course for the land owner to take is to secure the practical assistance of a man who knows how to handle the situation.

One of the drawbacks to drainage work has been that land owners generally are not willing to pay the engineer for his knowledge and experience. Many are inclined to follow their own judgment in planning their work, and trust entirely too much to luck. Tile that has been laid by such methods is far from satisfactory, and the verdict goes out that tiling is a failure.

When we wish safe advice in the matter of law, we consult a lawyer, but when in need of advice in an engineering matter such as laying out a drainage system, the man who has lived upon a piece of land for a good many years too frequently considers his personal observations to be all that is necessary in laying out the work. Laying out drainage systems is a matter of careful calculation and each case is different. In planning for suitable drainage, the experienced engineer takes into consideration rainfall, the character of the soil, the slope of the land, extremes of temperature, and many other things that the land owner overlooks entirely. All of these are essential to the best results. It has taken the engineer years of study and hard work to acquire his professional knowledge, and when the land owner is willing to pay a reasonable amount for his services both will be profited. The drainage systems put in under proper supervision will work and the result will be better production of crops and a reduction in the erosion which is carrying away the cream of our soil.—V. R. PARKHURST, Shawnee Co.



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Fragrance is the essence of coffee. It's the fragrance that makes it appeal to you. It's the pure fragrance of a good tobacco, likewise, which guarantees a personal smoke satisfaction. Your sense of fragrance is a sure guide. Trust it—"Your Nose Knows."

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The American Tobacco Co.



Home Canning Outfits

Be Patriotic! Be Economical! You can be of great help to the country by doing your share toward conserving all food stuffs. Eliminate all waste. You can be economical, reduce the high cost of living and provide for the future welfare of yourself and family by storing surplus foods. Don't delay. Write today and investigate the Butler Home Canning Cookers.



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They are just the thing for home use. Cook quicker, better, with less trouble than old style methods. Adapted to all fruits and vegetables. Cooked products have better color, flavor and shape, being cooked whole in the jar or can. Butler Cookers are strong, yet light in weight and easy to handle. Substantial enough to last for years. The low price for which you can get these great cookers and the wonderful work they do make them almost a necessity for every household.

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Help Conserve the Nation's Food Stuff

Kinds of Sweet Clover

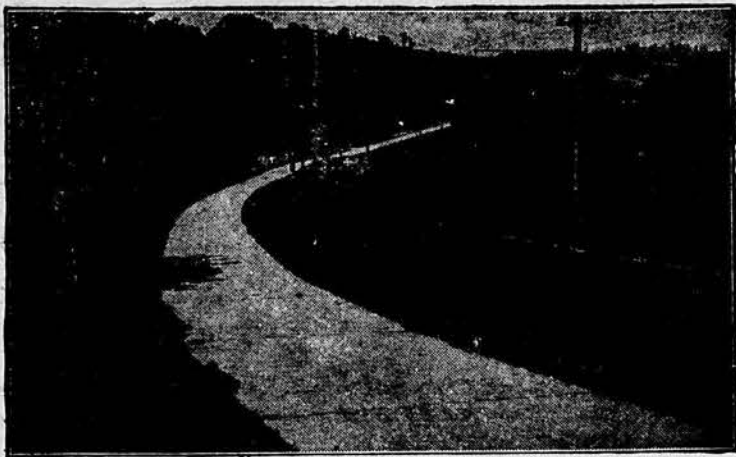
Two kinds of sweet clover are commonly grown—the white and the yellow. The white is considered to have the greatest value both for hay and pasture. It grows larger than the yellow and is more leafy. The seed of the white sweet clover is of a bright olive green color and about the same size as alfalfa seed. The seed of the yellow sweet clover is much the same size, shape and color, except that under the microscope

it has a mottled appearance not unlike a turkey egg.

Many country merchants complain that they handle eggs at a loss during the summer months. If they will refuse to buy any but infertile eggs, this loss need not occur. Of course they will occasionally be imposed on, but the great majority of farmers are honest and would not claim their eggs were infertile when they were not.

Kansas Farmer Dairy Club

Clean Milk in Summer



Stretch of Concrete on the Ohio River Road near Parkersburg, W. Va. Built in 1915 under the direction of Burdett Woodyard, Engineer.

The Farmer Can Pull Himself Out of the Mud

FARMERS know the value of permanent roads in their communities. They can get them if they act along the following definite lines:

1. All main highways should be built of concrete to withstand motor car traffic.
2. It is far better to lay out and build at once a system of concrete roads than to build a few scattered miles every year between stretches of mud.
3. It is better to raise a lot of money by a good roads bond issue and build right, than to spend each year the road funds on hand in temporary construction.
4. Concrete is as desirable for roads as for other important structures; and it is the least expensive permanent road material.

Some farmers may not like a bond issue. They do not realize

that a very few cents a year per acre is enough to pay off the bonds and all interest.

In Illinois it has been figured out by the State Highway Commissioners that a system of four thousand miles of permanent roads would tax farm land less than three cents per acre per year for twenty years. That's nothing. The whole four thousand miles can be built at once and make a tremendous saving in annual upkeep.

The farmer should act. He can spread information among his neighbors, he can talk to his road officials, influence his lawmakers to pass a good roads bond issue; and he can vote for it.

This Association can give you reliable information about the cost of building concrete roads and how to go about it. Write for Bulletin No. 136.

PORTLAND CEMENT ASSOCIATION

Offices at

ATLANTA	DENVER	MILWAUKEE	SALT LAKE CITY
CHICAGO	INDIANAPOLIS	NEW YORK	SAN FRANCISCO
DALLAS	KANSAS CITY	PITTSBURGH	SEATTLE

WASHINGTON, D. C.

CONCRETE FOR PERMANENCE



ARE YOUR CROPS PROTECTED?

You know the deadly work of hail. Within a few hours all your crops can be destroyed. Your income is gone. Your labor is wasted.

What a sense of security you have when your crops are protected against hail in a safe and conservative company. Don't risk another day, but insure now in a company whose officers are bonded to the State of Kansas for \$50,000.

THIS IS THE COMPANY

that first put the insurance in force from the moment the application was signed and the premium paid. Always has adjusted all losses, no matter how small. We ask for your application on our past record. Don't wait for the storm, but write us for full particulars or see our agent before you insure your grain.

THE GRAIN GROWERS HAIL INSURANCE COMPANY

Elmer F. Bagley, Secretary, Topeka, Kansas.

YOU cannot call yourself a successful dairyman until you have learned how to produce clean milk. Dirty milk is not fit for human food. No one likes to drink milk in which particles of dirt are found in the bottom of the glass. Dirty milk always sours more quickly and it quite often has other bad flavors. These bad flavors and the souring are caused by bacteria, which are tiny organisms too small to see with the naked eye. They are everywhere present. Every particle of dirt has upon it large numbers of these tiny organisms.

Most of the bacteria which gets into the milk come from dirt on the cow which gets in while you are milking. Bacteria also get into the milk from the utensils, such as cans, pails, strainers, coolers, and separators which have not been properly cleaned. In the winter when your cows get very dirty from confinement in the barn it is very difficult to keep dirt from getting into the milk while you are milking. In the summer, however, they are on pasture and are easily kept clean, so you will not have much trouble from dirt on the cows. During the summer, however, you will have a great deal more trouble from bacteria getting into the milk because of dirty utensils.

Trained bacteriologists have learned how to count the bacteria. A bacteriologist is a man or woman who has spent a great deal of time studying these tiny organisms with a microscope. In a count of bacteria recently made from some of the rinsing water left in an eight-gallon can which had been washed twelve hours before, more than three billion bacteria were found. If eight gallons of milk had been placed in this can there would have been enough bacteria when they were all mixed through the milk so that nearly one hundred thousand would have been found in a cubic centimeter. A centimeter is about two-fifths of an inch, and a cubic centimeter represents the quantity of milk that would be contained in a little square box that measures two-fifths of an inch each way. This can had been carefully rinsed and left covered in a room where the temperature was about 70 degrees Fahrenheit. In another experiment made during the winter when the temperature was less than 50 degrees in the room where the can was left, the rinse water in a can treated in the same way contained about three million bacteria. This would have meant that every cubic centimeter of milk in the can would have had about one hundred bacteria. Another can was carefully rinsed, then heated on the inside with steam, and set right side up with the cover off until dry. The bacteriologist found only two hundred thousand bacteria in this can. This number would have been enough so that each cubic centimeter of milk in the can would have contained but seven.

This sort of an experiment shows that in caring for dairy utensils, especially in warm weather, it is very important to have them dried thoroughly after cleaning. Bacteria cannot live without food, and their food in a milk can or pail consists of particles of the milk sticking to the tin or in the cracks and crevices of the can or pail. Careful cleaning removes all this food and then if steam is turned into the can it will kill a good many of the bacteria and will make the can or pail so hot that it will dry quickly. Treated in this way there will be practically no more bacteria in the can twelve hours after it is washed than five minutes after.

Dairy utensils should never be dried with a cloth. The right way is to heat them after they are washed clean in very hot water or steam, so they will dry themselves. The important points in keeping dairy utensils clean are: to rinse them in lukewarm water as soon after they are used as possible, next wash in hot water containing some washing powder which will remove grease. Then rinse in clean, hot water, and if possible turn a jet of live steam into the can or pail for a few seconds. Care-

fully drain any surplus moisture and set the utensils right side up until all the moisture evaporates and they are thoroughly dry. They can then be turned upside down and set on a shelf or other clean place.

In this issue there is an article about a home-made sterilizer for steaming the milk pails and cans after they have been washed. This is an inexpensive device and can easily be made by a tinner. It can be used on the kitchen stove or on a gasoline or oil stove. Be sure to read this article. You can get a copy of Farmers' Bulletin 748, which tells all about how to make this sterilizer, by writing to the Department of Agriculture, Washington, D. C.

Cooling milk or cream quickly and keeping it cool is another important point and in another article we will tell how to do this on the farm and why it is necessary.

Cow Pays Out

My cow did pretty well this month, although she did not have any feed but pasture.

I have only fifty-one cents left to pay, including calf money, which of course does not count on the contest.

Please send me two milk record cards and one feed card, as I did not have enough.—EVERETT ZIRKLE, Shawnee Co.

Another Closes Record

The end of May finishes my year in the Dairy Club. I have \$9.44 yet to pay on my cow, counting interest. I can pay the rest in a month and a half. I will send my note showing the payments I have made then.

How soon do you want the story of my work in the Dairy Club?—CARY BURTON, Butler County.

Writing a story of the year's work is a part of the contest and we will soon furnish all club members with some suggestions that will help them in doing this. We are looking forward to a fine lot of stories from the boys and girls who compete in the year's work.

Club Member in Tornado

My cow is dry now and the records I send this month will be the last ones. I have paid my note for the cow, which was \$107.50, and the interest, \$5.39. The milk I sold from my cow amounted to \$85 and her calf brought \$10, making \$95. I earned the rest.

I am glad to say my cow came safely through the terrible storm we had here, although two of our cows were killed, all of our outbuildings were destroyed, and our house was badly damaged. But we are thankful that we are all alive. My records will not be very neat because I have had scarcely time to make them out.

I expect to join the Advanced Dairy Club if I can find a cow. Good cows are very scarce. I wish all Dairy Club members success.—MAX HOLLISTER, Harvey County.

