

KANSAS FARMER

For the improvement of the Farm and Home



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BUILD A SILO OR SELL CATTLE

Store All Feed Grown in a Silo and Hold Your Live Stock

THE silo is rapidly becoming a badge of agricultural prosperity wherever live stock is kept. Enough rough feed can be grown in Kansas every year, no matter what the season, to carry our stock through the winter if properly preserved. By storing in the silo all rough feed grown it would even be possible to increase the live stock of the state, for there are big feed years followed by poor feed years, and silage stored in the years of surplus feed can be used to supplement the supply of feed in the lean years.

The primary purpose of a silo is to conserve the forage part of the crop. Making the most of the by-products of grain farming is a profitable practice at all times. In a year when fodder may be the whole crop, having a silo may easily make the difference between profit or loss in farming. Corn, kafir, and others of the feed crops are seriously in need of rain at the present time. If the moisture supply continues short through the balance of the season, feed crops are sure to be short, and in some sections grain may fail entirely.

The partly grown or stunted feed crop may not seem to be worth much, but if neglected it will be a total loss. If given every chance possible through proper cultivation and then stored in a silo when it can do no more, its maximum value can be realized and a profit made from what would otherwise have been lost completely.

Karl Knaus, county agricultural agent of Cloud County, has been studying the present situation in the light of his experience and observations of former years. Here is what he says on the silo and live stock question:

"We are facing a short crop in North Central Kansas. In checking up our available roughages, it would seem that we will have an abundance in spite of the continued dry weather. The first cutting of alfalfa was good except in districts which were visited by the hail-storm June 5. The second crop of alfalfa was very short and unless we have rain there will be no third crop to speak of. Many fields of oats are not worth threshing and are being put in the barns or stacked for winter feed. The corn and kafir acreage, however, is much larger than usual this year and even if they do not mature grains they will add to our supply of rough feed.

"To the man who has no reserve of silage the present prospect is rather gloomy. Pastures are drying up rapidly and cattle are beginning to lose instead of gaining. Milk cows are falling off materially in their milk flow and must be fed in addition to what they get on the pasture. Our farmers are undecided whether to try to hold on a little longer or sell their stock now before prices tumble badly. I hear dairymen worrying for fear they will be compelled to sell some of their good producing cows.

"This is just a repetition of what happens every time this country is a little more dry than usual. We are compelled to sell our cattle when feed gets short and usually in such cases prices are low because everybody is in much the same condition. Then we have to begin all over again and slowly build up our herds

from what breeding animals are left or by buying when everyone else wants to buy and prices are high. One of the most profitable things we ever did on our home farm was to hold all the cattle we had during the dry year of 1902. Next year these cattle were in big demand. The fall before no one wanted them.

"The silo is one of the very best means of conserving our supply of rough feed. Dairymen having small silos filled with silage are keeping up the milk flow from their cows right now. Nine years in ten it is profitable for dairymen to supplement the pastures with a little silage in late July and through August. In fact many dairymen say that pasture is the most expensive feed they have.

"If corn and kafir are stored in the silo, the crop will feed much farther

than if fed as fodder or pastured. Loss of food nutrients from the silo will run very little if any over ten per cent, while loss from shock fodder quite frequently runs as high as forty per cent if left in the field until late winter. This difference of thirty per cent will help wonderfully in carrying cattle through the winter until grass is in good condition. This does not take into consideration the facts that the silage is more palatable or that cattle must handle less bulk of feed to get the same nourishment. Another thing, cattle fed silage seem to crave some dry feed and will eat considerable straw, while if fed on dry feeds entirely they would not eat much straw unless compelled to.

"There is only one type of live stock farmer that may have no use for a silo, and that is the man who buys feeders

and finishes them as quickly as possible. Cattle handled this way require a very concentrated ration in which there is no place for silage. Unless we get rain soon, however, farmers of this type will be hard to find in Kansas this year."

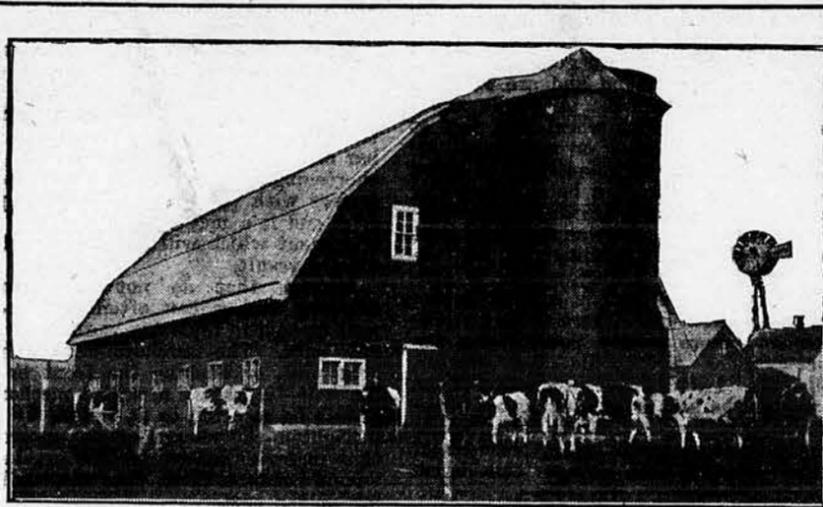
Mr. Knaus has arrived at logical conclusions on the place of the silo in our farming system. Too great emphasis cannot be placed on the now well established fact that placing corn, kafir, or cane in the silo at the proper stage makes of this low-grade roughage a feed of far greater value than if stored as fodder in the shock. The fundamental principle of a silo is that it so conserves the feeding value of roughages—the by-products of grain farming—that they can be fed to animals and return a profit.

Farming is a business that depends much on weather conditions over which no man has any control; We can only accept conditions as they come and make our plans accordingly. While we cannot be sure of the weather, there is one line of procedure that is always in order, and that is to plan for the fullest utilization possible of the rough feed that grows even under adverse conditions. If we are equipped to do this, and have good live stock, we need not worry over the consequences of a poor crop or one of low quality. We can be sure of making some money from the roughage even in a year when grain fails entirely.

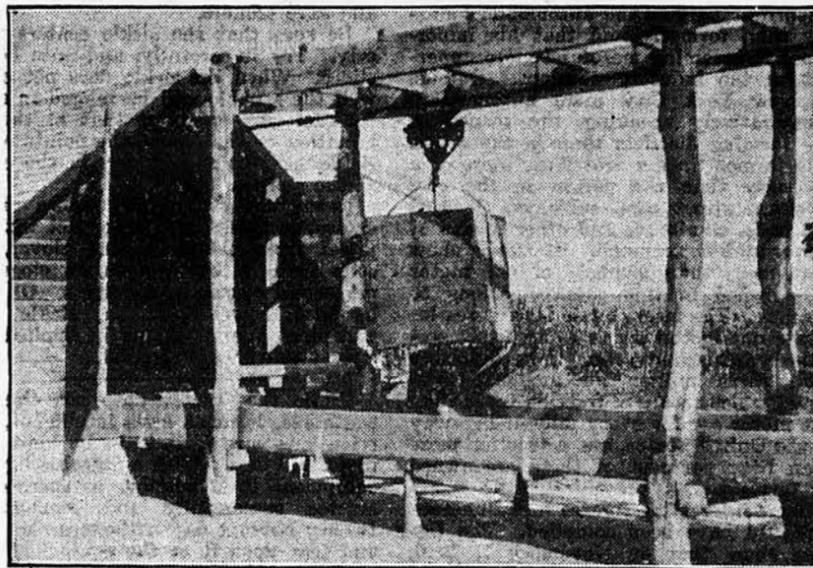
We feel sure that the logical thing for the live stock farmer is to plan now to make the most of the forage part of the crop. Whether you build a silo or not, you will have to pay for one in the loss sustained. Will you build a silo and make live stock farming safe, or sell your stock at a sacrifice and then have to slowly build up your herd and face the possibility of going through the same experience again in a few years?

Big Yield on Early Plowing

A splendid demonstration of the value of early plowing in producing large wheat yields was reported recently in the Chetopa Advance. Bert Greene and his son Raymond, who are among the most successful farmers in that part of the state, have just harvested a field of wheat where early July plowing and late plowing were in the same field. They were plowing this field last summer in July in preparation for wheat, but something happened that called them from the field before it was all plowed. They finished the plowing just before sowing the wheat in the fall. On the July-plowed land the wheat will thresh out about twenty-five bushels to the acre, while on the part plowed just before seeding the yield will not be more than eight bushels to the acre. The line where the July plowing ended in the field is distinctly marked as the wheat stands in the shock. Absolutely the only difference in the two parts of the field is in the different dates of plowing. It cost no more to plow in July than it did in September, so the twenty-five bushel yield has not cost any more than the eight bushel yield.



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FARM POWER

Items of Interest About Automobiles, Engines, Tractors, and Motorcycles

OIL and grease on a tractor are cheaper than repairs plus time lost in obtaining them and getting started again.

Looking over all parts of the machine regularly is just as important as regular feeding and watering of horses.

The wrong kind of lubricating oil wastes power and fouls every working part. Get instructions from the builders as to kind and quantity of oil.

These are tractor suggestions from the horse and machinery committee of the Kansas Council of Defense.

Sharp plows, it is further pointed out by the committee, call for less power from the engine to do good work, hence less cost to operate and longer life for the tractor. Lengthening of hitches between engine and plow will often eliminate a large part of side draft, which is another way of reducing the cost of the work.

A good headlight, moreover, will greatly increase the usefulness of the engine.

Purchasing Farm Tractor

Extensive preparation for the seeding of a large acreage of fall grain is creating a larger interest in farm tractors. Many farmers are thinking of purchase and yet are at a loss to know what constitutes a durable and economical machine and one adapted to their particular needs.

The problem of selecting a farm tractor is one requiring the most careful investigation and study before the purchase is made or much dissatisfaction and loss is sure to result.

It is very unwise to decide solely from what a public demonstration shows. The clever operator knows how to hide the weakness as well as display the good points of his machine.

There are many different types of tractors, one of the commonest of which is the four-wheel type with gears all enclosed and running in oil.