It is not necessary to get another cow to enter the advanced class of the Dairy Club. You can use the cow you now have, simply starting another year's record some time before October 1. Of course if the first year's records show that the cow is not very profitable, it would be good business to dispose of her and get a better one. Some have already sold the cow used in the first year's work because they have learned from their records that she was not good enough to keep longer.

A milk condensery will be operating in Garnett, Kansas, by August 1. A building is being erected 30 x 88 feet, 16 feet high, constructed of brick and concrete. It is being built by the Crescent Creamery Company of Kansas City. The plant will have a daily capacity of 25,000 pounds of milk, the investment to be \$15,000. As a result of this condensery being put in at Garnett there has been a great deal of interest taken in developing dairy farming for that section. A good many dairy cows have been brought in during the past few months.

HOME-MADE STERILIZER

DURING the summer season it is very important to thoroughly sterilize all utensils used for milk. A great many people cannot afford to have a specially equipped milk house or milk room. The dairy division of the United States Department of Agriculture has worked out plans for making a very efficient home-made steam sterilizer. We described and illustrated this sterilizer last year, but for the benefit of many who may have overlooked it at that time, and also for the many new subscribers, we reproduce the illustration in this issue.

The federal department has just announced that it will demonstrate the use of this sterilizer in various parts of the United States this season. More than twenty of the outfits have been prepared for this work and already the health authorities in 150 cities have asked the department to send these outfits for local demonstration.

The outfits, which cost not over \$15 and can be made by any local tinsmith, when placed on a range or a two-burner oil stove, generate steam enough to kill the bacteria in milk cans, pails, strainer cloths, and separator parts. At the same time the device removes foul odors, leaves the utensils dry as well as sterilized, and adds materially to their life. The sterilization of milk utensils is of importance to the dairyman who wishes to produce a good-flavored milk which will not sour readily. This is shown by the fact that milk cans, washed in the ordinary way, may harbor billions of bacteria, and milk contained in these cans is sure to have a high bacterial count, which tends to affect not only its keeping quality but its flavor as well. Other experiments show conclusively that milk which starts in sterilized utensils has a much better chance of reaching market in good condition than milk which has been handled in utensils that simply have been washed in the ordinary way.

The effectiveness of this home-made sterilizer has been fully proved both in the laboratory and on the farm. In one experiment ten gallons of fresh milk were divided into two parts. Five gallons passed through a separator into a five-gallon can, both utensils washed in the ordinary way, showed at the end of an hour 1,880,000 bacteria per cubic centimeter. The other five gallons, passed through a separator into a can, after both utensils had been washed and sterilized by means of the home-made sterilizer, showed only 24,000 bacteria per cubic centimeter.

The making of this sterilizer is fully described in Farmers' Bulletin No. 748 which can be obtained on application to the Department of Agriculture, Washington, D. C.

Bull Associations

Seventy-six dollars represents the average dairyman's investment in bulls. This is the statement made by dairy investigators in the Federal Department of Agriculture. Two-thirds of this money can readily be saved and better bulls obtained by joining a bull association. Through this co-operative organization dairymen can save money, make their enterprise more efficient, and obtain better-bred cows, capable of pro-

ducing more milk. In this way community breeding is established, constructive breeding is encouraged, bulls are used to their full capacity, good bulls are kept and used as long as fit for service, and contagious disease is successfully controlled.

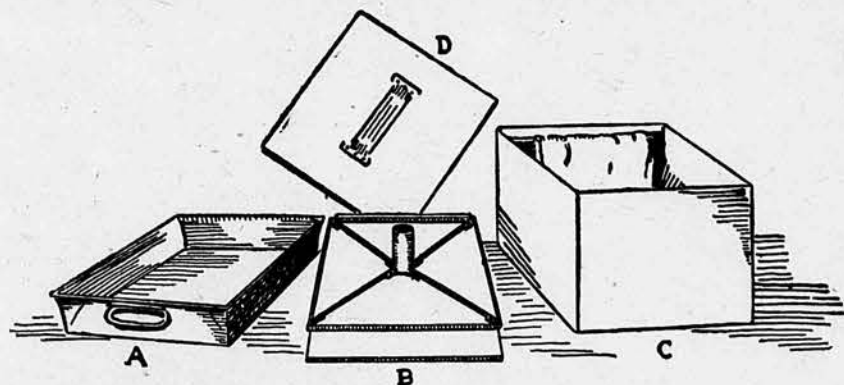
The typical co-operative bull association, composed of from ten to fifty farmers, jointly owns five bulls, divides its territory into five blocks, and assigns a bull to each block. From thirty to eighty cows are owned by the farmers in each block and the bull is kept on some farm conveniently situated. Thus a co-operative bull association is an organization of farmers for the joint ownership, use, and exchange of high-class, pure-bred bulls. In addition, it stimulates the careful selection of cows and calves, introduces better methods of feeding, helps its members market dairy stock, and in other ways assists in lifting the dairy business to a higher level.

A bull association reduces the number of bulls to the minimum, because one bull serves several small herds. This means that for the same or less money much better bulls can be owned, and as the number is smaller the cost of "keep" is consequently reduced. The original investment per member in bulls under this plan ranges from \$20 to \$90, covering a period of ten years. Good, pure-bred bulls, therefore, are brought within the reach of any farmer, no matter how small his herd. In fact, it is less expensive than to own a scrub bull.

While few farmers can afford a \$1,000 bull, every farmer can own a share in one. Such a bull, wisely used, will pay for himself several times over in the first generation of his offspring. In fact, the first seven daughters of one association bull showed an average butterfat production of 116 pounds more than their dams. At the price of 30 cents a pound for butterfat, the seven daughters of Bull No. 1 will earn in four years' time \$500 more than their dams. It is only when the lifetime production records of all his daughters are computed and compared with those of their dams that the full value of a pure-bred bull's services to one generation can be known. In addition, his influence on the herd will be noticeable for many generations. This illustrates the great value of a good bull. The damage done by an inferior bull may be equally great. No other argument should be necessary to convince every owner of dairy cows that he ought to join a bull association.

Cattle breeding is especially adapted to co-operative effort, and its greatest development will come through community breeding. A bull association encourages the keeping of only one breed of cattle on the farms of its members, and the establishment of that breed in the community. Breeders will realize that buyers visit districts where large numbers of the type of cattle they seek can be found.

When the association is composed of five or six breeding blocks, all its good bulls are used to their full capacity and kept as long as fit for service. Advancing the bull to the next block at the end of two years does not eliminate him, but makes it possible to avoid inbreeding.



PARTS of home-made sterilizer. A, Roasting pan; B, Insulated cover, consisting of sheet of asbestos board between sheets of galvanized iron (is fitted with steam pipe 1½ inches in diameter and top has flanges to raise cans and upturned edges to catch condensed steam); C, Galvanized iron bottomless box; D, Cover to box. This is placed over steam pipe and used to scald strainer cloths. To use sterilizer, place over fire with about an inch of water in pan and fit lid. When steam is escaping, invert pails or cans over pipe and leave for five minutes.

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Farm Renters The present high prices and higher ones that are coming mean that you cannot afford to let your manure lie around your farm idle. Make it work for you. Make it produce more of the valuable farm products that are commanding such good prices today.

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Let me prove that in buying this great late model spreader direct from Galloway you not only save that \$25 to \$50, but you get the best spreader that I or any one else ever built. It's impossible to get as good a spreader as Galloway's, because I studied and investigated them all before I built my newest model. None has so light a draft—such a big horse saver. And best of all I have eleven new exclusive spreader improvements. These eleven new features are patented and controlled by me. On no other spreader can these eleven improvements be had. So if you want the newest and best in a spreader—the most down-to-the-minute in design, efficiency and work—your choice must be the Galloway.

See How I Have Improved the Spreader

Learn about my new steel beater and wide spreading V-rake that pulverizes and tears the manure to shreds. See my incomparable patented roller-feed that works on the same principle as moving a house on rollers. This together with the large drive sprockets make the lightest draft ever known. Remember my new model spreaders are not horse killers. The Galloway positively is easier handled with two horses than other spreaders with three and four horses. My patented automatic stop and uniform clean-out push board make spreading easier and more thorough than with old style spreaders. The everlasting tongue of pressed steel is positively indestructible. The beater teeth are strong and extra durable and break up the toughest clumps into finest particles. The rear shaft of high carbon steel is now stronger than ever. All metal parts neatly finished with asphaltum weatherproof paint. Spreader is adjustable from 4 to 24 loads per acre. Has double chain drive direct from rear wheels. Extra heavy bolts hold the beater bars in beater head. Beater bracket is strengthened beyond strength required by extra bolts. Part for part, all the way through from front to rear, the Galloway Spreader excels at every point.

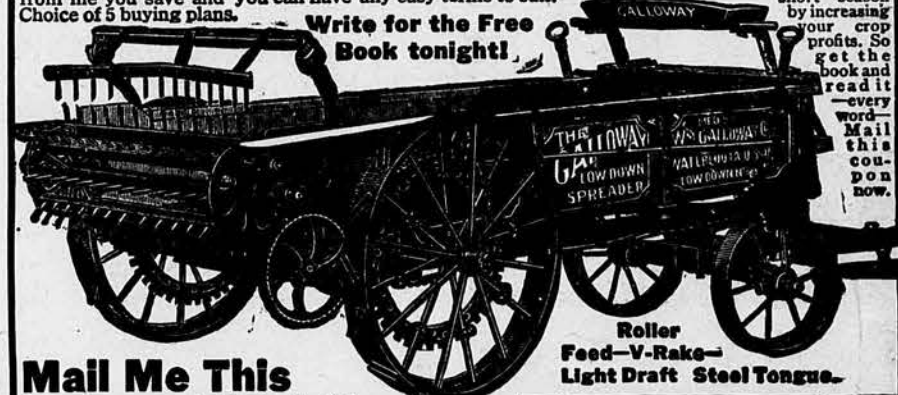
Get My Low Patriotic Price!

This of all times is the time to use a spreader. A top dressing now means bigger crops this fall when prices will be higher than ever. And then all farm products will be at a premium. The men and the women on the farm must do their share for the nation. I am doing mine by naming you a low Patriotic Price that will help you in doing your bit for the country. It means

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WILLIAM GALLOWAY CO.
219 Galloway Station WATERLOO, IOWA

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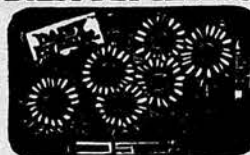
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WHEN WRITING TO ADVERTISERS PLEASE MENTION KANSAS FARMER



Destroying Field Bindweed

WE HAVE just received a sample of weed from S. K., Nemaha County. He says: "I have three patches in one of my fields and would kindly ask you to give me the name and tell me how to kill them, if you know of any way. They look a good deal like morning glory, but are finer, very thick, and have deep white roots. Can raise good wheat there, but they smother out corn. Have plowed them deep three times one fall without effect on them. Last fall after harvest I plowed them and put salt in every furrow quite thick, but it does not seem to have hurt them much. I put a straw stack on one patch and last summer some of them came up through four feet of straw."

"I would be very thankful to you if you would tell me of some way to get rid of them."