Many tractors give a good account of themselves at plowing and are of little value in other work. A single small narrow rim steering wheel will fail at harrowing in mellow or soft land, although perfectly satisfactory for other work. Some types can be satisfactorily turned only in one direction. Any machine will need occasional adjustment and repair. Accessibility to all the working parts is a factor that is generally overlooked, yet is a very important consideration. There is less vibration and more steady power with the four-cylinder automobile type motor, but the two-cylinder opposing type motor is the better adapted to the burning of kerosene. Opinions differ as to whether kerosene is more economical than gasoline, all things considered.

Farmers Own Half of Autos

It is pointed out in a recent issue of the Implement and Tractor Trade Journal that the farmer is playing a more important part in the automobile industry than formerly and that his importance is becoming more and more apparent as the industry develops. Outside of New York City more automobiles, comparatively speaking, are owned in the farming districts than in the cities. The farmer finds a motor car more of a necessity than the person in the city who has street cars, subways, elevated railroads, omnibuses and other means of travel at his command. Statistics show that more than one-half of the motor cars owned in this country belong to farmers. The latest available figures indicate one motor car to every forty persons in this country and there are more than three million automobiles registered, which means a fraction more than one motor car for every mile of highway in the United States, and a fraction more than fifty per cent of these are owned by farmers.

Some interesting figures for Minnesota for 1916 have been compiled. The figures show that on November 1, 1916, 62,757 motor cars were owned by farmers. In the cities and towns 56,192 automobiles were owned on that date. This gave the farmers an appreciable edge in the Minnesota census for 1916. Of the 56,192, 30,096 were owned in

Minnesota's three largest cities, Minneapolis, St. Paul and Duluth. In all the other towns combined 26,096 cars were owned on November 1. The total number of cars actually owned in Minnesota was 118,949 at that time. With the farmers owning 62,757 of this number, the lead of the farmers is forcefully shown. The same conditions prevail throughout the Middle West.

Keep the Car Clean

It is a sound method of procedure never to allow dust and dirt to collect in the top, in the interior, on the floor, in the upholstery, or upon any part of the skeleton of the car, says Dr. Leonard Keene Hirschberg, writing in the current issue of American Motorist. If the owner will remember that each spot of dust or dirt injures the car and shortens its career; if he will understand that one loose bolt, made so by grit and dirt, caused the collapse of the Quebec bridge, better personal attention will be given by him to the near godliness of cleanliness.

Alignment of Mowers

Quite often trouble with mowing machines may be traced to "non-alignment"—a condition where the sickle and the pitman have become thrown out of a straight line with each other. This, together with poor lubrication of the working parts, or a dull or battered sickle section, make the days of the sharp scythe seem Paradise in comparison.

When the outer end of the cutter bar drops back, much of the power is consumed by the increased friction on the inside shoe parts. This friction causes increased draft. Non-alignment is thought to be caused by wear in the hinge joints between the cutter bar and mower frame, and usually does not develop until a machine has been used for three or four seasons.

Mowers sometimes have special aligning adjustments, which make it quite easy to bring the cutter bar in line with the pitman. It is a mistake to think that an adjustment of either the push bar or drag will do the work right. The shortening of the drag bar tends to interfere with the sickle registering properly, and is a method of remedying non-alignment which will not accomplish the desired result.

Mowers that do not carry special aligning devices can often be fixed up well enough to replace worn parts with new ones. The purchase of new inside shoe pins, or bushing the front or rear pin hole—a job for a skilled mechanic—should be resorted to at times.

Tighten the shears of the mower so that material cannot become crushed or wound between them, thus causing binding of the cutter.

Failure to clean and attend to the cutter bar parts regularly may cause side draft. Replace badly worn clips, wearing plates and ledger plates at once and save trouble.

Be sure that the sickle centers properly. Try it carefully, and note how it slides. When the sickle does not center well the stubble will be ragged in spots. By centering is meant that at the termination of the stroke the points of the sickle sections should rest in the center of the guards.

Never use oil on the blades of the cutter, as these come in contact with the juices from the grass and clover, and soon form a bad gum that clogs the parts and causes heavy draft. Oil may be used, however, on the sickle head, and plenty of it should be applied here and at other wearing joints.

While the tractor does not tire like the horse, it must have intelligent, conscientious care if it is to be kept busy night and day. With a suitable lighting equipment it is possible to operate the tractor successfully and economically twenty hours a day without undue wear and tear upon it or the equipment with which it is used. To do this, however, it is necessary to have the men in charge exercise more than the usual amount of caution because there is always a tendency in rush times to neglect looking after little repairs.

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STACKING SMALL GRAIN

This is a year in which every kernel of grain should be saved. Stacking wheat or oats is a practice economically correct from the standpoint of saving waste. There is always more or less uncertainty in waiting for the threshing machine to come and thresh grain from the shock before it has been damaged by storms. It does not take much of a wind to blow down shocks of grain, and this is sure to result in loss.

Grain can be put into the stack very soon after it is harvested. Stacking has the advantage of improving the quality of the grain because of the sweating process which it goes through in the stack. All the small grain, whether in the stack or the elevator, must go through this sweat or curing process. This improves its quality and actually adds to the weight of grain.

It does not take as large a crew to thresh from the stack and some threshers make a difference in price in favor of stack threshing. If the stacks are well put up the grain will be much better protected than when it stands in the shock for weeks, as it sometimes does, waiting for the machine. It is no uncommon sight to see the tops of grain shocks green with sprouted grain. This is sure to result in waste and grain that is lowered in quality.

Stacks are sometimes struck by lightning, but this risk can be lessened by making several stack yards. As high in price as grain is at the present time, it would be good business to insure wheat in the stack if a general farm policy is not already carried which covers grain so stored.

One of the difficulties in stacking grain is that since the advent of shock threshing the art of stacking has been lost. It is a difficult matter to give definite instructions on stacking, and we will not attempt to do so. In practically every neighborhood there are probably a few men who know how to stack grain. We believe these men should be sought out and, if they are not now physically able to work, get them to instruct and direct some of the younger men in the art of stacking grain so it will keep. Stacking grain is a part of farm practice that should be revived, and we believe it possible to do it by systematically taking it up in the various communities and enlisting the aid of such men as still know how to stack.

HOME-MADE DRIERS

"Home-Made Apparatus for Drying Fruits and Vegetables" is the name of a bulletin just published, in which G. E. Bray, industrial engineer in the extension division of the Agricultural College, gives instructions in detail for making the three types of driers described in his article in our issue of June 23.

The materials required for making the driers are inexpensive, and the instructions are so clear and the bulletin so well illustrated with cuts and working plans that a boy or girl who is handy with tools should be able to make the first two devices suggested at least, and might not find the third too difficult. Drying houses, municipal or co-operative drying plants, and the storing of dried fruits and vegetables are also discussed.

This bulletin may be obtained free of charge from the Extension Division of the Agricultural College at Manhattan, Kansas, or from the Kansas State Council of Defense, Topeka.

BREED DAIRY CATTLE

It has been authoritatively stated that as high as seventy per cent of the dairy cattle in some sections of the East have been sold to the butcher because of the high price of feed, scarcity of labor, and the strong demand for meat. The dairy industry of our nation is being threatened by the rapidity with which producing herds are being reduced in the eastern sections of the country. The dairy cow is a wonderful conservator of food value and the character of her

product ranks so high as a human food that it would be a national calamity to have any material reduction in dairying-take place.

If eastern dairymen are selling off their dairy cattle, the shortage must be made good from some other section of the country or dairying as a national industry will suffer a serious slump. This suggests an opportunity for the dairymen of Kansas. In view of the depletion of these eastern herds, it would be good business policy for us here in Kansas to increase our production of dairy cattle. There is no other class of live stock in Kansas and the Southwest generally finding a more ready sale than well bred dairy heifers. Every dealer bringing in stock from other states finds that there are more buyers for really good dairy-bred cattle than he can supply.

Our state has many advantages for growing stock cheaply. Even though grains are abnormally high in price, by preparing to store feed crops as silage and growing alfalfa, sweet clover, and other legumes, the cost of feed can be reduced to a minimum.

Get good pure-bred dairy sires with production records back of them and get into the game of producing these high class dairy-bred animals right here in Kansas. It is not only good business to do this, but it is an act of patriotism, for there is nothing that can be substituted for the products of the dairy cow as human food.

FACING NEW CONDITIONS

Never before has it been necessary to market our wheat crop under the conditions now prevailing. In his report to President Wilson, Herbert Hoover says:

"It seems to be overlooked in some quarters that the marketing of this year's wheat is surrounded with circumstances new to history and that the old distributing safeguards are torn away by isolation from the reciprocal markets abroad and the extinction of a free export market and free export transportation."

As showing Mr. Hoover's understanding of the situation, we quote the following statement from the same report:

"The Government must buy the surplus wheat at some reasonable minimum price, allowing the normal domestic trade of the country to proceed with

proper safeguards against speculation. Nor would the services of the speculator be necessary, for the Government should be able to stabilize the price of wheat without his assistance and can control the price and quality of export wheat. We are practically helpless to safeguard the farmer or the consumer until pending legislation is passed."

The present indications are that the Government will not only place the marketing of wheat and some other commodities in the hands of a man like Herbert Hoover or a commission of two or three men, but also fix a guaranteed minimum price to the producer. The senate favors a guaranteed price of not less than two dollars a bushel for wheat.

BUY SILO NOW

We have devoted considerable special effort in KANSAS FARMER to pointing out the value of the silo as a means of getting the fullest cash returns from our roughage crops. Many of our readers have realized the economy of the silo and thousands of them have been built in Kansas during the past few years. Even yet, however, only a small proportion of Kansas farms are equipped with silos. This is a year in which the silo will be found of even more importance than in ordinary years.

From the information we have been able to secure from silo manufacturing companies, the supply of silo material is limited. Material contracted for last year in many instances has not yet been delivered. Some companies will not be able to do more than fill the orders they have already booked.

Many of our readers feel the need of a silo as a means of cutting down the cost of feeding live stock. We trust none will be disappointed and be unable to get the silo for conserving their feed crops in this year when it is so important to get the largest return possible from the roughage grown. If you do not have a silo and cannot get one, you are sure to suffer loss of valuable feed material. Do not delay ordering a silo or making plans to build one of some home-made type of construction.

WHEAT CONTROL

One of the important matters under consideration in Congress is that of regulation of wheat marketing in view of the war conditions existing. In discuss-

ing the Government control of wheat marketing before the New York Produce Exchange, Herbert Hoover stated that the extra profits between the price of wheat and the price of flour on the crop of 1918 amounted to about \$159,000,000. By this he meant that this amount of profit was made in excess of normal business profit. No authority was given for these figures.

Mr. Hoover also pointed out that the daily quotations on flour are based on the daily changes on the cash wheat market and not on the price at which the bulk of the crop was sold.

The remedy for this is to price flour on the basis of the cost of the crop as a whole. "In England the price of wheat and flour was regulated on the cost of the entire supply and had nothing to do with the high prevailing price in America or anywhere else," said Mr. Hoover. This is an entirely new system of economics, and it could not be put into operation without having a fixed and constant price for wheat.

The Produce Exchange Committee in its report makes the following statement: "It is evident that the merchandising of the wheat crop is to be controlled from the producer to the consumer with as little interference as possible with the regular channels of distribution. The effort to eliminate abnormal profits or expenses in the handling and distribution of wheat and flour will be thorough and comprehensive. Normal profits are expected."

The growers of wheat should by all means be consulted in the preparation of any plans necessary for handling this matter of wheat marketing. Apparently Mr. Hoover is ready to consider counsel from those who offer it in the right spirit. Only a few days ago he was in consultation with representatives of the big farmers' organizations. The Farmers' Union of Kansas was represented by its president, Maurice McAuliffe.

NEW COUNTY AGENT IN JEWELL

A. E. Jones began work as county agricultural agent in Jewell County July 1, to fill the vacancy created by the resignation of A. D. Folker early this spring. Mr. Folker stayed with the county until several days after Mr. Jones was on the job and helped him to get started in the work.

Mr. Jones is a graduate of the Kansas Agricultural College in the class of 1916. He was reared on a farm and had the responsibility of operating the home farm until his graduation. Since that time he has been employed as teacher of farm mechanics in the Reno County High School at Nickerson. He helped organize the extension work of the high school among the farmers of the county, addressing farmers on the Hessian fly situation, tractor management, and other agricultural subjects, organized calf clubs, and assisted in a farm survey of the county.

Even Mexico is in the market for dairy cattle. Information recently came from Mexico City that 5,000 head of registered dairy cattle had been purchased in Missouri and adjoining states for shipment to Mexico. Ten carloads of these cattle went by the Brownsville-Matamoras gateway June 29. The remainder are to follow in a few weeks. Apparently these dairy cattle are going to build up the depleted dairy herds near the large cities of Mexico.

Crude or medicated oil will keep hogs free from lice. Arrange a rubbing post so the hogs can oil themselves, or get one of the patent oilers. A single oiler will be enough for twenty or thirty hogs.

The Lyon County Dairy Club is still growing. Three new enrollments came in this week, bringing the total up to forty-seven.

Do You Want Seed Wheat?

THE Kansas Council of Defense is now raising a two million dollar Crop Share Fund to be used in buying seed wheat to put out on a fifth share basis. If you want some of this seed wheat, inquire of your county committee which is being formed.

This is a straight business proposition. The big business interests of the state realize that the farmer is willing to do his share for his country and they are going to put their money into this big seed wheat pool and let it take chances along with the labor and investment of the wheat grower.

This seed wheat fund will make it possible to put out a larger acreage of wheat than it would be safe to risk ordinarily. If the farmer wins, the investor wins. If he loses, the investor also loses.

Kansas records for the past twenty years show there have never been two wheat failures in succession, and in almost every case a poor crop has been followed by a bumper crop. This is due to sound scientific causes.

Everything points one way. The year 1918 is due to be one of the big years for wheat in Kansas. Uncle Sam only asks that we do our best.

On another page of this issue are the plans in detail which will govern the handling of this proposition of sharing with the farmer the increased risk of putting out maximum acreages of wheat.

GENERAL FARM INQUIRIES

Something For Every Farm—Overflow Items From Other Departments

AT A recent meeting of the seed wheat committee of the Kansas Council of Defense, a member of the committee asked W. M. Jardine, director of the Kansas Experiment Station, how much seed wheat should be allowed to the acre. Director Jardine replied by saying that most farmers sow a peck too much. Much more depends on the seed bed preparation than upon the amount of seed to the acre. A half bushel sown in the latter part of August will equal a bushel in September and eight pecks in November. He stated that ordinarily two pecks of wheat will give maximum yields if sown early and will do as well as six pecks sown later. This is an important point to take into consideration in conserving our seed supply. With wheat at present prices, a large amount of money will be required to provide the seed for this fall's planting.

These statements made by Director Jardine were based on careful experimental work in dates and rates of seeding covering a period of several years. While visiting the agronomy farm at Manhattan recently, we took special note of the appearance of the plots where these tests are being made. In looking them over very little difference could be noticed between the different rates of seeding where they were planted at a reasonably early date. The later the planting, the more apparent became the results from reducing the amount of seed to the acre.

In order to economize in the amount of seed necessary, it is highly important that seed bed preparation begin at once in order that soil conditions be favorable so that the wheat can be planted at the proper time this fall. This is just as important in the eastern part of the state as in the western and central parts.

Grain to Cows on Pasture

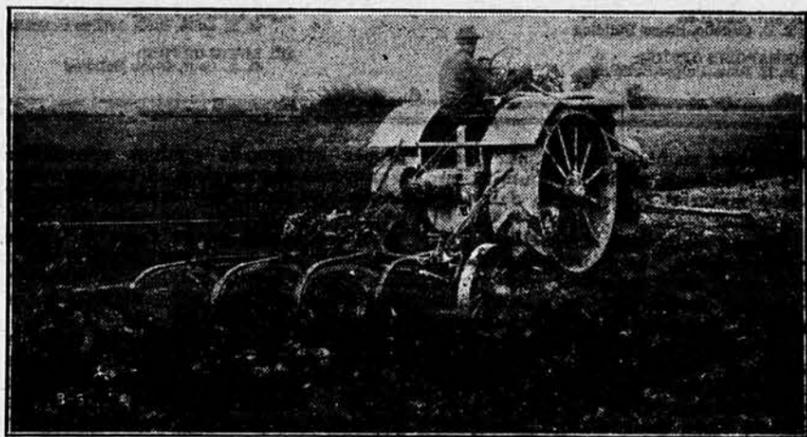
A question which always comes up at this time of the year is whether it pays to feed grain to cows on pasture. This depends largely on the amount of milk the cow is giving and the condition of the pasture. In most cases it will hardly pay to feed grain when pastures are at their best, and this will be especially true this year when grains are so abnormally high in price. If the cows are capable of producing a large flow of milk it will be necessary to supply some grain or they will not give milk to their full capacity. A cow should be able to get enough feed from good grass to make twenty-five to thirty pounds of average milk a day. If a cow is capable of giving more than this quantity of milk or more than a pound and a half of butterfat daily, it will usually pay to feed her about five pounds of grain a day in addition to good pasture. When the pastures become poor, as they often do in late summer, it may be necessary to feed considerably more grain in order to keep up the milk unless there is some good substitute for pasture, such as silage or green feed of some kind that can be cut and fed to the cows. The dairyman who would keep his cows up in milk during the pasture season must almost of necessity be in a position to feed them silage. A small silo to be used only for summer feeding is becoming common on well established dairy farms.

Weevils Infest Stored Barley

J. C. W., of Sheridan County, asks if weevils and other stored grain insects work on barley as they do on wheat. He has 500 bushels of old barley stored in a frame bin with shiplap sides and wishes to carry this over for feed and seed. He asks how to use the carbon bisulphide in protecting this stored grain.

According to Prof. G. A. Dean, entomologist of the Kansas Experiment Station, the stored grain insects will work on barley the same as on wheat. This barley may already be infested with weevils.

In our issue of July 21 we gave brief instructions for treating stored grain with carbon bisulphide to destroy the weevils or other insects infesting it. Circular No. 47 of the Kansas Experiment Station, entitled "Insects Destructive to Grain and the Grain Products



"EARLY plowing and early disking should be our slogan," said Dean W. M. Jardine in his report to the Kansas Council of Defense. "We ought to talk it at all times wherever we may be and before all kinds of audiences. Deep plowing in July and early August, and where plowing is out of the question early disking, will increase the wheat yield."

Stored in Bins and Granaries," will be sent free on application to Professor Dean or to the Director of the Experiment Station, Manhattan, Kansas.

How to Prevent Winter Killing

A wheat grower in Cloud County asks if there is anything he can do in preparing for wheat that will lessen the danger from winter killing.

Last winter nearly all the wheat in that part of the state failed. The principal reason was that the fall was dry, which delayed preparation work, and after the ground was plowed and the wheat planted it continued dry so the seed bed did not get settled. Wheat always winter kills badly on a poorly settled seed bed. Farther west where rainfall is often deficient in the fall it is sometimes a difficult matter to get even early plowing settled enough so as to make a satisfactory seed bed. It is to overcome this condition that the sub-surface packers are used.

A method of seeding that has been tested out experimentally for several years at Hays is to plant the rows of wheat in furrows similar to the manner in which corn is planted in lister furrows. These furrows are run preferably

in a direction at right angles to the prevailing winds. Some specially designed drills have been used so arranged that each row of wheat is planted in a small furrow. These drills have not as yet been placed on the market commercially. The distance between the rows is eleven inches in the drills that have been used. They require considerably more power to operate them than the ordinary drill, and for that reason some farmers object to them. As a means of avoiding winter killing, this planting of wheat in furrows seems to give excellent results. It is especially noticeable at Hays this year when so much of the wheat sown in the ordinary manner killed out.

This idea of planting wheat in furrows is by no means new. It was tested out in a small way at the Kansas station a good many years ago, and we have had several conversations with a man who formerly farmed in Lincoln County, in which he told us of his observations along this line. He had long noted that whenever a corn stub or some other obstruction caused the ordinary drill to leave the furrow, the wheat in the furrow always came through the winter in better condition than that in the ordinary drill rows. With the ordinary drill, the seed in the outside rows

is usually left in a deeper depression than the seed in the remainder of the drill rows. In seasons when there is bad winter killing, it has been noted that these outside rows come through the winter in much better condition than the other rows that are not planted in a furrow or depression. It would seem that this method of planting wheat gives great promise of being a means of avoiding much of the danger of winter killing.