This weed is known as the field bindweed. In a circular on this weed prepared by Prof. H. F. Roberts, of the Kansas Experiment Station, it is stated that it is the worst weed in the temperate zone and the one most difficult to eradicate. Its roots penetrate the ground to a depth of from four to ten feet and form a dense network through the soil, far below the reach of any plow. Shoots of the bindweed come to the surface which start from roots lying as deep as two feet below the surface. It is this enormous root system, drawing as it does large quantities of water from the soil, that makes it almost impossible to raise crops on bindweed land. It is also impossible to prevent the growth and spread of the roots so long as any green tops are left growing above the ground.

When left to itself this weed spreads very rapidly—as much as ten feet in a season. Unless very radical and prompt measures are adopted for its eradication it is only a question of time before it will take an entire field.

Attempts have been made to eradicate it by cropping systems combined with clean cultivation. It was found that the weed would even smother out a thick stand of cane. If the plants could be kept cut off continuously below the surface of the ground it probably could be eradicated in the course of time. From a practical standpoint, however, this method is almost impossible to carry out. Another method suggested is to keep a drove of hogs closely confined to the bindweed land. This likewise is not always practical.

Applications of large quantities of salt seem to be the only sure method of destroying it. In the experiments at the Dodge City branch experiment station when the weed was treated with five tons of salt to the acre, five per cent of the plants survived. Where the salt was applied at the rate of ten tons to the acre, only one per cent of the bindweed plants remained. An application of fifteen tons of salt to the acre destroyed the roots of all the plants to a depth of eighteen inches. The cost of the salt used here was four dollars a ton delivered. It came from Hutchinson.

Martin G. Miller, a farmer near Russell, Kansas, has had some experience with this weed. It got started on his farms and was rapidly becoming a serious menace. He wrote as follows to J. C. Mohler, Secretary of the State Board of Agriculture:

"We tried various methods of eradication. Throughout one summer we plowed the patches regularly, but the more we plowed the thicker the weeds grew. Rotation with cultivated crops likewise failed. Plowing through the patches only spread this noxious plant. Hogs pastured on the bindweed removed the surface vegetation and pulled out some of the roots, but the following spring the bindweeds appeared again and flourished in increasing numbers.

Sheep also were of no value in killing this weed.

"In the fall of 1911 we bought two carloads of salt and spread it on land affected with bindweed, as an experiment. The results proved so satisfactory that during the past three years we have scattered about 1,500 tons of salt on bindweed patches. The salt used for this purpose is called 'Crushed Rock Salt No. 4.' It was shipped from Kanopolis, Kansas, and is now quoted at \$2 per ton f.o.b. Kanopolis.

"The following methods were used: During the summer when the weeds were visible we located the extreme limits of the patches, marking them with a plowed furrow. Early the following spring the surface of the ground was cleared of all grass and weeds, and salt was applied by broadcasting directly from the wagon with flat shovels. Wheat drills do not completely cover the ground, and manure spreaders are not properly built for the handling of fine salt. The salt was applied at the rate of twenty-three tons per acre, making a uniform layer over the entire area of at least three-eighths of an inch in thickness. Some seem to think that a smaller amount of salt is adequate, but I have realized from experience that it pays to put on a sufficient amount the first time and avoid repetition of the operation. I prefer to allow the salt to remain undisturbed on the ground until the third year. I then fertilize and plow deeply.

"The number of years required for salted ground to return to a productive condition depends upon the amount of salt used, the amount of moisture received, the artificial means used to restore it (such as fertilizers), and the method of cultivation. The ground salted in 1911 grew a fair crop of wheat in 1915, and a good crop in 1916. To me the question of how many years before the ground will return to its former condition is of minor importance, for ground covered with bindweeds is wholly worthless, and the danger of the spreading bindweeds permanently ruining the surrounding land is so great that it is necessary to adopt drastic measures.

"To the man who is at present unable to salt all the bindweeds on his farm, I have this suggestion to make: That he purchase enough salt to cover a strip about ten feet wide around the extreme edge of each patch, so that the roots of the pest cannot spread over more land. The patch inside the circle should then be plowed regularly so that the flowers cannot mature and the vines develop seeds. This will act as a check to the weed, but the ultimate purpose should be to use salt over the entire patch."

Kafir Seed Bed Preparation

There may be some of our readers who will of necessity be compelled to plant grain sorghums as late as the latter part of June. For such the methods practiced by a KANSAS FARMER reader in Chase County will be of interest. He states that his experience with a field of kafir last year leads him to believe that a good deal can be done toward growing a crop before it is planted. He says:

"We got the ground ready for planting this field of kafir by plowing and harrowing. Before we could plant it there came a very heavy rain that beat the ground down hard. As soon as we could get on the field we disked and harrowed it. Just as we were about ready to plant we had another hard downpour. We again disked and harrowed and the greater part of the land got a third cultivation with the disk and harrow before we got it planted late in June. The crop was killed by frost September 29, before it was quite mature. One of my neighbors, who is a very practical farmer, said, 'It never stopped growing.'"

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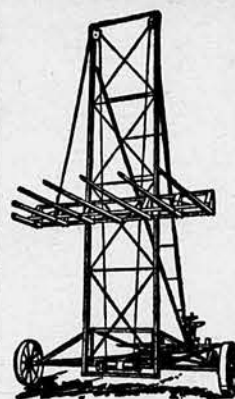
Promontory-Curlew project—greatest dry farm wheat land opportunity ever offered in the West! 400,000 acres of virgin wheat land located in northern Utah (look at map); over 200,000 acres already purchased and under cultivation by farmers from every state in the Union. Over 500,000 bushels of wheat, oats, barley and rye raised last year. Land yields up to 45 bushels of wheat per acre first year. Costs only \$9.00 per acre to clear, plow, harrow, seed, cut, and thresh. Good markets, close; transcontinental railroad (Southern Pacific) through the property; good schools—churches—prosperous towns, everywhere.

Sell rich, sandy, clayey loam. Last year Utah averaged more wheat to the acre than any other state but one; and more oats per acre than all other states except one.

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WHEN WRITING TO ADVERTISERS PLEASE MENTION KANSAS FARMER

The Government rainfall record for this section is kept on this farm. The monthly precipitation for the spring months up to the time the crop was planted was as follows: April 3.44 inches, May 6.88 inches, June 7.62 inches. After the kafir was planted there were two light rains in June amounting to .89 of an inch. In July but .07 inch of rain fell. During August the total for the month was 3.75 inches. On the second day of August 2.02 inches fell in a very short time. Considerably less rain falling more slowly would have done a great deal more good than did this downpour. In September up to the time of the frost September 29, 1.94 inches of rain fell. The total rainfall on this kafir from planting time until the frost struck it was only 6.65 inches.

In ordinary seasons it would have fully matured. Our correspondent states that ten days of good growing weather would have matured the crop. The average date for the first killing frost in this section is October 15. This is the average for a long period and we can ordinarily count on having until about the middle of October to mature a grain sorghum crop.

The careful tillage which this field received following the heavy rains of the spring probably saved much of the moisture so the crop was able to draw on it during the period of short rainfall and thus continue its rapid growth. This tillage also favored the development of plenty of available plant food, which also tended to force rapid growth. Those who plant kafir late can well afford to take a few days' extra time to get the seed bed in the best possible condition.

Farmers and Liberty Loan

One aspect of the Liberty Loan of 1917 that the farmers of America may well consider is that a very great portion of the money raised by the bond issue will come directly into the pockets of the farmers of the nation.

All of the money advanced to our allies will be expended in the United States and as they are making all of their own munitions practically all of the money advanced them will be spent for products of the farms—for cotton and clothing and high explosives, wool for clothing, and leather for shoes; but by far the greater part of the money loaned our allies will be expended here for food products.

In a few months the United States will have under arms 1,200,000 men and 500,000 reserves in training; so including the navy there will be 2,000,000 men that our Government will feed and clothe. This will make the United States

Government by far the largest single customer the farmers of America have.

The Secretary of the Treasury is employing such methods in handling the loan that no community will be denuded of money by reason of Liberty Loan Bond purchases. The money will be left in local banks and as the Government purchases food and supplies the money raised by the bond issue will pass back into the pockets of the people.

The farmers of the country should subscribe liberally to the Liberty Loan Bonds. They get the safest investment in the world and their money supplies their best customer the funds to purchase their products. This is political economy the wisdom of which is plain to everyone.

English Air Fighter's Story

I was ordered to report at Farnborough, England, on the morning of November 16, 1914, ready to start for France. Fourteen pilots reported at 8 A. M. Eight machines were ready to go across the channel and eight of us were assigned to these machines. Luckily I was one of the eight. The others went across by boat, to take machines to be supplied later. An observer was also assigned to each of the machines.

Like all fighting planes in the British army, it was equipped with a Lewis machine gun, the invention of Major Lewis, of the United States army. Also, like all British planes, it had the simple "stick" control, which is the least complicated to operate. The rudder steered with a bar at my feet and the elevators and the ailerons were controlled by the single perpendicular stick. The machine gun on this plane operates through the hub of the propeller. It was in a fixed position and I aimed the gun by aiming the entire machine. The observer in front of me operated the gun and at either side of the observer's seat was strapped a telescope through which he could examine the ground beneath us.

Before leaving the ground the observer and I both strapped ourselves in our seats. This is one of the strictest rules of the air service. Sometimes, though, it is not observed. On one occasion at the front an observer failed to strap himself into his seat before leaving the ground. The plane was of the old pusher type and in conflict under gunfire over an enemy battery the pilot found it necessary to turn a quick loop to get away from his opponent. After looping he flew back towards his station and had gone a considerable distance before he noticed that the observer was missing. He had been dropped out at a height of many thousand feet.—The American Boy.

Rainfall Over Kansas, for May

Reports Furnished by S. D. Flora, Meteorologist, Weather Bureau, Topeka.

City	Report	Normal	Excess	Deficit	City	Report	Normal	Excess	Deficit	City	Report	Normal	Excess	Deficit
Abilene	2.24	1.61	2.12	0.320	Chanute	1.44	1.56	1.80	1.88	2.98	3.11	2.87	0.24	0.13
Altoona	1.44	1.56	1.80	1.88	Conrad	2.03	2.09	0.97	1.92	2.48	1.91	3.64	1.73	1.91
Arkansas	2.24	1.61	2.12	0.320	Empire	2.29	2.32	1.49	0.99	1.34	2.48	4.73	6.15	4.64
Atchison	1.44	1.56	1.80	1.88	Fort Scott	2.74	2.04	2.73	1.60	2.54	2.70	3.07	4.84	4.31
Barber	2.24	1.61	2.12	0.320	Geary	2.74	2.04	2.73	1.60	2.54	2.70	3.07	4.84	4.31
Bellevue	1.44	1.56	1.80	1.88	Harvey	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethel	2.24	1.61	2.12	0.320	Lawrence	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Leavenworth	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	McPherson	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Meriden	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Minneapolis	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Missouri	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Nebraska	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Nevada	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	New York	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	North Carolina	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Ohio	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Oklahoma	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Oregon	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	South Carolina	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Tennessee	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Texas	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Vermont	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Virginia	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Washington	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	West Virginia	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Wisconsin	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65
Bethesda	1.44	1.56	1.80	1.88	Wyoming	2.23	2.64	1.85	1.65	1.72	1.31	3.26	4.43	3.65

THE rainfall of May was slightly below normal over about two-thirds of Kansas, but by the close of the month it was sufficient for present needs in all parts and a great deal more than was needed in some parts. There was less drying wind than usual and this and the lack of sunshine kept the ground too wet for cultivation and planting a great deal of the month.