Spreading of straw on wheat fields is a practice that has saved a good many acres of wheat from being killed out during the winter. We talked with farmers in the wheat belt last summer who stated that they could tell to a line where the straw spreading stopped. In some instances the spring winds blew the straw off the field, but it had remained long enough to afford the wheat the protection necessary to prevent its being killed by the winter conditions. The practice of burning straw is far too common in the wheat sections of our state. If this straw could all be spread on the land, it would have a remarkable effect in keeping the soil supplied with organic matter, and by spreading it on wheat fields in the fall and early winter it would serve the additional purpose of lessening the danger of winter killing. A good straw spreader should be part of the equipment on every wheat farm.

Ridging Up Corn

While driving out in the country recently, we noted a field of corn which had apparently been laid by in such a manner as to leave a very high ridge. We can recollect how years ago in our early experience as a boy on the farm this was the approved method of laying corn by. It was considered that at this last plowing as much dirt should be piled around the corn as possible. Therefore the shovels were set to go deep and to throw dirt toward the row. In the light of a better knowledge of the principles of corn cultivation, it seems now that there could be no worse way of finishing the job. Such a method is bound to injure the corn unless much more than the usual amount of rain falls after the corn is cultivated the last time. The roots of corn or kafir are near the surface at this stage of its growth and many of these roots will be cut off by this deep plowing.

Since the disk cultivator has come into use there has been a tendency to ridge corn or the grain sorghums too much at the last cultivation. This type of cultivator does nice work, but used in this way it throws all the loose dirt in a ridge, leaving the space between the rows almost bare of loose soil. This high ridge will dry out more quickly than if the soil had been left in a level condition. In the light of our latest experimental knowledge in cultivating corn or the grain sorghum crops, the results would indicate that keeping the weeds down with the least possible disturbance of the soil is best for the crop. This of course assumes that the soil was given the proper kind of tillage before the crop was planted. Proper cultivation is an important factor in growing corn or grain sorghums, and owing to the lateness of these crops over much of the state there is probably considerable cultivating yet to do. Remember that destruction of weeds is the purpose of cultivation and this must be done in such a way as to avoid injuring the plants of the crop being cultivated. Where wheat is to be sown this fall on corn land it is also well to keep in mind that the cultivation given the corn is good seed bed preparation for wheat. Even though the corn crop fails, the labor of cultivation has by no means been thrown away.

"There never was a time when the farming business required more thought and attention than today. If you have a good practical way of doing a thing that pays, let us know about it and pass it on to the next man." These lines are from the first news letter of Ambrose D. Folker, Shawnee County agricultural agent. This thought would be a good one to be adopted as a motto by every farm bureau member. We wish KANSAS FARMER readers would help us by telling about practical things they have learned by experience.

What Early Plowing Does for Wheat

THE yields per acre from different methods of seed bed preparation have been determined by the Kansas Experiment Station at Manhattan in a series of tests covering a six-year period. The same kind of wheat was sown on all plots at the same rate per acre and on the same date, which ranged from September 28 to October 5, depending on the weather and season. The results of these tests have been most striking. Early preparation of the seed bed is the secret of increasing wheat yields. The average yields of the different plots and net returns are given below.

Yields, Cost and Value of Wheat, Various Methods of Seed Bed Preparation

| | Aver. Yield per Acre 1911-1916 Bushels | Cost per Acre for Preparation | Value of Crop at 80c per Bushel | Value of Crop Less Cost of Preparation |
|---|---|--|--|---|
| Disked, not plowed | 8.0 | \$2.14 | \$ 6.40 | \$ 4.26 |
| September plowing, three inches deep | 13.8 | 2.83 | 11.04 | 8.21 |
| September plowing, seven inches deep | 15.1 | 3.15 | 12.08 | 8.93 |
| September plowing, seven inches deep, double disked previous July | 19.1 | 3.95 | 15.31 | 11.36 |
| August plowing, seven in- ches deep | 21.1 | 3.94 | 16.95 | 13.01 |
| August plowing, seven in- ches deep—not worked until September | 19.3 | 3.05 | 15.50 | 12.45 |
| July plowing, seven inches deep | 22.3 | 4.73 | 17.86 | 13.13 |
| July plowing, three inches deep | 17.6 | 4.30 | 14.14 | 9.84 |

PIT SILO INEXPENSIVE

There are Silos at Prices to Fit Every Pocketbook

THE pit silo is the least expensive type of silo that can be built. These silos cost little in actual money, are durable, easily kept in repair, and preserve silage as well as any other type of silo. Their great disadvantage is that the silage is down in the ground and there is considerable labor attached to getting it out for feeding. There is also the possible danger from the formation of carbonic acid gas. This is a heavy gas which forms as a result of the decomposition of the fodder material on the surface. In a windy country like Western Kansas the rapid movement of the air creates a suction which tends to keep the air in the silo pure. The greatest danger is probably at filling time. This gas forms rapidly for a day or so after the filling begins and it is always a wise precaution to let the silage cutter run a few minutes before going into a pit silo partially filled at filling time. The presence of gas in a silo can be detected by letting a lighted lantern down into it. If the lantern goes out, this is an indication that carbonic acid gas is present and it would be unsafe to go into the silo until the air had been sufficiently agitated to cause the gas to be carried out by the blowing of the wind across the top.

Pit silos should not be made where there is any danger of water seeping in. For that reason they are not to be recommended for the more humid section of our state. In most of Western Kansas there is no danger from this source providing some care is used in locating them so surface water cannot get into them during heavy rains. The Western Kansas farmer need not go without a silo because he cannot afford to put up one of the more expensive kind built above ground. He can have a pit silo which costs little outside the labor required in excavating and plastering. In localities where cisterns can be made by plastering directly on the earth and where there is no ground water to seep in, making a pit silo a simple matter.

A recent bulletin from the Nebraska College of Agriculture describes three types of pit silos: the simple hole in the ground having its sides plastered with cement plaster, the hole in the ground with a portion from four to twelve feet high above ground, and the semi-pit, or bank silo in which the hole is dug in a bank or hillside and retaining walls are made on the open side acting as a chute. The bank silo has a row of doors from

In building pit silos, the process employed in building silos above ground is reversed, the pit silo being begun at the top and made a section at a time as the excavation progresses. In building a silo in this way the ground acts as a staging upon which the plaster stands, so no lumber or labor is required for that purpose.

The first step in building a pit silo after its site is located is to dig a trench about three feet deep similar to the one shown in the illustration on this page. This circular trench is to be filled with concrete, forming a ring or collar which

other side. These support a 2 x 12 plank which carries a track, and an ordinary hay carrier car is used to elevate the dirt and run it out to the side of the pit where it is dumped. Sawed-off barrels were used to pull up the dirt. These were made into buckets by boring a one and three-quarter inch hole through the staves below the center and passing a one and one-half inch pipe through these holes. A chain fastened to the ends of this pipe served as a bail. To hold the barrels from dumping their load while they were being pulled up, a wagon rod was put through the top

where the plaster was from five-eighths of an inch to an inch thick the walls were in perfect condition regardless of the length of time the silo had been in use.

Build Silo with Care

From the information the writer has obtained there will be a great many silos erected in Kansas this summer. One type of silo which has rapidly gained recognition and prominence is that which is built of hollow tile. Especially at this time of the year a few words on the construction of this type of silo should not come amiss. We do not intend to go into the construction details of this silo at this time, but merely wish to bring up a few of the points which should be emphasized.

On account of the lateral pressure during the first few weeks after filling, the silo walls must be well reinforced. Reinforcing rods should be placed in every course of tile, but this point we will leave to the manufacturer in his particular silo.

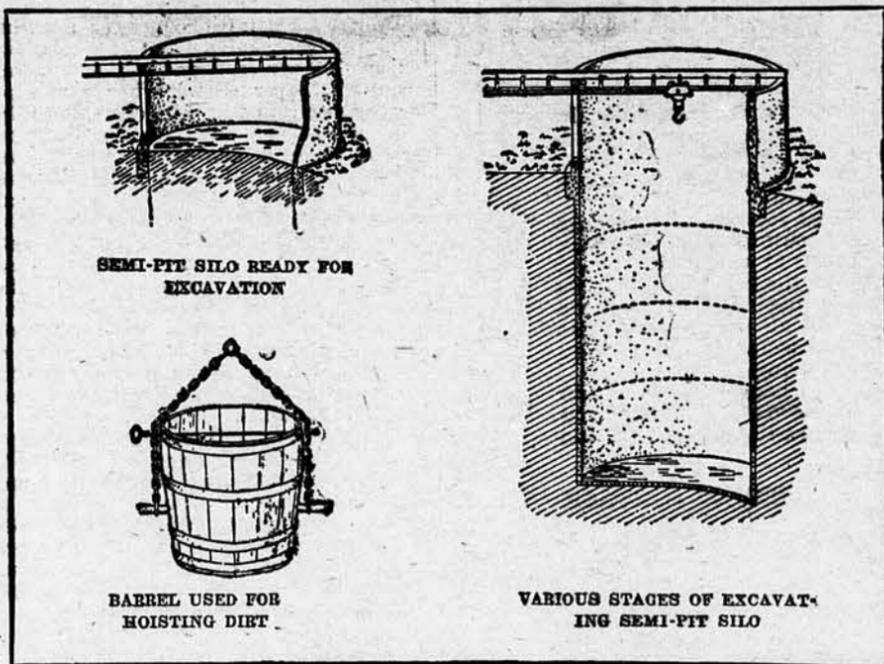
Without a doubt the weakest point in the hollow tile silo is the vertical mortar joint. In order to get these joints air-tight and water-tight great care must be taken. A number of silo manufacturers have an improved double wall, which is a great help in this respect. Be sure to get those joints full and well pointed. If the silo is to be plastered on the inside, the blocks should be laid true to the outside of the wall, but if it is not to be plastered, the inside wall should be smooth and perpendicular. This point cannot be emphasized too strongly, for if the walls are rough, the silage will not settle as it should. See to it that the walls are smooth inside.

In order to make the mortar work well and spread evenly, a small proportion of lime has to be used in with the cement and sand. Authorities differ on the kind of lime to use for this purpose; the lump or barrel lime is preferred by a great many masons and is very good providing it is used correctly. Some masons make the mistake of slaking this lime as they use it. This is a great mistake. If barrel lime cannot be obtained and slaked at least a week ahead, it should not be used in connection with silo work. Hydrated lime which comes already prepared in sacks is often used in connection with this work. Not more than ten per cent, by weight, of this lime should be used to the sack of cement.

Most all concerns selling silo blocks send out printed instructions for the erection of their particular silo. The writer has known of cases where these instruction books were never referred to either by the farmer or the mason. This is too much like having your wife pay five dollars a yard for dress goods and then secure the services of a poor dressmaker to put it together with no set pattern or idea in mind. Remember that the hollow tile silo is a permanent building on the farm and cheap or incompetent labor should be avoided. This silo, if properly erected, will stand for a long time. If it is not properly erected it will be most unsatisfactory. By selecting good material and then competent workmen, you should be able to construct a building of which you will be proud and which will last you as long as you need a silo.—BERT R. MULLER.

Wichita always does things in a large way. They now report a mother-daughter canning club with 526 members on its roll. This is the largest club of its kind in the United States so far as we know. It holds regular meetings in the different school buildings of the city. In addition to canning all the surplus products within their own reach, the older members of the club have become missionaries in food conservation and are devoting considerable time to demonstrating new canning methods in nearby communities where the housewives have not been able to attend the public demonstrations given by Otis E. Hall, state club leader, and others.

The farmers are going to get a good price for wheat next year. Figures talk. You can't repeal the law of supply and demand.



protects the top of the silo and serves as a foundation for that portion built above ground. After the collar has set, dig down about six feet and after the walls have been made true, following the method illustrated in the cut, plaster that section. Then dig another section and plaster in the same manner, continuing until the desired depth is reached.

It is important to use properly proportioned plaster. Use a mixture of one part Portland cement and two and one-half parts screened sand. A small portion of hydrated lime not to exceed one-tenth the amount of cement, will make the plaster work much better. The walls should be wet before applying the first coat of plaster. The first coat should be left rough and immediately followed with a second coat before the first coat has had time to thoroughly set. If the work is carefully done, it does not require a very thick coating of plaster to stand, although it is usually advisable to cover the dirt with a layer at least an inch to an inch and a half thick.

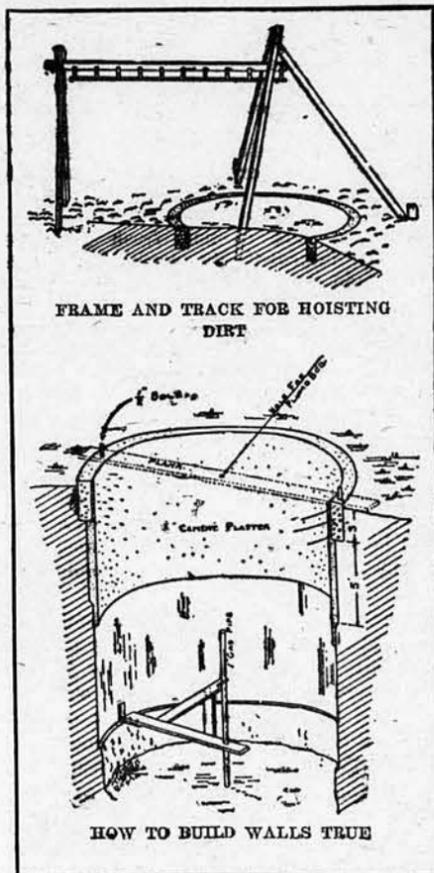
There are several methods of building the part above ground. A short stave silo can be set up on the foundation or walls of concrete, concrete blocks, or clay tile may be built. An easy way of making a cement wall a few feet high for the part above ground is to use metal lath and plaster on this with cement plaster. One form of metal lath is reinforced by a rib and can be purchased on the market in any diameter desired. This type of metal lath can be set up on the foundation without any support and plastered with enough coats of cement to make a wall three inches thick, the lath being completely covered up in the process. The ordinary metal lath can be used by setting up 2 x 4 studding about every two feet on the foundation and tacking the lath to the inside edge of these supports. After two or three coats of plaster have been placed on the inside of the lath, the 2 x 4 supports can be removed and a coat or two of the same kind of plaster placed on the outside.

There are a number of methods that can be used in hoisting the dirt from a pit silo. The hoisting frame illustrated on this page has been used successfully by a pit silo builder in Nebraska. It consists of a tripod made of poles set up at one side of the silo and a scissor frame consisting of two poles at the

of the barrel parallel with the pipe support, the ends of the chain bail passing the rod on opposite sides. This is clearly shown in the cut. When the barrel was to be dumped, the wagon rod was simply pulled out far enough to free the chain on one side and the barrel dumped itself. M. C. Anderson, the Nebraska man who used this device, stated that they could fill a wagon in eight minutes. This is getting out dirt at the rate of a cubic yard every five minutes. Neighbors exchanged work so that a gang of seven men with two teams on the wagons and one on the hoist worked at once. Three men worked at filling the barrels, one looked after the hoisting and returning of the barrels, and one drove the hoisting team. This silo was fourteen feet in diameter and twenty-four feet deep. The material cost \$15.30. The labor would have been valued at \$44.85, making the total cost including the labor \$60.15, or a cost per ton capacity of but eighty-eight cents. We are indebted to the Nebraska bulletin above referred to, which was prepared by L. W. Chase, for the information given and the illustrations shown.

The author states that a number of pit silos which have been in use for different periods ranging from one year up to eighteen years have been inspected and they are all giving satisfaction. He found one which was being remodeled, but this was because it had been built with square corners, and this meant that a good deal of time must be taken in filling the silo in order to have it tramped enough in the corners so it would not spoil. The silo which had been used eighteen years was made by plastering the earth of the lower part with natural cement and protecting the upper walls with brick. The cement had peeled from the walls in some places, but the owner did not consider it sufficiently detrimental to make repairs necessary.

As a result of this study of the pit silo in use, it is recommended that all such silos be built round with the walls smooth and perpendicular. The walls should extend at least three feet above the surface of the ground and the collar or border should extend at least three feet below the surface. Below this point the walls should be plastered with not less than three coats of rich cement mortar, and in loose sandy soil more should be added. In the silos visited



top to bottom on the exposed side. Sometimes silos of this type are made in connection with bank barns and the retaining walls connect the silo with the barn.

Kansas Farmer Dairy Club

Weight of Gallon of Milk

RAYMOND CAULK, of Leavenworth County, asks the following question: "How much does a gallon of milk weigh? The books say 10.33 pounds, but I am told it is the custom to figure milk at from eight to eight and one-half pounds to the gallon."

Perhaps other members of the Dairy Club may not know how much milk weighs. We do not know where Raymond got his figures giving the weight of a gallon of milk as 10.33 pounds. It may be that he got the figures for the weight of the English gallon.

Milk is of variable composition and for that reason varies in weight. Doctor Babcock, one of our American authorities, gives the following as the composition of average milk: Water, 87.17 per cent; fat, 3.69 per cent; casein, 3.02 per cent; albumen, .53 per cent; sugar, 4.88 per cent, and ash, or mineral matter, .71 per cent. When you separate the cream you take out practically all the fat and small portions of the casein, albumen and other constituents. The casein and albumen are the parts that thicken and get solid when you make cottage cheese. The sugar and the mineral matter are dissolved in the whey, which looks almost like water as it separates from the curd when milk sours. Some of these solids contained in milk are heavier than water. Therefore a gallon of milk is heavier than a gallon of water, and its exact weight will depend upon the amounts of these solids it contains.

The specific gravity of milk at a temperature of sixty degrees Fahrenheit ranges from 1.029 to 1.035, the average being about 1.032. This means that a gallon of average milk weighs 1.032 times as much as a gallon of water. Water weighs 8.35 pounds to the gallon, therefore the gallon of average milk weighs 8.6 pounds.

What to Feed

We have just received a letter from Joe Herman of Tonganoxie in which he says his cow has fallen off a good deal in milk during the past two weeks. He wants to know what to feed at this time of the year and how much. His cow has not shed all her winter coat yet. He says the flies are bad, but he is spraying her morning and evening. The following is the reply the editor sent to Joe:

"You did not send any feed record with your milk, so I do not know what your cow is getting to eat now. You should always make out a feed record even though your cow gets nothing but pasture.

"Cows nearly always drop off badly in milk at this time of the year. The hot weather and flies combined with short pasture is the cause. About the only way to overcome it is to give them some extra feed at the barn. If you have some good alfalfa hay, give your cow some of that. Of course it would be fine if you had some silage for her, too, during the hot weather when the pasture is short.

"Grain is very high in price now, but

good cows usually have to have some in order to keep them giving milk up to their full capacity. Be sure to read all the articles in KANSAS FARMER on feeding and caring for milk cows.

"I am glad to learn that you are spraying your cow to keep off the flies. This will help some. If she has not shed all her long hair yet, it seems as though she must not be in quite as good condition as she should be. A little linseed oil meal—say a half pound a day—would do her good."

Grain Ration for Cow

Emma Mae Lenhart, one of the new Dairy Club members in Dickinson County, writes that her cow is doing fine and is gaining steadily in milk. She is feeding her a mixture of bran and corn chop and asks if it would be better to mix in some oats. Oats makes a fine feed for a milk cow, but ordinarily they are too expensive. At the present time corn is so very high in price that it will probably cheapen the ration to use some oats in place of part of the corn chop. We believe that it would pay to add either linseed oil meal or cottonseed meal to the grain ration. These feeds both contain large amounts of protein and most farm rations are deficient in this particular nutrient. Alfalfa hay is rich in protein for a rough feed, but cows with a large capacity for milk production cannot eat enough hay to supply the protein they must have.

A standard grain mixture that we always like to recommend is made up by mixing four parts of corn chop, two parts of bran, and one part of either linseed oil meal or cottonseed meal, all by weight. If oats are cheaper by the pound than corn chop, replacing part of the corn chop with oats will cheapen this mixture. All cows should be fed all the good, palatable roughage they will eat, and some will not profitably use grain. This can only be found out by watching the milk record and feeding the cow in proportion to her capacity for giving milk. If the addition of the grain causes enough increase in the milk to pay for the grain, it will be profitable to feed it. Good milk cows should not be so poorly fed as to run down in condition while giving milk. This means that they are actually using up part of their own bodies in making milk. This can go on for a time, but when the limit is reached they will fall off in production and must be fed up again before they are in the right condition to produce milk up to their full capacity.