Crops, especially wheat and grasses, made a fine growth despite their need of sunshine and warmth. At the close of the month wheat was heading in the eastern part and doing fairly well in the western. The greater part of the corn crop was up and making slow growth, but still had a good color.



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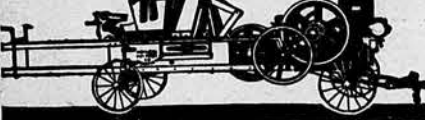
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Shed For Handling Sheep

ONE of our readers in Allen County asks for a plan for a cheap house or shed and feed lots in which to feed grain and hay to a hundred ewes and their lambs during stormy weather.

We asked A. M. Paterson, of the Agricultural College, who is a recognized authority on sheep, to offer some suggestions along the line of the inquiry from our correspondent. He says:

"I would suggest economy of construction as the first item to be considered in planning for the housing of these hundred ewes. For a location, select a rather high place having good drainage and a southern slope if possible.

"The house or shed should be built so as to give plenty of ventilation and light. Allow about twelve to fifteen square feet of space for each ewe and lamb. It is necessary to provide for the storage of feed. I do not think it advisable to build a two-story structure because all the feed necessary can be stored at one end. The barn should be arranged so you can drive through with a team to clean out the litter and manure.

"Permanent partitions are not necessary. When a division of the flock is to be made, temporary partitions can be formed with the feed bunks. I do not believe it is necessary in this state to plan to do all of the feeding inside. I think it is a great deal better to feed the sheep out in the open except when the weather is very bad and stormy. If any of your readers will furnish me specific ideas as to what they want, I will be glad to draw rough plans for them."

Increasing Supply of Meat

It is oftentimes much easier to make some changes in methods that will save losses than to increase production by farming more acres or feeding additional stock. In a recent public statement F. B. Mumford, dean of the Missouri College of Agriculture, called attention to the enormous apparent waste of corn stover and in some districts straw and other coarse fodder. Millions of acres of corn stover are permitted to stand in the field without any attempt to preserve it in palatable form. If this material could be preserved and used for production of meat on the farms, it would add largely to the present supply without largely increasing the cost of our present farm system.

Corn stover is a coarse roughage. It will, however, maintain animals in good condition during the winter season. The amount of corn stover that is now practically wasted in the stalk fields of the Middle West would successfully maintain in a satisfactory manner millions of cattle during the five months' winter feeding period. This material is the one greatest asset in increasing the supply of meat products.

In using the cheaper materials for the production of live stock it will be necessary to modify somewhat our present systems of farming. It will also be necessary for us to emphasize the fact that the farmer's problem is not always to provide the most satisfactory conditions for animals, but a more fundamental problem is how to most profitably use all of the material resulting from the cultivation of the soil. If we consider his problem from this point of view, it may well happen that the most profitable methods of live stock production may not be those which produce maximum growth of fat in a given period, but rather methods of production which will utilize the cheap, coarse products of the farm.

Save the Ewe Lambs

Save every ewe lamb possible for breeding, is the urgent message the Department of Agriculture is sending to sheep owners. Market for slaughter

only those being absolutely worthless for breeding stock. There is a strong demand among farmers for breeding stock and owners of ewe lambs should have no trouble finding a breeding market for them through county agents or the state agricultural colleges. Although prices for breeding stock are now high, those who start production of wool and mutton on a moderate scale will have no cause to regret purchasing breeding stock even at present figures.

Breed to Good Stallion

A low stallion fee is too often the deciding factor with many mare owners in the selection of a sire. A low service fee ought never to be a temptation but rather should be taken as a warning. A low fee is usually a sign of an inferior stallion. Colts from inferior or scrub sires will sell for much less than those sired by the sound, pure-bred stallion. This fact is well illustrated by facts given in a leaflet issued by the Wisconsin Live Stock Breeders' Association.

In this leaflet it is stated that a certain farmer had for several years been breeding his mares to a grade stallion. He finally decided to patronize a pure-bred. Some time after he held an auction sale. Yearlings, two-year-olds, and three-year-olds, all by the grade sire, sold for \$37, \$55, and \$76 a head respectively, while weanlings from the same mares, sired by a pure-bred stallion, averaged \$101 each.

In another instance it is reported that a company of farmers purchased a two-year-old pure-bred stallion. He was considered so good that the service fee was placed at \$25—\$10 more than any competitor. A three-year-old gelding sired by him was sold to a dealer for \$625, and not one went for less than \$225. A pair of grade mares sired by the same horse was sold to a man in Tennessee for \$750, while a colt not over twenty months old was sold at public auction for \$700.

These are not isolated cases but are given simply to show the greater profits that result from the use of pure-bred sires. Sound, high-class horses are the ideal farm power, and good mares bred to pure-bred sires of the same breed and conformation pay good profits, not only in the colts they produce, as has been shown, but also in the labor they perform. Poor horses render poor service and often cost more to keep than they are worth. The loss in feed consumed and lack of labor performed by the inferior and scrub horses of the country is enormous. This expense can be greatly reduced if farmers and mare owners will breed their mares to the right sort of stallions and produce the kind of horses the farm requires and the market demands.

The time to begin is now. All inferior pure-bred colts and all grade and mongrel colts should be castrated. Only the best mares should be retained, and these bred to sound pure-bred sires. One of the best ways to stimulate interest in the breeding of better horses is to arrange to hold a fall colt show. A string of promising colts will afford striking evidence of the result of breeding the best, and prove a splendid advertisement for the community.

Permanence is also the national slogan now.

H. M. Hill, of Lafontaine, Kansas, owner of the Sycamore Springs herd of Shorthorns, has spent twenty years collecting a herd of the useful type of Shorthorn cattle. During the past two years this herd has furnished foundation cattle to start a number of herds in Kansas, Oklahoma and the Southwest. The herd cows are richly bred in the blood of Ingle Lad and Imported Collynie and the chief stock bull used at the head of the herd is Master Dale by the great Avondale. These matings are proving very satisfactory in producing the right sort of useful cattle. A feature of the herd at this time is a choice lot of stock bulls and bred heifers, the kind that prove valuable on any farm with proper care.



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Ducklings Thrive in Hot Weather

WHAT can I do to help in our nation's crisis? This is a question many of the farm women are asking. The men are putting forth every effort to raise larger crops, but what can the women do?

There may be some who have strength and time to help in the fields, but to the busy farm wife who has but a few hours spare time and but a few more ounces of strength to help out the country's need I will offer a few suggestions which perhaps will be helpful.

There is gardening, canning and drying to be done. Vegetables, it is true, will be a great help toward feeding the nation, but what about the meat question? The prices of all kinds of meat are soaring to the skies. There are fewer early chickens hatched this year than usual because eggs were high and feed scarce. Late chickens are usually stunted by hot weather, but have the farm women tried raising summer ducks? Strange as it may seem, ducklings thrive best in hot weather, and it is during July and August that I hatched my large flocks of Buff ducks.

Ducklings are early and late foragers. It is no uncommon sight to see an old biddy groping blindly around in the dark and trying to follow her busy foragers. When the sun shines hot and water is available, they enjoy best of all to dive into its cool depths after crawfish, frogs, and water insects.

Some people may wonder where I get the eggs to hatch. This is very simple, as I raise the Buff ducks, which are all-year layers, and I always have the best success hatching the eggs. I have heard women complain that their ducklings ate too much. Upon being questioned, they admit that they fed them at least half a dozen times a day and the ducklings just hung around the house waiting for more feed. Such management, indeed, would be profitless, but young ducks, like people, can be trained to be lazy or industrious. They are smart creatures and soon learn when to expect their meals. I always feed them early in the morning and late at night when the chickens are on the roosts. During the day they are always off foraging among weeds and grass or in the water. Quite often they find so much I feed them just enough to let them know they have not been forgotten. They certainly convert waste into meat. I know of nothing that grows to maturity more quickly than ducklings. I feed them all the tough lettuce leaves from the garden, as this is one thing that cannot be dried or canned, and young ducks like nothing better.

In the fall I find that my ducklings have grown to be ducks weighing from six to eight pounds each. It is needless to tell of the good prices I get for them on the market, of the feathers, fancy stock, and eggs I sell, of the neat sum of money I have realized, which is nearly all clear profit.

I will only add that as I watch the hungry men eagerly devour a portion of a deliciously roasted duck, I know I have done my part.—MRS. FRED SIEGLINGER, Oklahoma.

Do Not Sell Laying Hens

In view of the high price of eggs last winter and the prospect for high prices next winter, H. L. Kempster, of the University of Missouri College of Agriculture, advises against the customary disposal of laying hens in early summer. In supporting his suggestion he offers the following:

"According to the New York Produce Review the egg receipts in New York up to March 28 were 205,687 cases short of last year's receipts, or in other words the receipts in 1917 are only 75 per cent as great as for last year. In January of this year eggs were 15 cents higher than last year; in February, 19 cents higher, and in March, 8 cents. The pros-

pects are that these high prices will continue.

"One egg dealer writes that in his opinion fresh infertile eggs will sell for not less than 25 cents a dozen throughout the summer. With these prospects ahead it is a mistake to sell the laying hen. She should be kept as long as she lays. If she goes broody she can be confined in a slat bottom coop for a few days, fed liberally, and thus be broken up. Poultrymen should also aim to keep as many mature pullets as possible next winter. The common practice of selling the largest pullets in the fall and keeping the small ones should be discouraged. It is the mature bird that will lay during the early fall and winter. Farmers should plan now to winter over large flocks. The sacrifice of the pullets last fall is being shown already by the egg shortage. That mistake should not be repeated a second year."

Approximately 5,016,000 dozen eggs spoil needlessly every year in cold storage simply because someone has let clean eggs get wet or has washed dirty eggs before sending them to market, according to the specialists of the United States Department of Agriculture. Careful investigations of large quantities of stored eggs show that from 17 to 22 per cent of washed eggs become worthless in storage, whereas only 4 to 8 per cent of dirty eggs stored unwashed spoil. The explanation is simple. Water removes from the shell of the egg a gelatinous covering which helps to keep air and germs out of the inside of the egg. Once this covering is removed by washing or rain which gets to eggs in the nest, germs and molds find ready access to the contents and spoil the eggs.

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120 HEAD OF HIGH GRADE HOLSTEIN cows and helpers, priced for quick sale. H. F. McNutt, Oxford, Wisconsin.

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FOR SALE—ONE THREE-YEAR-OLD registered Guernsey bull, well marked and a good breeder. G. D. Glidden & Sons, Homewood, Kansas.

THREE YOUNG, REGISTERED, BRED Red Poll females, two bull calves and one yearling bull. Tuberculin tested. Henry Murr, Tonganoxie, Kansas.

HIGHLY BRED HOLSTEIN CALVES, either sex, 15-16ths pure, crated and delivered to any station by express, charges all paid, for \$25 apiece. Frank M. Hawes, Whitewater, Wis.

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TAKEN UP—BY E. H. WALKER, RESIDING two miles north and three miles west of Anthony, Harper County, Kansas, May 27, 1917, one dark red Durham bull. No marks or brands. Appraised at \$50. C. E. Kennedy, County Clerk, Harper County.

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FOR SALE—COLLIE PUPPIES, HANDSOME, useful. \$7. Frank Barrington, Sedan, Kansas.