We hope all our Dairy Club members will make a close study of this question of feeding their cows. By keeping a record of the production from day to day this kind of a study can be made very profitable. It is really impossible to feed cows intelligently without having accurate information as to the milk they are giving.

Butter that is not fresh may be greatly improved by working it over with cold water.



This is Type E International Ensilage Cutter. A 10 to 15-h. p. Mogul kerosene engine will run it easily. It has a capacity of from 10 to 12 tons per hour.

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Important to New Members

IF YOU wish to join the Kansas Farmer Dairy Club, send in your enrollment coupon as soon as you have arranged with your banker to borrow the money for your cow. It is not necessary to wait until you get the cow. In fact it is better to enroll before getting her, as in that case we can send you instructions which will help you to select a good one, and sometimes we may be able to put you in touch with near-by people having good cows for sale.

Upon receipt of the enrollment coupon, two other blanks are sent you, one for information about the cow and one to use in notifying us of the time when you begin keeping records. As soon as your cow is purchased, fill out and return to us the one telling about her. When she commences to give milk fill out and send in the one headed "Notice of Starting Year's Record." If she is giving milk when you get her, of course you can fill that out right away. When we get this notice we will send you the blanks on which to keep records of the milk your cow gives and the feed she eats each day.

The blank asking questions about the cow has been sent to quite a number of new members who have not returned it, though we know that some of these have their cows. This makes our records incomplete. Please send us all blanks promptly, because that enables us to keep our records up to date and also to send you helpful material when you are ready for it.

Plan of Seed Wheat Distribution

THE fund to be used in increasing our wheat acreage is to be subscribed and administered under the direction of the Seed Wheat Committee of the State Council of Defense. The rules adopted by the committee are as follows:

1. The purpose for which such committee is created is to provide a fund with which to purchase seed wheat during the year of 1917 and to distribute the same to such county organizations as the committee may designate and which comply with these rules.

2. The fund so created shall be known as the "Crop Share Fund." It shall be under the direct supervision of the State Seed Wheat Committee of the Council in conjunction with the state auditor as hereinafter provided. The estimated amount to be secured for the fund is two million dollars, or so much thereof as may be necessary.

3. The state bank commissioner is hereby designated as the trustee of this fund, the state treasurer as custodian, and the state auditor as the auditor of the fund. Should the present state bank commissioner or state treasurer or state auditor retire from his office, then his successor in office shall succeed him in the position as designated in this rule. Should the state bank commissioner at any time be unable to act as trustee, his successor shall be named by a majority vote of the State Seed Wheat Committee.

4. In case of any vacancy in the membership of the State Seed Wheat Committee the remaining members of such committee shall elect others to fill such vacancy.

5. The State Seed Wheat Committee reserves the right to refuse or accept any funds subscribed, or make any distribution of seed wheat requested, or part thereof, as in its judgment may be best.

6. In view of the fact that the subscriptions to this fund are voluntary, it is agreed by the parties who subscribe thereto, or who derive benefit therefrom, that the committee shall not be liable personally, except for want of the use of its best judgment in the management of the funds.

7. The State Seed Wheat Committee may appoint such agents or representatives as in its opinion may be necessary to buy seed wheat and attend to the distribution and sowing of the same, and the care, harvesting and sale of the crop derived therefrom.

8. All moneys subscribed to said fund shall be paid to the bank commissioner of Kansas, as trustee, and by him deposited with the state treasurer as custodian, subject to the order of said trustee, and audited by the state auditor. All moneys due said fund repaid by those receiving seed wheat or derived from the sale of crops shall be paid to the trustee, who shall deposit the same in said fund with the state treasurer as custodian as aforesaid. All of said fund shall, on November 1, 1918, or as soon thereafter as practicable, be distributed pro rata to those who have advanced money for such fund.

9. Residents of any county desiring that seed wheat (to be purchased with said fund) be furnished within such county shall form a county organization to be known as _____ County Seed Wheat Committee, which shall be subject to the approval of the State Seed Wheat Committee. Such county organization shall consist in the main of at least two bankers, two farmers, the county farm agent, if any, and such millers, grain men and other individuals as the State Seed Wheat Committee may approve. The County Seed Wheat Committee shall organize by electing a chairman, a secretary-treasurer and such other officers as they may desire.

10. The several members of such County Seed Wheat Committee shall personally sign a certificate acknowledging their membership in such committee and certifying to the names and addresses of the chairman and secretary-treasurer upon blanks furnished by the State Seed Wheat Committee, and forward the same to the bank commissioner, trustee, Topeka.

11. The duties of each County Seed Wheat Committee shall be as follows:

(a) To organize its county, determine the seed wheat requirements of the farmers in excess of the local supply or ability to supply, and place orders for the same with the State Seed Wheat Committee, at Topeka.

(b) To collect a fund and deposit

same in a bank within said county subject to the draft of the trustee provided for in these rules. Such fund shall be at least 20 per cent of the total amount to be furnished for seed wheat in said county, under the plan contemplated by these rules.

(c) When shipment of seed wheat arrives at its destination in the county the responsibility for its custody and distribution shall rest with the County Seed Wheat Committee.

(d) The County Seed Wheat Committee shall be responsible to the State Seed Wheat Committee for the proper preparation of the seed bed, sowing of the seed furnished, cultivation, harvesting, threshing and sale of the State Seed Wheat Committee's share of the crop, and the payment of the proceeds to the said trustee.

(e) The County Seed Wheat Committee shall see that the State Seed Wheat Committee is protected in its share of the crop, and in case of a tenant that the State Seed Wheat Committee be protected co-ordinately with the landlord; that the proper share crop agreements are executed by the farmer in favor of such trustee and countersigned by the chairman of the County Seed Wheat Committee, and in case of a tenant that the landlord's agreement be duly executed; such agreement to be made in triplicate before any seed is delivered and upon blanks to be furnished by the State Seed Wheat Com-

mittee, one copy to be retained by the farmer, one by the County Seed Wheat Committee, and the third to be delivered at once, when signed, to the bank commissioner at Topeka.

12. Seed wheat will be furnished to the County Seed Wheat Committee at its actual cost, plus freight and the necessary expense of delivery, postage, telegraph, telephone, clerk hire and travel.

13. No seed wheat shall be furnished in a county in which the County Seed Wheat Committee has not furnished a substantial amount of money to be used for the purchase of the seed wheat for that county. Such amount shall not be less than 20 per cent of the total amount of seed wheat fund needed in the county, or a larger per cent as the State Seed Wheat Committee may require. Such per cent required shall, by the County Seed Wheat Committee, be deposited in banks in such county, subject to the draft of the trustee herein named, to be used for the purchase of seed wheat. The County Seed Wheat Committee shall at all times keep the trustee informed of the amount of such deposit in each bank.

14. It is understood that the State Seed Wheat Committee will furnish as much of the seed wheat in any county entitled thereto as its available funds permit pro rata with the general fund for the state.

15. Immediately upon collecting the proceeds of the sale of any share of a crop it shall be the duty of the County Seed Wheat Committee to remit to the said trustee at Topeka such portion

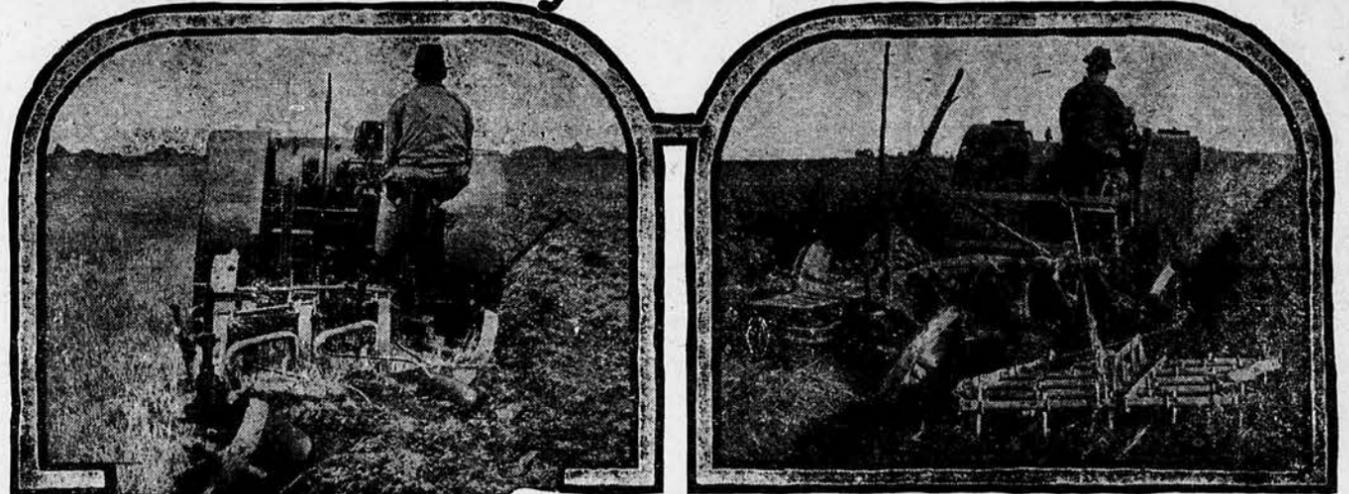
thereof as the money furnished by said trustee from the State Seed Wheat fund in such county bears to the total amount invested for seed wheat furnished in such county from the said fund and the fund created within such county.

16. In case any wheat purchased by the assistance of the fund and delivered to any county be not used, the same shall be disposed of as may be directed by the State Seed Wheat Committee and the proceeds thereof be remitted to the trustee and the county fund in proportion to the respective amounts invested therein from said funds respectively.

17. All communications shall be addressed to the State Seed Wheat Committee, Council of Defense, Topeka, Kansas.

18. All crop share contracts shall be on the basis of one-fifth of all crops in favor of the trustee, f. o. b. cars or elevators at the station designated in the contract; and all deliveries of the one-fifth share crop must be made to such station before November 1, 1918, unless the State Seed Wheat Committee shall extend the time in writing, and the County Seed Wheat Committee shall sell the said one-fifth share of the crop at the market price on the day of delivery at the station and forward the funds due the State Seed Wheat Committee immediately to the said trustee. The County Seed Wheat Committee shall be responsible for the faithful, prompt and efficient supervision and collection of proceeds due the State Seed Wheat Committee and the remittance thereof.

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Ethical Code For Breeders

IN NO other occupation will be found higher standards of ethics than in the business of breeding and selling pedigreed live stock. This is as it should be. We have said several times in KANSAS FARMER that the pedigree of the man from whom cows are bought is more important than the pedigrees of the cattle. Most breeders of live stock realize that the very foundation of the business of breeding pedigreed animals of all kinds depends upon the honor and integrity of the men engaged in it. Probably ninety per cent of the pure-bred males in use are ordered by the purchasers on the basis of their faith in the reliability of the breeder from whom they make their purchases. This is evidence in itself of the high standards that prevail among breeders of pure-bred stock.

The Western Guernsey Breeders' Association, which represents the Guernsey breeders of the middle states, has had a committee at work on a "code of ethics" to govern transactions in pure-bred stock. Although the ethical standards of the pure-bred stock breeders are high, it is a good thing to set down in black and white some definite rules of action and use every effort possible to the end that all breeders conform to the standards of the majority. The code as published by this committee of the Guernsey Association suggests ideas that might well be adopted by breeders of all classes of pure-bred animals. These rules are as follows:

"All prices are f. o. b. seller's station. Animals to go by express and be crated by seller, and the crate to be returned at expense of seller.

"All animals to be shipped with a strong halter on.

"Every bull over one year old guaranteed a breeder, providing buyer's cows are in good condition. If not a breeder, to be replaced by one equally as good or to be returned to seller and purchase price refunded at option of the seller. In case of such exchange, buyer and seller each to pay transportation charges one way, or, if taken back and price refunded, seller to pay transportation charges.

"Every heifer sold over one year old guaranteed a breeder, or taken back or exchange made on same basis as for bulls.

"Every cow sold guaranteed a breeder or exchanged on same basis.

"Seller must call attention to any unsoundness as to udder or otherwise.

"If an animal sold as a heifer proves to have a defective udder when calved, loss is purchaser's.

"Registry and transfer certificate and tabulated pedigree to accompany every sale.

"As regards tuberculosis, it is recommended that in states where provision is made for state-accredited herds, all members have their herds so enrolled. Where buyer tests an animal inside of three months after purchasing and finds the animal tubercular, with no other reactors in the herd, then the loss should fall on seller, unless he is able to show a test of his herd inside of ninety days before sale and that then there were no reactors in his herd."

These rules might be made even broader than they are, especially as they pertain to guaranteeing animals as breeders. A non-breeding pure-bred is not worth a cent more than it will bring on the block, and even young heifers under a year old are bought with the expectation that they will become breeders and reproduce. If they fail to do so, the buyer is disappointed.

In selling pure-bred live stock it is a good business principle to make every effort possible to have only satisfied customers even though it may cost something at the time to adjust complaints. A dissatisfied customer can easily do a breeder more harm in a business way than the total cost of the animal in question.

Wichita Pig Feeding Tests

Last Friday the second feeding demonstration conducted by the Wichita Stock Yards Company came to a close. Nearly 250 hogs were fed in fourteen different lots, each lot receiving a dif-

ferent ration. On May 21 when the tests began the hogs weighed about 120 pounds apiece.

The biggest gains were made by hogs fed corn, shorts, meat meal, and alfalfa pasture, the average daily gain per hog in this lot being 1.89 pounds. The corn, shorts, and meat meal lot was a close second with an average daily gain of 1.65 pounds per hog. The cost of a hundred pounds of gain in the lot making the heaviest gains was \$12.04, and in the lot coming second \$12.35. The alfalfa pasture lot sold highest, bringing \$15.45 a hundred, the dry lot on this same ration bringing \$15.30 per hundred.

The folly of feeding hogs corn alone was clearly shown. The hogs in the lot so fed gained at the rate of only .77 pound daily per hog at a cost of \$17.28 a hundred. They sold for \$14.60 a hundred, this being the lowest price received.

Corn, buttermilk and alfalfa pasture, and corn and buttermilk without the pasture gave economical returns. The hogs in the pasture lot gained at the rate of 1.50 pounds per head daily, the cost of a hundred pounds of gain being \$12.92. The selling price of the hogs in this lot was \$15.15 a hundred.

Corn was priced at \$1.68 a bushel, shorts \$2.50 a hundred, meat meal \$3.50 a hundred, buttermilk three cents a gallon, and alfalfa pasture \$10 an acre for the two months of the test.

Illinois Has New Dog Law

Sheep growers everywhere maintain that the dog risk makes it unsafe to keep a flock of sheep on the farm. A new law has recently been passed in Illinois that makes it possible for sheep men of that state to protect themselves against sheep-killing dogs much better than formerly. This law requires that a license fee be paid annually for each dog and that all dogs so licensed wear their license number on a collar. It also provides for the payment of up to fifteen dollars a head for sheep killed by dogs. Any dog found roaming at large without a license number attached may be killed at once. Dogs caught in the act of chasing sheep or other domestic animals may be pursued and killed, and in addition any dog trespassing on premises where sheep are kept, unattended by its owner or keeper, may be killed while so trespassing whether licensed or not. As with all laws, the results will depend largely upon the sentiment back of its enforcement. We believe that as the interest in sheep increases and more farmers attempt to keep them, the sentiment will be such that sheep-killing dogs will not be permitted to run at large in any community.

The Chicago Drovers' Journal of July 14 tells about a side industry conducted by A. A. Webber, of Stark County, Illinois, who was on the Chicago market last week with hogs and cattle. While there Mr. Webber bought a carload of breeding ewes to take home with him. He reported that farmers in his section were becoming keenly interested in sheep, in view of the very great profits to be derived from them, and said that he had disposed of several carloads of breeding ewes among his neighbors within the past few months, distributing them in small lots, six to a dozen head to each buyer. Since the sheep and wool situation became so acute many farmers new to the industry are becoming interested. Mr. Webber himself purchased a drove of sheep a few months back, sold the wool clip at 63 to 70 cents a pound, and later turned the sheep at a profit above their original cost.

It might be a good plan for enterprising stockmen in various sections of Kansas to take a tip from the experience of Mr. Webber in Illinois. When shipping live stock to market a carload of breeding ewes could be brought back, and disposed of among the farmers of the neighborhood, a few in a place, and it would not only mean a profit on the transaction, but would mean money for the farmers who buy the ewes, and increased prosperity for the whole neighborhood.

The Cow Knows—but SHE can't talk. Ask the Dealer.

Farmers Need SO-BOS-SO
TRADE KILFLY MARK

Because it does away effectively with the Fly Nuisance—

Keeps the cows and horses in good humor—enables cows to produce more milk and horses to do more work.

SO-BOS-SO KILFLY keeps the flies away from the cows in the pasture and in the stable. Every horse owner should use SO-BOS-SO KILFLY, for it relieves horses of fly bother, thus preserving their vitality for productive work. SO-BOS-SO KILFLY can be used on boys and hog pens. And in a similar way it can be sprayed in hen houses. It is a sure base to lice and vermin.

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Pointers in use of Milking Machine

A RECENT circular from the New York Experiment Station states that in selecting a milking machine you should use the same business judgment that you would in buying other machines. "If the agents tell you the same stories that they have told to us," says its author, "many of them should be accepted with a grain of salt. The longer a machine has been in successful operation, the surer you can be that it is a mechanical success. A record of three years of successful operation is none too long to make sure that a machine is worth buying; and the record should have been made independently of the manufacturer."

As a general rule, the simpler the construction of a machine, the more likely it is to be a success. This statement applies especially to teat cups. If of complicated construction, it is very difficult to keep them bacteriologically clean. Do not accept statements that machines which will allow stable air to pass into the machine with the milk are failures because they are unsanitary. Tests by the New York Experiment Station show that not more than one or two bacteria per cubic centimeter are added to the milk in this way.

OPERATING A MACHINE

Even if you have installed a machine which is as good as there is to be had, you may be sure it will not be a success on your farm unless you operate it properly. It is as necessary to use judgment and care in milking a cow by machine as by hand. The cow is not a machine and never can be made over into one. If you fail to make a success of a machine which others have used successfully for three or more years, the probabilities are that the trouble is with you. Instead of getting discouraged, study the machine and try to discover what is wrong. We should be glad to pass on to you any information of value which we have gained from our ten years of experience with machine milking.

The question is often asked, Can you get as much milk by machine as by hand? This experiment station says, yes. The records given in one of their bulletins are by far the most extensive that have ever been gathered.

KEEP THE MACHINE CLEAN

This is just as important as operating it properly. Very few farmers who are using machine milkers are keeping them bacteriologically clean. Where this is not done, the milk usually has a germ content of 50 to 10,000 per cubic centimeter as it enters the teat cups and leaves them with a germ content of 200,000 to 5,000,000 per cubic centimeter. Such milk sours quickly and is not fit to be sold as market milk, or for butter or cheese making.

The pail can be kept clean in the same way that any milk pail is kept clean. Steam or scald it and dry it out thoroughly. Rubber parts can not be kept clean in this way, and they should be kept in a disinfectant solution. Various germicides have been tried out for the purpose, and several of them are useful. Very few have been tried out thoroughly to justify recommending them. The one found to be most useful and sure to give satisfaction, if directions are followed, is ordinary chloride of lime—bleaching powder—purchasable at any drug store. This is equally as good as, or better than, the patent preparations on the market frequently recommended by manufacturers of milking machines, for all of which you pay double prices.

PREPARING DISINFECTANT SOLUTION

Do not buy more than one or two twelve-ounce cans of chloride of lime at any time, and do not accept any in broken or rusted packages, or any that is moist. It should be a dry powder if it is fresh and of good strength. Prepare a stock solution by adding all the powder in a can to a gallon of water in a pitcher or tall glass jar. This will give you a greenish colored liquid with a heavy, white sediment of lime.

Fill a second crock holding twenty to thirty gallons with water and add one pint of the stock solution to this twice a week. Double this quantity will do no harm. The solution in the big crock loses strength quickly on using, and in a few days will become useless if the new chloride is not added. It is advisable to add enough salt to the crock to make a strong brine, as this keeps the solution from freezing in cold weather, and brine is of itself a good solution in

which to keep the teat cups. The salt, however, is not necessary if attention is given to keeping up the strength of the chloride solution. This solution may be used indefinitely if its strength is maintained by adding fresh chloride of lime solution as directed.