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MISCELLANEOUS.

FOR SALE—NEW KHAKI LADIES' Divided riding skirt. Price reasonable. Grace M. Latta, Wakeeney, Kansas.

FOR SALE—INSIDE SILO FORM, 10 feet D., metal covered, well made and braced, used once, good as new. Price, \$15 f. o. b. Jay B. Bennett, Holton, Kansas.

SITUATION WANTED.

EXPERIENCED FARMER WANTS A place on salary, or rent place furnished, stock and tools. Small family. Christian. Prefer Western Kansas. Box 44, Haviland, Kansas.

O. W. Long, Maitland, Missouri, one of the leading breeders of pure-bred stock in that state, reports his herds doing fine. He has herds of Shorthorn cattle and Poland China and Duroc hogs. A feature of his Shorthorn herd at this time is the choice lot of young stock by Prime Goods, a good son of Diamond Goods, the international grand champion. Mr. Long saved a fine lot of spring pigs this year, all of them by boars that are proven breeders. He reports a strong demand for breeding stock.



We desire to make this department just as helpful as possible, and believing that an exchange of experiences will add to its value, we hereby extend an invitation to our readers to use it in passing on to others experiences or suggestions by which you have profited. Any questions submitted will receive our careful attention and if we are unable to make satisfactory answer, we will endeavor to direct inquirer to reliable source of help. Address Editor of Home Department, Kansas Farmer, Topeka, Kansas.

Controlling House Ants

Much can be done towards avoiding a siege of house ants by keeping kitchen and pantry clean and by seeing to it that crumbs or small particles of other food are not allowed to accumulate on the pantry shelves, on the kitchen floor, or in the yard. Ants require very little tolling and it is easier to keep the kitchen and pantry free from them than it is to get rid of them after they make their appearance.

The following suggestions for ridding the house of ants are made by George A. Dean, entomologist at the Kansas Agricultural College:

"While there are three or four species of ants that occasionally get into the house, the little red ants and the little black ants are the most common and troublesome. The little red ant is the true house species, making its nest behind the plaster, wainscoting, or base-board and mantels, beneath flooring, and, in fact, wherever there are openings. The little black ant is not strictly a house species, although frequently found indoors and becoming at times as troublesome as the red ants. Its colonies are usually located under walks and stones, in the yard and under steps and low platforms.

The red house ant is usually difficult to eradicate, but, if the nest is found, two or three ounces of carbon bisulphide can be injected into it, which will kill the queen and workers present and the rest will then die out in time. The nest of the little black ant is more easily located by following the workers as they leave the house and go into the yard. The nest can be treated with hot water or by injecting carbon bisulphide, which may be applied through one or two holes in the top of the nest. These holes should be covered with earth after the carbon bisulphide has been put into them.

"Whenever the nests cannot be located, the only source of relief is the destruction of the ants in the house. One of the best means of effecting this is to attract the ants to sponges moistened with sweetened water and placed where they are most numerous. These sponges should be collected several times daily and emersed in hot water, which treatment will destroy the ants."

Methods Change

Our grandmothers' ways of doing things were good, especially for the time in which they lived, but the newer ways of doing many things bring about as good or much better results in less time and with the use of much less energy. Housekeeping has become a science and many intelligent, practical people are devoting their lives to the working of housekeeping problems and are giving to the housekeepers of the present day many helpful suggestions which can be profitably applied to their business—and housekeeping is a business.

As the farmer or any other business man finds he can secure valuable help from those who are making a scientific study of his business—if he understands how to sift the essentials from the non-essentials—so the housewife will find there are many fields from which she can glean helpful suggestions to use in her business. If she does not receive from the Federal Department of Agriculture or from the state agricultural college or university the bulletins prepared for her use, she is missing an opportunity to build up her business along many very practical lines. These bulletins are prepared by specialists in the subjects treated, and they have worked to practical solutions many of the problems which the housewife does not have time to solve. It is their business to give her this service and she will do well to make use of it.

Only a few days ago we were talking with a friend who is an excellent housekeeper and an economical one, and yet she did not know she could successfully can many of the vegetables which she grows every year in her garden. At present several members of the family are on a vegetable and fruit diet and she was complaining about the exorbitant prices asked for the products canned, and said she would be so glad when they could get them in their own garden. We asked if she did not intend to can an extra quantity this season, and her reply was that she had always canned as much of the vegetables and fruit that could be canned, as was needed for their use. We then asked if she had ever canned beans, peas, or corn. Her answer was that she had tried to can these vegetables but was not successful. Our conversation brought out the fact that she had never tried canning according to the methods so successfully worked out by experts in the government service in late years, and when we told of the success of canning clubs and of individuals through the use of these methods, she was very enthusiastic and asked where she might obtain these canning recipes. Now that she knows she can successfully put up at home many of the products she has heretofore bought in cans, she is going to increase the amount of garden put out this spring that she may take advantage of this means of decreasing the family's living cost.

Especially at this time when it behooves all of us to economize in every way possible and yet keep up our standard of efficiency, every housewife should be on these mailing lists as many suggestions will be directed along these very lines. Do you know what is a good substitute for potatoes or for meat? Do you know the benefits derived by the members of your family from the different foods you place before them? Do you know the foods that furnish protein, carbohydrates and fats, most economically? Do you know the value of these food constituents to the human body? These are a few of the usable facts which may be learned through the free service offered by the Federal Department of Agriculture and the state. It is your department and your state, and if you are not making use of this service it is your own fault.

Good pictures have a character value and for this reason the walls of the home should be hung with at least a few such pictures. They will have a part in the character building of the younger members of the family, which fully justifies their purchase. Pictures need not be expensive in order to be valuable. An inexpensive print of a good picture, framed in a way that will best emphasize its strong points, will do quite as well as a more costly one. The important thing to consider in buying a picture is whether or not it conveys an idea worth dwelling upon, or a suggestion worthy of imitation. If not, it should be left in the shop. Pictures, like books, influence lives, and should be chosen wisely—but at least a few should be chosen.

School Credit for Home Work

This new rule goes into effect in all the rural schools of Cook County, Illinois:

"Beginning September 1, 1917, all pupils will be required to obtain at least one achievement credit annually in order to pass from grade to grade above the fifth."

These achievement courses are all practical and fit into the lives of the

children. There are many different enterprises listed in the "recognized business school-home projects" and the child has the privilege of making his choice. But the work must be carried through to the end of the year and show a profit or he will not be promoted to the next grade—no matter how high a standing he may have in his book studies. But if the pupil lacks fifteen per cent of the standard grade for passing, in his book studies, if his achievement record is good it will count for this deficiency and he will be promoted.

We consider this a valuable advance step in the rural education system. The careful growing of a garden and the keeping of records in connection with his school work, will broaden the child's intelligence. He cannot work with a cow and keep records of feed and production without becoming familiar with fundamental principles which will be helpful to him whether or not he later becomes a dairyman. The girl who does canning work or sewing or garden work for

school credits will take a deeper interest in these different lines and will do the work better than if she is allowed to do them at her will.

Herein is the value of the boys' and girls' club work which is being given special attention in our own state at this time. The club member works intelligently and the results are satisfying because he knows just how they have been obtained. He works with a purpose and at the end of the year whether he stands at the top of the list or not he can see the value of his systematic work over careless methods. The club work gives the child confidence in his own ability to accomplish results through thought and application, and this is one of the most valuable lessons of life.

What a pity that not more children have the opportunity to make these achievement credits—particularly the children of the cities who so often are deprived of this contact with practical, growing things.

FASHION DEPARTMENT—ALL PATTERNS TEN CENTS

This department is prepared especially in New York City, for Kansas Farmer. We can supply our readers with high-grade, perfect-fitting, seam-allowing patterns at 10 cents each, postage prepaid. Full directions for making, as well as the amount of material required, accompanies each pattern. When ordering, all you have to do is to write your name and address plainly, give the correct number and size of each pattern you want, and enclose 10 cents for each number. We agree to fill all orders promptly and guarantee safe delivery. Special offer: To anyone ordering a pattern we will send the latest issue of our fashion book, "Every Woman Her Own Dress-maker," for only 2 cents; send 12 cents for pattern and book. Price of book if ordered without pattern, 5 cents. Address all orders for patterns or books to Kansas Farmer, Topeka, Kansas.



No. 7581—Girls' Middy Dress: Cut in sizes 6, 8, 10, 12 and 14 years. This dress has an underwaist fastening in the back and made without sleeves. To this is attached the side-plaited skirt. The middie jacket slips on over the head. The neck is finished with sailor collar and band cuffs finish the long plain sleeves. No. 7520—Ladies' Shirtwaist: Cut in sizes 34 to 42 inches bust measure. The front of this waist has an original cut inasmuch as the central portion extends up to the top of the collar, without any seam, and the sides of the front are gathered and attached to the edges of the shoulder extensions of the raglan sleeve. No. 8119—Girls' Dress: Cut in sizes 6, 8, 10 and 12 years. Fashion surely plays fair with the junior girl, in giving a design like this in a dress. The separate bolero is a feature that counts. It is worn over a simple waist, buttoned at the back and joined to a one-piece gathered skirt. A ribbon girdle is draped negligently at front after covering the joining. No. 8106—Ladies' Coat: Cut in sizes 36, 38 and 40 inches bust measure. For an up-to-date coat this will have style-deep beauty. Make yours like the one in the picture. Front and back, it has the straight-line effect so becoming to all figures, and is belted at the sides, with the ends of the belts inserted in plaits made in each half of the back and in front, as shown. No. 8103—Ladies' Skirt: Cut in sizes 24 to 30 inches waist measure. The deep yoke is not the only style feature of this two-gore model to draw admiration. There are gathered side panels to show Fashion's latest whim, and these are joined to the tops or the gores and gores and panels are attached to yokes. No. 8115—Ladies' Dress: Cut in sizes 34 to 42 inches bust measure. This may be just your idea of a dress in the season's mode. A basque waist and three-gore gathered skirt join at normal waistline and very good taste is shown in their trimming and novelty touches. The collar and cuffs of contrasting goods and braid trimmed give the waist its charm.

We Need Your Help In a Critical Time

KANSAS FARMER READERS CAN BE OF GREAT HELP TO THEIR FAVORITE FARM PAPER NOW

KANSAS FARMER comes to you through the mails. It is distributed under the jurisdiction of the Post Office Department, which has made some new rulings which the publishers of KANSAS FARMER must observe in respect to the procuring and continuation of subscriptions. During these critical times the rulings may be changed at any time, at the option of the Post Office Department.

The Postmaster General has made a ruling which makes it necessary that certain classes of subscriptions may not be carried after expiration. It has always been customary and permissible for the publisher to carry, at his option, subscriptions for a short time after they expire, in order that the subscriber might have an opportunity to renew his subscription and thus prevent his missing any copies of the publication.

The new rule, however, requires that this practice must be stopped.

We feel that you want KANSAS FARMER, because it is strictly a Kansas paper and is striving to help you in your work, and you certainly do not want to miss the good things that this old paper carries each week for the betterment of farm conditions. We do not want to discontinue your paper. We are very anxious to retain every one of our subscribers. In order to do so, we must urge that you send us your renewal subscription at once.

Here are four distinct offers which we submit to you. We will greatly appreciate your acceptance of any of them:

1. May we immediately have your renewal for one year at \$1.00?
2. If you send us \$2.00, we will renew your subscription for three years—a saving of \$1.00.
3. If you will send us the subscription of two of your neighbors for one year for \$1.00 each—\$2.00 in all—we will renew your own subscription one year without additional charge in appreciation of this service rendered.
4. If you will send us the subscriptions of four of your neighbors at \$1.00 each—\$4.00 in all—we will extend your subscription for a period of three years without additional charge.

We have provided a special blank below to be used in sending in your renewal subscription or the subscriptions of your neighbors. May we again urge you to co-operate with us by accepting one of the offers provided?

Special Club Subscription Blank

KANSAS FARMER, Topeka, Kansas.

I enclose \$.....for.....subscriptions to KANSAS FARMER for one year each. For this service I am to receive KANSAS FARMER for { 1 year } without additional charge. { 3 years }

Name

Address

Name

Address

Name

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Special Renewal Blank

(To be used in case Club Offer is not accepted.)

KANSAS FARMER, Topeka, Kansas.

Enclosed please find { \$1.00 } to pay for my renewal to KANSAS FARMER for { 1 year } { 3 years } as per offer above. { \$2.00 }

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SHEPHERD PONY FOR SALE

Shetland pony mare, not registered, coming three years old, bred to a registered Shetland stallion. Broke to ride. Will sell at a bargain if taken soon. Address:

D. CARE KANSAS FARMER.

PURE BRED POULTRY

PLYMOUTH ROCKS.

WHITE ROCK EGGS, \$4 PER HUNDRED. Nora Lamaster, Hallowell, Kansas.

BARRED ROCKS—SEVENTY-THREE premiums. Breeders for sale. Eggs half price. Mattie A. Gillespie, Clay Center, Kansas.

WARD'S BARRED ROCKS—FIVE YARDS both matings, from Chicago winners. Eggs, \$3 for fifteen. Send for catalog and list. W. H. Ward, Nickerson, Kansas.

RHODE ISLAND REDS.

SINGLE COMB RED EGGS, GOOD FARM range, \$4 per hundred; \$1.50 per thirty. Mrs. Rosa Janzen, Box 242, Geneseo, Kansas.

SIX GRAND PENS, ROSE COMB RHODE Island Reds that have shape, size and color. Mated to roosters costing \$15 to \$50. Fifteen eggs, \$2.50; thirty eggs, \$4; fifty eggs, \$6. Fine pure-bred range flock, \$5 per hundred. Baby chicks. Send for catalog. W. R. Huston, Red Specialist, Americus, Kan.

SEVERAL BREEDS.

BUFF DUCKS—DARK CORNISH CHICKENS. Sunnyslope Farm, Stillwater, Okla.

BARRED AND BUFF ROCKS—SINGLE Comb White Leghorns. Fawn and Pencilled Runner Ducks. Eggs—Fifteen, \$1; hundred, \$5, from range flocks. J. T. Rickman, Kiowa, Kansas.

FIVE LARGE FLOCKS UNDER ONE sale management, R. C. Red, Barred Rocks, Silver Wyandottes, White Wyandottes and White Leghorns, all on separate farms and specially bred by experts. Prize winners in all breeds. Eggs, \$5 per hundred, \$1.50 per setting. Order from ad. Address: E. H. Hartenberger, Route 4, Box 1, Newton, Kan.

BRAHMAS.

HIGH SCORING LIGHT BRAHMA EGGS \$1.00 per fifteen, parcel post prepaid. Geo. Pratt, Route 2, Topeka, Kansas.

PHEASANTS.

PHEASANTS—DEMAND UNLIMITED for Ringnecks this spring at \$6 to \$8 pair. Try them. Eggs from these, \$4 dozen; 24 for \$7. Harper Lake Poultry Farm, Jamestown, Kansas.

MINORCAS.

S. C. WHITE MINORCAS—EGGS FROM pure-bred birds, \$3 and \$2 per setting. Correspondence solicited. A. Goodwyn, Minneapolis, Kansas.

WYANDOTTES.

WHITE WYANDOTTE EGGS—STOCK from (Fishel World Best Direct) \$2.50 for 48, prepaid. S. Peltier, Concordia, Kansas.

SHUFF'S "BEAUTIFUL" SILVER WYANDOTTES. Eggs reduced to fifteen, \$1; fifty, \$2.75; hundred, \$5. Mrs. Edwin Shuff, Plevna, Kansas.

IF YOU WANT THE BEST SILVER Wyandottes, Barred Rocks or White Crested Black Polish breeding stock or eggs, write to William Nellers, Box T, Cascade, Iowa.

LEGHORNS.

PURE-BRED SINGLE COMB WHITE Leghorn eggs, 100, \$5. Chas. McFadden, Morland, Kansas.

SINGLE COMB BROWN LEGHORNS—Pullet mating only. Tiff Moore, Osage City, Kansas.

S. C. BROWN LEGHORNS—HAVE BEEN raising them 21 years, the 222 to 266 egg record kind. Under hens the fertility runs 95%. Eggs—Fifteen, \$1.25; 100, \$5. Safe arrival guaranteed. Gorsuch, Stilwell, Kan.

TURKEYS.

BOURBON RED TURKEY EGGS—TWO-year-old hen, 40-pound tom. \$3 setting. S. Peltier, Concordia, Kansas.

FEATURING THE MUCH WANTED "Goldbank" Mammoth Bronze turkeys. Eggs, \$1 each after April 1. Will book orders. Mrs. Iver Christenson, Jamestown, Kansas.

POULTRY WANTED.

WE PAY EXTRA FOR NON-FERTILE eggs. Want roosters, broilers, hens. Loan coops and cages free. The Copes, Topeka.

WHEN WRITING TO ADVERTISERS PLEASE MENTION KANSAS FARMER

FARM AND HERD NEWS NOTES

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O. W. Devine, Representative

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CLAIM SALE DATES.

Jerseys.
June 26—Dr. J. H. Lomax, St. Joseph, Mo.
Sale at farm near Leona, Kansas.

Shorthorns.
June 22—Park E. Salter, Wichita, Kansas.
Sale at farm.

Holsteins.
Oct. 16—The Nebraska Holstein Breeders' Consignment Sales Co., Omaha, Neb.; Dwight Williams, 103 Bee Bldg., Omaha.

Poland Chinas.
Aug. 15—H. L. Faulkner, Jamesport, Mo.
Oct. 4—Dr. J. H. Lomax, St. Joseph, Mo.
Sale at farm near Leona, Kansas.
Oct. 5—U. S. Byrne, Saxton, Mo.
Oct. 16—H. B. Walter & Son, Emingham, Kansas.
Oct. 17—Walter B. Brown, Perry, Kansas.

C. E. Hill, of Toronto, Kansas, who is one of the successful Shorthorn breeders in this state, reports his herd doing well and all young stock growing out fine. A feature of the herd at this time is the choice lot of youngsters sired by the pure Scotch bull, Bettie's Albion. This lot includes some choice young bulls.

R. C. Watson, of Altoona, Kansas, owner of good herds of Shorthorn cattle and Duroc hogs, reports his herds doing well and the young stock growing out fine. Mr. Watson saved a very choice lot of Duroc pigs this year. They are the big high-quality kind and are of the best blood lines. He also has a fine lot of young stock in his Shorthorn herd, including some fine young bulls.

T. R. Maurer & Company, owners of Maurer's Holstein Farm, Emporia, Kansas, report their Holstein herd doing well and a brisk demand for high class Holsteins. Mr. Maurer has just returned from an inspection of a number of good eastern herds and while on this trip he purchased a choice lot of pure-bred cows, yearling heifers and calves of both sexes.

The public sale of double standard Polled Durham cattle held by Ed Stegell, of Straight Creek, Kansas, on June 8, was attended by a large crowd of Shorthorn and Polled Durham breeders from a number of states. The forty-six head sold for \$17,735. Ten bulls averaged \$525, including a number of yearling calves. Thirty-seven females averaged \$577.75, including seven young heifers less than a year old. These figures would indicate an increasing demand for this popular breed of hornless cattle. The sale was conducted by Colonel Price and the prices received for the entire lot were very satisfactory to Mr. Stegell.

S. E. Smith, of Lyons, Kansas, owner of one of the good herds of pure-bred Hampshire hogs in Kansas, reports his herd doing well and young stock growing out fine. Mr. Smith has been breeding Hampshires for a number of years and has found them a very profitable hog. He has the big easy feeding type and the blood lines of his herd are the best of the breed, including Col. Stone, Pat Malloy and Eagle Chief breeding. A feature of his herd at this time is a choice lot of October boars and gilts.

Mr. W. H. Mott, of Herlington, Kansas, owner of one of the good herds of Holsteins in Kansas, reports his herd making a good record. He has both registered and high grades. A feature of the herd at this time is a choice lot of pure-bred bulls and about seventy-five grade two-year-old heifers, all bred to a registered bull.

We have just received Volume 51 of the National Duroc Jersey record. This volume contains the records of males from No. 103501 to 201499; females from 484700 to 508698, and the usual amount of information that should be in the hands of every Duroc breeder.

L. M. Fish, of Bolivar, Missouri, owner of good herds of Chester White and Duroc Jersey hogs, reports his herds doing well. He saved a fine lot of pigs of both breeds this year that are growing out fine. The winnings of his show herds during the past few years were very heavy, few show herds equaling them in number of prizes won.

At the dispersion sale of R. J. Linscott's famous Register of Merit Jersey herd, held May 31, some new Kansas record prices were made. Jacoba Irene's Premier sold for \$850 to H. C. Taylor, of Beloit, Wisconsin, which is the highest price ever paid for a Jersey bull at auction in this state. Three of his two-year-old heifers sold for an average of \$256.66. Four of his heifer calves under four months old sold for an average of \$111.25. A double grandson four months old sold for \$200, which is the highest price for a four-month-old bull calf at auction in Kansas. The highest-priced cow was Gamboa's Knight's Beauty, a daughter of Gamboa's Knight, just past two years old, and she certainly is a beauty—sold for \$500, which is the highest price ever paid for a Jersey cow in Kansas at auction. Her six-days-old calf sold for \$100. The next highest priced cow was Majesty's Golden Eva, that sold for \$460, and her seven-days-old calf sold for \$145, which is the highest price ever paid at auction for a week-old heifer in Kansas. Both these cows were bought by A. H. Wood, of Braman, Okla.

Real Estate For Sale

360 ACRES CREEK BOTTOM FARM
160 acres fine alfalfa, wheat or corn land; 20 acres meadow; 180 acres pasture; \$5,000 worth of improvements. Splendid oil and gas prospect. Bargains. Act quick, only \$45 per acre.
M. T. SPONG - - FREDONIA, KAN.

WANTED

To trade first-class farm in Iowa or Minnesota for high-class herd of Shorthorns or Herefords. Nothing but top quality cattle considered. Give complete information concerning herd in first letter. Will give complete description of property and location of same in reply.
AMOS BURHANS - - Waterloo, Iowa

FOR INSIDE INFORMATION on oil lands or poultry and vegetable tracts, write
SOUTHERN REALTY CO., McAlester, Okla.

Government Red Soil Fruit Land can be located on Desert Act near Delta under newly completed irrigation system. Easy payments. Thompson, 515 Denham Bldg., Denver, Colo.

LANE COUNTY KANSAS

Several good smooth wheat farms at from \$10 to \$15 an acre. A choice improved half section three miles from Dighton for \$8,000. Get my bargain list.
C. N. OWEN - - DIGHTON, KANSAS

GALLOWAY CATTLE.

GALLOWAY BULLS

SIXTY yearling and two-year-old bulls, strong and rugged; farmer bulls, have been range-grown. Will price a few cows and heifers.
R. E. FRIZELL, Frizell, Pawnee Co., Kansas

AUCTIONEERS.

Jas. T. McCulloch Live Stock Auctioneer. I make sales anywhere.
Write for date. CLAY CENTER, KANSAS

LESTER R. HAMILTON Live Stock Auctioneer
Write for terms and date. Clarksdale, Mo.

homa. Gamboa's Knight, the next highest priced bull, was bought by W. S. Sanders, of Berryton, Kansas, for \$495. Thirty-two of his get were sold at an average of \$180.15 and included a seven-days-old heifer at \$145; five bulls from one to eight months old at an average of \$131.25; six heifers under six months old at an average of \$127.50; eleven yearling heifers at an average of \$175.45; and eleven two-year-old heifers at a average of \$233.18. One hundred and twenty-one head were sold, aged from five days to thirteen years, and they brought an average of \$197.77. Four aged bulls sold at an average of \$472.50. Four bulls from eight to twelve months old averaged \$198.75. Twelve bull calves from six days to four months old averaged \$75.83. Seventy-three cows from two to thirteen years old averaged \$227.05. Eight yearling heifers averaged \$168.12. Twenty heifer calves from seven days to twelve months old averaged \$114.37. One hundred and one females aged from seven days to thirteen years averaged \$200.14. Eighteen states were represented among the bidders, including far-away Georgia. Sixty-two different people bought the cattle, three of them being women, and they seemed as capable judges as the men. Eighty-five cattle were bought by forty-eight Kansas people, but only four remain in Jackson County. Four were bought by a Wisconsin man; eight by six people in Missouri; nine by three men in Nebraska; thirteen by four men in Oklahoma, while two went to a man in Arkansas.

The Nebraska Holstein Breeders' Consignment Sales Company will hold its next sale at South Omaha, Nebraska, October 18. Sixteen of the leading Holstein breeders of Nebraska will consign to this sale, including the University of Nebraska and the United States Indian School at Genoa, Nebraska. The other consignors are: B. B. Davis, Omaha; B. E. C. Brown, Fullerton; LeRoy Ball, Albion; W. J. Jenkinson, Monroe; D. M. Hildebrand, Seward; J. F. Bunty, Cortland; Nelson Bros., Stromsburg; W. M. Condon, Humphrey; Little & Little, Clarks; C. J. Furry, Franklin; E. C. Swanson, Stromsburg; Kirk Griggs, Beatrice; and Dwight Williams, Omaha. Some of the best animals from the herds of each of the above breeders will be in the sale, including individuals that are winners at the fall fairs. The sale will be under the management of Dwight Williams.

Catalogs are out for the Shorthorn sale to be held by Park E. Salter, Wichita, Kansas, on Friday, June 22, at Park Place Farm near Augusta, Kansas. Fifty head of Shorthorn cows and heifers have been catalogued for this sale. The offering contains an unusual number of big flat-backed breeding cows. One feature of the sale will be the large number of cows and heifers with calf at foot or bred to imported bulls. Seven cows have calves at foot and ten are showing heavy to imported sires. Mr. Salter has two imported bulls—Bapton Corporal and Newton Friar. A number of these cows and heifers are bred to either Rosewood Dale or Maxwellton Aviator, both sons of the noted Avondale. A few are in calf to Roan Major, an intensely bred milking strain sire.

A. S. Alexander, of Cedar Row Farm, Burlington, Kansas, who owns one of the great herds of old original Spotted Polands, reports his herd doing fine. Mr. Alexander saved a large number of spring pigs this year. These pigs were sired by some of the best boars of the breed and are out of the famous brood sows in his herd.

SHORTHORN CATTLE.

15 Shorthorn Bulls

Reds and roans. Pure Scotch and Scotch-topped yearling bulls, 10 to 18 months old, at farmer prices. Farm at Pearl, Ship over Rock Island, Santa Fe, Union Pacific and Missouri Pacific. Come and see me.

C. W. TAYLOR, Abilene, Kan.
Dickinson County.

Sycamore Springs Shorthorns

Master of Dale by the great Avondale heads herd. A few young Scotch bulls and bred heifers for sale.

H. M. HILL - LAFONTAINE, KANSAS

SPRING CREEK SHORTHORNS
Headed by the great sire, Orange Gooda. Best families represented in herd, good individuals. Choice young stock for sale.
THOS. MURPHY & SONS, Corbin, Kansas.

Sunflower Herd of Shorthorns

A few good cows and heifers for sale, also choice bull calves. Come and see my herd.
A. L. HARRIS - OSAGE CITY, KANSAS

TWO SHORTHORN BULLS. Duroc herd boar. Fall gilts, bred or open. February and March pigs, pair or trio, no relation.
R. C. WATSON - ALTOONA, KANSAS

THREE SHORTHORN BULLS
Fourteen to eighteen months old. Red, white, roan. Sired by Bettie's Albion 399451. Pure Scotch.
C. E. HILL - - TORONTO, KANSAS

ALYSDALE HERD OF SCOTCH SHORTHORNS
Prince Valentine 4th and Clipper Brawith in service. Orange Blossoms, Butterflies, Queen of Beautys and Violets. Choice young stock for sale.
H. H. HOLMES, Route 28, Topeka, Kansas

SHORTHORN BULLS

A two-year-old herd bull, dark red, fine individual. Also six-months-old bulls for sale.
H. W. ESTES, SITKA, CLARK CO., KAN.

POLAND CHINAS

OLD ORIGINAL SPOTTED POLANDS
Choice March and April pigs of both sexes.
H. A. MATTOX, Route 2, Burlington, Kan.

Langford's Spotted Poland. Gilts bred for fall farrow. Future herd boars. Satisfaction guaranteed. T. T. LANGFORD & SONS, Jamesport, Missouri

BIG-TYPE POLANDS AND DUROCS

SHORTHORN CATTLE
Booking orders for weaning time. Pigs, \$25 each, trios \$50. Will make 700 to 1,000-pound hogs. Two hundred to select from. Top breeding. Eight choice Shorthorn bull calves. Priced reasonable. Write me your needs.

O. W. LONG, Route 3, Maitland, Missouri.

POLAND CHINA HOGS 150 HEAD IN

HERD
Breeding stock for sale. Immune. Satisfaction guaranteed. Come and see me.

V. O. JOHNSON - AULNE, KANSAS

TOWNVIEW HERD BOARS

Ten big stretchy fellows farrowed in June. Every one a good one. Two choice fall yearlings. I ship my boars and gilts any place on approval. They make good. Prices are right. CHAS. E. GREENE, Feabody, Kan.

POLAND CHINA BOARS

Twenty-five choice spring boar pigs sired by Caldwell's Big Bob, Big Hadley Jr., King Price Wonder, Columbus Defender, Big Bob Wonder and Fessey's Tim. Some fine prospects and priced reasonable. Immune.

BERT E. HODSON, ASHLAND, KANSAS.

BEAVER'S POLANDS

Good stretchy Poland China spring boars, sired by Kansas Giant by the 1,135-pound The Giant. Others by a good son of the 1,125-pound Big Tim, out of Expansion sows. Choice, \$25.

ED BEAVERS
Route 2 Junction City, Kansas

OLD ORIGINAL SPOTTED POLANDS

Stock of all ages, sired by seven of the very best boars of the East and West. Priced right. Write your wants to the
CEDAR ROW STOCK FARM

A. S. Alexander, Prop. Burlington, Kansas

Henry's Big-Type Poland

Spring pigs, either sex. June delivery. Sired by Mammoth Orange, King Price Wonder, Big Wonder. Choice of lot, \$35. Trio, \$100. Others, \$25. First check, first choice.
JOHN D. HENRY, LECOMPTON, KANSAS

HAMPSHIRE HOGS

High Quality Hampshires Sold on Approval. Fall boars and gilts; weanling pigs, either sex, not related, by a son of Paulsen's Model.
F. B. WEMPE, Frankfort, Kansas.

HALCYON HERD HAMPSHIRE HOGS
Best breeding, best type. Stock for sale.
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SMITH'S HAMPSHIRE

Bred gilts and choice boars, October farrow. Prize winning breeding. Also herd boar, priced to sell. S. E. SMITH, Lyons, Kansas.

PARK E. SALTER, WICHITA, KANSAS

SELLS

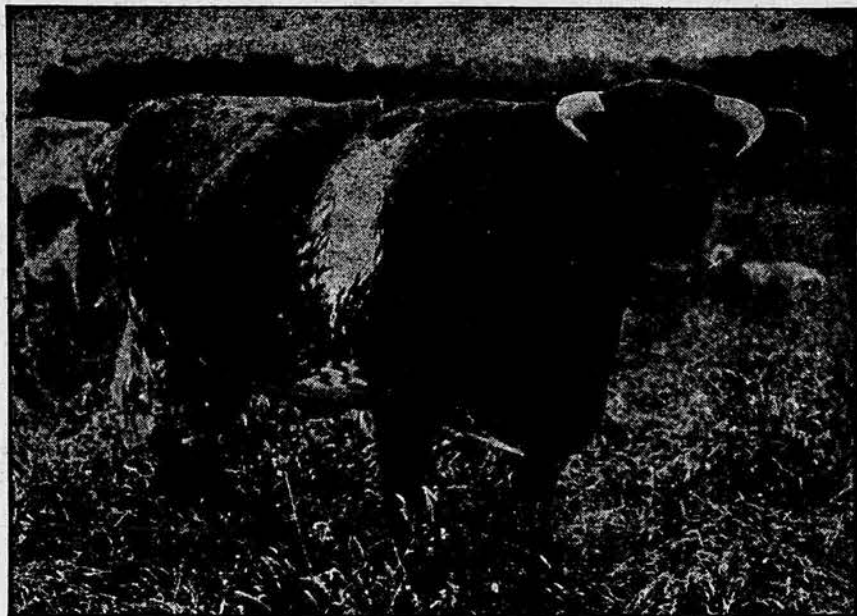
50 SHORTHORN COWS AND HEIFERS

AT PARK PLACE STOCK FARM, NEAR AUGUSTA, KANSAS

WICHITA, KANSAS, FRIDAY, JUNE 22, 1917

SPECIAL SANTA FE TRAIN WICHITA
TO PARK PLACE FARM AND RETURN

Sale Under Cover, Rain or Shine



Fifteen Canada cows.

Twelve cows with calf at foot by imported bull.

Fifteen 3-year-old heifers safe in calf, will make fine herd cows.

Big broad-backed breeding cows and heifers that will grow into large useful cows.

Most of the cows and heifers of breeding age are showing safe in calf to imported Newton Friar, Rosewood Dale by Avondale, Maxwellton Aviator by Avondale, and the great milking strain bull, Roan Major.

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BUY JERSEYS

SHE'S THE MONEY COW

50 - Head Pure Bred Jerseys - 50

OWNED BY J. H. LOMAX

LEONA, KANSAS, TUESDAY, JUNE 26, 1917

At the farm, on Grand Island Railroad, 28 miles from St. Joseph, Mo. Popular sires and best blood lines.

This is one of the best herds in the West, and the quality is unusually good. Heavy milking cows and many promising young things.

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EDGEWOOD FARM**REGISTERED ANGUS BULLS.**

HAVE FIFTEEN STRONG YEARLING BULLS FOR SALE.

D. J. White, Clements, Kansas**DUROC JERSEYS.****LONE TREE DUROC FARM**
Herd Boar Graduate Prince by Graduate Col. Sows, Ohio Chief, Tatarraz, Model Top and Good Enough Again King blood lines. Spring pigs, two for \$35.00, three for \$45.00; not related.**GEO. J. BURKE, LITTLE RIVER, KANSAS****IMMUNE DUROC-JERSEYS**Forty-five head spring boars and gilts, March and April farrow, by Gano Pride 2d by Gano Pride, out of a Graduate Col. sow. Herd sows best of breeding. Write for prices. **T. F. DANNER, Winfield, Kansas.****McBRIDE'S DUROCS**Bred gilts for September farrow and boar pigs for sale from four to six months old. **W. T. McBRIDE - PARKER, KANSAS****WHEN WRITING TO ADVERTISERS PLEASE MENTION KANSAS FARMER****GUERNSEY CATTLE.**Choice Guernsey Calves—Ten heifers, 15-16ths pure, beautifully marked, from heavy-producing dams. \$20 each. Satisfaction guaranteed. **L. Terwilliger, Wauwatosa, Wis.****AYRSHIRE CATTLE.****AYRSHIRE COWS.**
For Sale—Heavy producing registered Ayrshire cows and heifers, bred to freshen in October. Also a few young bulls. **H. H. HOFFMAN - ABILENE, KANSAS****H. A. Mattox, of Burlington, Kansas, has succeeded in building up a herd of pure-bred old original Spotted Polands that are the profitable type. His foundation stock was from the leading herds and he has the best blood lines of the spotted breed. This year he saved a choice lot of spring pigs that are growing out fine. Mr. Mattox has found the Spotted Polands very prolific, as well as profitable feeders.****HOLSTEIN CATTLE.****HOLSTEIN**

TUBERCULIN TESTED.

The Only Test of Economical Productions.

Ten A. R. O. cows on semi-official yearly test now. Ten more to start this fall. Just now we have no bulls for sale, but let us reserve you one from our next crop. The creditable yearly records which our cows are making will make these bulls go fast.

E. S. ENGLE & SON**ABILENE, KANSAS****MAURER'S HOLSTEIN FARM**

Has just received another choice lot of young pure-bred cows and springing heifers. Also some extra good registered yearling heifers and a fine lot of registered calves of both sexes. Write for pedigrees and prices, or call.

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We have a choice lot of extra large high-grade Holsteins, including fresh cows, heavy springing cows and heifers, and young calves. Registered bulls. Come and see our herd. We meet you at train an guarantee satisfaction.

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High grade cows and heifers, carloads or less. Calves crated and shipped anywhere, price \$20.

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REGISTERED COWS, HEIFERS AND BULLS.

Nice lot of grade cows and heifers.

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A. R. O. dams. A tested bull. One cow even made it 12 months after calving.

GEO. C. TREDICK
Route 2
Kingman, Kansas**HOLSTEIN CALVES**Very high grade heifer calves, five weeks old, nicely marked, \$25 each delivered to your station. We can supply you with registered or high grade Holsteins, any age or number, at reasonable prices. **Clover Valley Holstein Farm, Whitewater, Wisconsin.****GREENSWARD HOLSTEINS.**

Choice bull calves, heifers, cows. Registered and best breeding. Herd tuberculin tested. We are breeders, not dealers.

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Spring Pigs in Pairs and Trios
Not related, from my undefeated show herd 1916. Ship at weaning. Send for prices and show record. **COLEMAN & CRUM, Danville, Kansas.****O. I. C. SPRING PIGS, BOTH SEXES.**Bred gilts.
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Registered Chester White and Duroc Jersey Hogs—Half-ton kind.

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Ten stallions ready for heavy stand; also yearlings and twos. Young fillies, also mares with colts by side and bred again. All registered. One hundred individuals of first rank for sale.
FRED CHANDLER, R. 7, Chariton, Iowa
Just above Kansas City**Barn Full of Percheron Stallions and Mares.** Twenty-five mature and aged jacks. Priced to sell. **AL. E. SMITH, Lawrence, Kansas.****HOLSTEIN CATTLE.****FRIESIANS**

LONG-TIME TEST.

Ten A. R. O. cows on semi-official yearly test now. Ten more to start this fall. Just now we have no bulls for sale, but let us reserve you one from our next crop. The creditable yearly records which our cows are making will make these bulls go fast.

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Seventy-five head of high-grade and registered coming 2-year-old Holstein-Friesian heifers for sale, bred to a registered bull. Six choice pure-bred Holstein bulls old enough for service. Come to Herington or send us mail order. We guarantee to please you.

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Buy your next bull calf from a herd that won the butter test over all breeds.

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We are making very low prices on a few young bull calves. It will pay you to buy them of us while young. Sired by our 29.4-pound grandson of Pontiac Korndyke.

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12 heifers 15-16 pure bred, 4 to 6 weeks old, beautifully marked, \$20 each. Safe delivery and satisfaction guaranteed.

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Bull Calves by Walker Copia Champion, whose dam and sire's dam each held world's records in their day.

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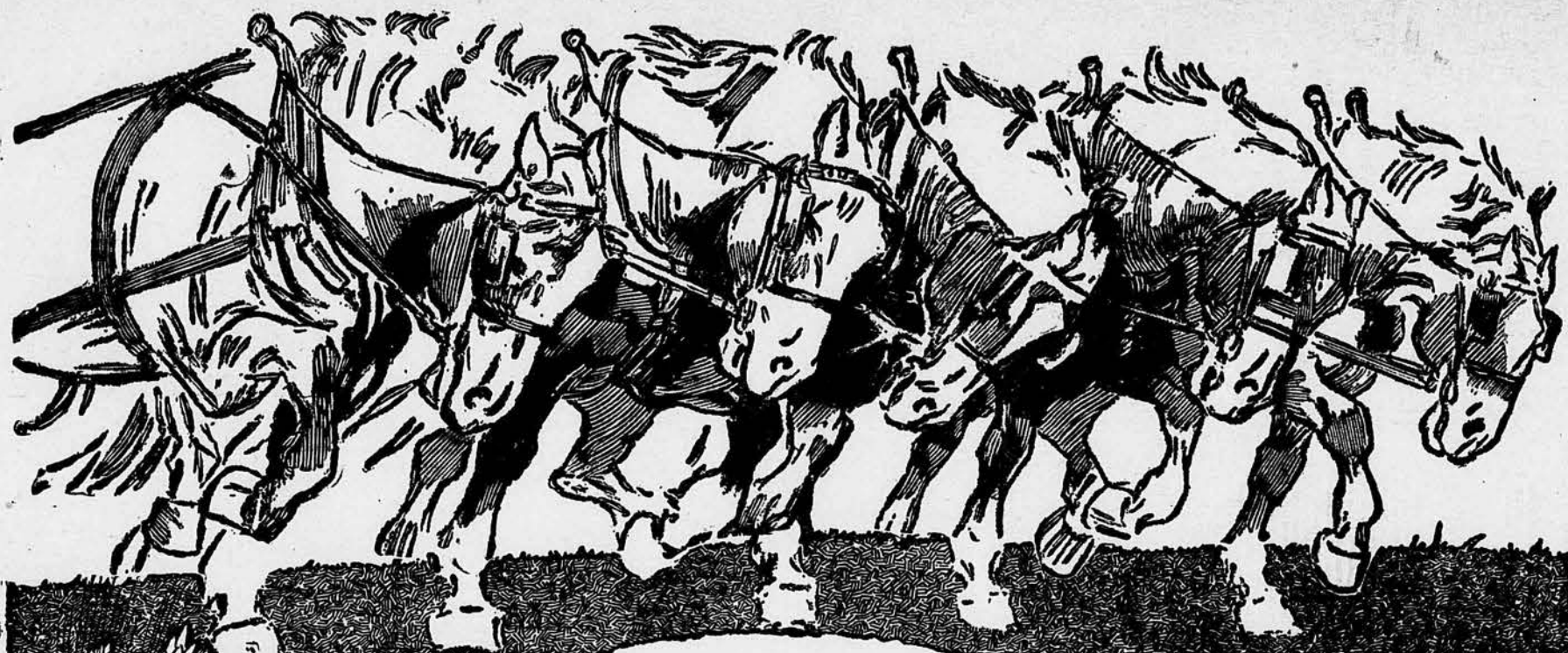
Pure-bred and high grade. Forty bred yearlings, superior individuals, all from profitable dams, now for sale.

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Grandsons of Golden Jolly and Noble of Oaklands for sale. Also a few fancy cows and heifers of same breeding. Write.

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Registered Jersey Bulls, butter-bred, from high producing cows. Photo furnished. Maxwell's Jersey Dairy, Route 2, Topeka, Kan.



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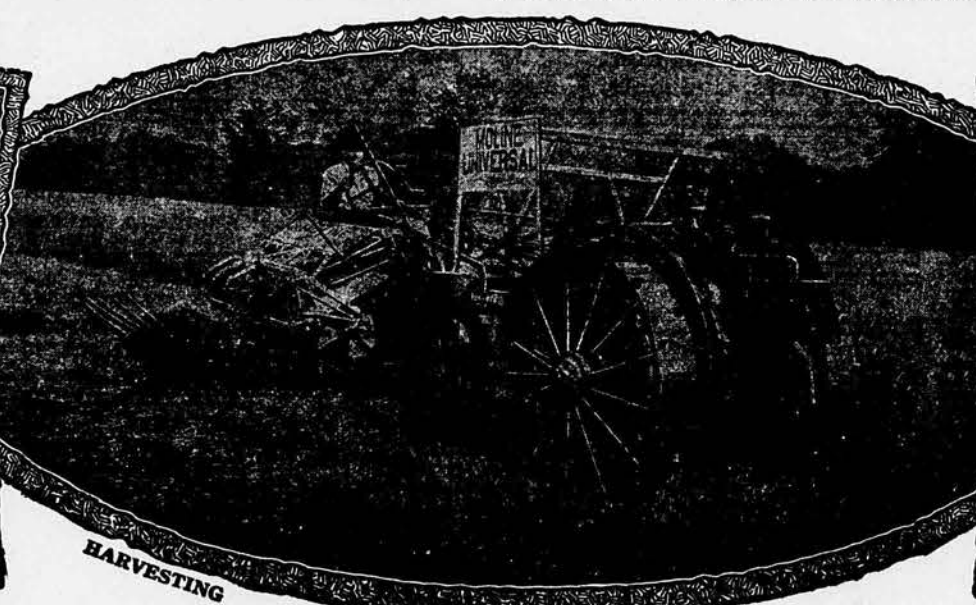
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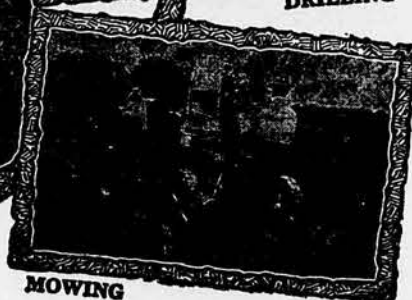
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