PROCEDURE FOR CLEANING

Immediately after each milking, prepare three pails. Fill Pail 1 with clean cold water, Pail 2 with hot sal soda water, and Pail 3 with clean hot water. While the teat cups are still attached to the machine, immerse them in these pails successively, at the same time sucking the water through them. Then take the teat cups and stanchion hose and either suspend them or immerse them in the solution in the large crock. Care should be taken when putting the tubes into the solution to make sure that all air bubbles are out of the tubes and that they are completely immersed.

Neither rubber nor properly made metal parts are injured by the solution recommended. In case you have trouble from corrosion of the metal parts, it will show you that the manufacturer from whom you have purchased your machine has given little thought to making his machine a sanitary as well as a mechanical success. Machines at the New York Experiment Station, handled as above outlined, have been found by many tests to be as near sterile as it is practicable to make them. Milk drawn through machines cared for in this way is cleaner and freer from bacteria than hand-drawn milk.

Once a week the rubber teat-cups should be taken apart completely and each part thoroughly cleaned. No disinfecting solution will take the place of cleaning.

Just before beginning to milk, suck a pail of clean water, either hot or cold, through all of the teat cups. Otherwise traces of the disinfectant may be carried over into the milk. Even if this does happen and traces are carried over, harmless compounds are formed like some already present in the milk. The action is such that it would be necessary to add large quantities of the disinfectant if anyone should attempt to use it fraudulently as a preservative in milk. If this is done the milk has such an unpleasant odor and taste that it is unsalable. Chloride of lime is also a very valuable disinfectant for use in caring for unfiltered city water supplies, and large quantities of it are used in this way.

DO MILKING MACHINES CAUSE GARGET?

It is frequently claimed that they do, but there is no satisfactory evidence upon which to base such a claim. Thus far very few records have been secured upon which to base an intelligent opinion. There has been no more trouble with garget in the station herd in the case of machine-milked cows than in the case of hand-milked cows. Moreover, such records as have been gathered in the course of milk control work, where the milk, from thirty-six to forty farms—eight of which have used or are using machines of four different makes—do not indicate that garget is spread any worse in the machine-milked than in the hand-milked herds. In the course of two years four herds have been badly affected with garget. Two of these were hand-milked, two machine-milked. Machine milking was discontinued on one farm partly on account of the garget. On the other farm machine milking was continued and the garget infection cleared up fully as quickly as it did on the farms where hand milking was practiced. Further information secured under carefully controlled conditions must be obtained before it will be clear whether or not this claim that garget is spread by machine milking is true. There is no evident reason why it should be so.

FINAL WARNING

The labor shortage has caused and will cause machines to be put upon the market which are intended to sell rather than to give satisfaction. Deal only with responsible firms whose business reputation is worth more to them than the few thousand dollars which can be gained by selling a few milking machines.

Watch the back-east cousin's eyes bug out when he sees Kansas send a wallop to the kaiser's jaw by raising a 200,000,000-bushel wheat crop next year.



Could anyone fool you on a Rose
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Of course not!

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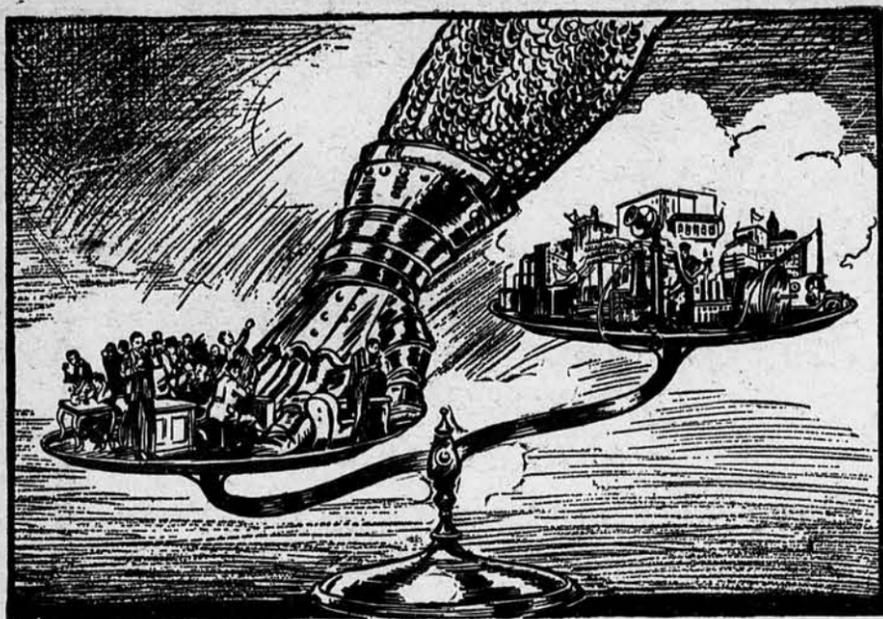
2224 E. 4th St. WATERLOO IOWA



Destroy the Rats

Few people realize the extent of losses caused by rats. The committee on injurious mammals of the Kansas Council of Defense recently made the statement that there are two million rats in the state and that they cost the people not

less than four million dollars a year. In addition to the many kinds of mischief credited to rats, it is claimed a single rat will eat forty-five to fifty pounds of grain in a year. It would certainly seem that there should be a united campaign made against these dangerous and destructive pests.



The Weight of War

The heavy hand of war has disturbed the balance between supply and demand the world over. Our problem of serving the public has all at once assumed a new and weightier aspect.

Extraordinary demands on telephone service by the Government have been made and are being met. Equipment must be provided for the great training camps, the coast-defense stations must be linked together by means of communication, and the facilities perfected to put the Government in touch with the entire country at a moment's notice.

In planning for additions to the plant of the Bell System for 1917, one hundred and thirty millions of dollars were apportioned. This is

by far the largest program ever undertaken.

But the cost of raw materials has doubled in a year. Adequate supplies of copper, lead, wire, steel and other essentials of new equipment are becoming harder to get at any price, for the demands of war must be met.

Under the pressure of business incident to war, the telephone-using public must co-operate in order that our new plans to meet the extraordinary growth in telephone stations and traffic may be made adequate.

The elimination of unnecessary telephone calls is a patriotic duty just as is the elimination of all waste at such a time. Your Government must have a "clear talk track."



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy One System Universal Service

Will Your Subscription Expire In July?

We have several thousand subscriptions expiring in July. It would be a saving of much time to us and avoid missing copies by the subscriber if the renewal could reach us before the expiration. The best way to do is to send in \$2 when you renew and have your subscription paid three years in advance.

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Kansas Farmer, Topeka, Kansas.

Gentlemen: Please find enclosed \$.....for which send me

KANSAS FARMER.....year.....
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Post Office

State..... R. F. D. No.....

Are you already taking KANSAS FARMER?

The Wilson County Sheep Growers' Association held a wool sale June 22. Their wool had been stored in the farm bureau office in Fredonia and buyers for this wool were secured, the result being that the 4,300 pounds sold at prices

ranging from thirty to sixty-two and a half cents a pound. The sheep men of this organization feel satisfied that much better prices were secured through this pooling of their product and selling it in a co-operative way.



Harvesting Sweet Clover Seed

NOW that sweet clover is finding a place as one of our important farm crops, methods of handling the seed crop are of considerable interest. As too often handled one-fifth to three-fourths of the total seed yield of sweet clover is lost from shattering. Cutting at the wrong time and improper handling of the crop at the time of harvest are largely responsible for this loss. How to determine the right time to cut the seed crop and how to harvest it with the least possible loss of seed by slight adjustments of harvesting machinery are discussed in a recent publication of the United States Department of Agriculture, Farmers' Bulletin 836, "Sweet Clover: Harvesting and Threshing the Seed Crop."

White sweet clover and biennial yellow sweet clover may be harvested for seed the year following seeding. It is becoming a general practice in many sections of the country to utilize the first crop of the second season for pasture, silage or hay, and the second crop for seed. The shorter growth of the second crop is a very desirable feature, as it may be cut with an ordinary grain binder without much difficulty. It is possible to equip the grain binder with pans and extensions to the rear elevator plate and binder deck so that at least ninety-five per cent of the seed which shatters when the crop is cut may be caught as it falls and saved. The bulletin explains in detail, with drawings, how to make at small cost this seed-saving attachment. Other machines which may be used to harvest sweet clover are the self-rake reaper, the grain header and the corn harvester.

The time of cutting the seed crop should be governed largely by the machinery which is to be used. If the plants are to be harvested by a self-rake reaper or a grain binder, they should be cut when approximately three-fourths of the seed pods have turned dark brown to black. At this time some flowers and many immature pods will be found on the plants but the field will have a brownish cast. Where a grain header is employed the plants may become somewhat more mature before cutting. More seed is shattered when the plants are cut at this stage than when cut earlier, but this is not necessarily a loss, as the grain header is used for the most part in semi-arid sections where shattered seed is depended upon to reseed the land.

Much seed may be lost if harvesting is delayed for only a few days. Many fields have been observed, according to the department specialist, in which ninety per cent of the seed had shattered in less than two weeks after the time the plants should have been cut. Cutting the plants when they are damp from rain or dew also will reduce loss by shattering.

When it is possible to thresh in a week or ten days after cutting, the crop should be threshed directly from the field, as little seed ordinarily will be lost during this time and the work of stacking will be avoided. The seed may be threshed either by flailing or by the use of a grain separator or a clover huller. The yield of sweet clover seed

varies from two to ten bushels of cleaned seed to the acre. Sweet clover straw may be utilized for soil improvement or as a roughage for stock.

Co-Operation, Not Advice

The big business men of the state have gotten wise to the fact that the farmer is willing to do his share for his country but needs co-operation more than advice. So they are going to make their money take the same chance as the farmer's money and labor, and invest in a big seed-wheat pool on a fifth-crop share basis, so as to make it possible for the farmer to put out a bigger acreage than he now has seed for.

There is no charity about it. It is a plain business investment and a big co-operative plan. If the farmer loses, the investor loses. If the farmer wins, the investor wins. And the boys in the trenches won't have to eat hot air, even if wheat and bread do come high.

Wheat Will Be High Next Year

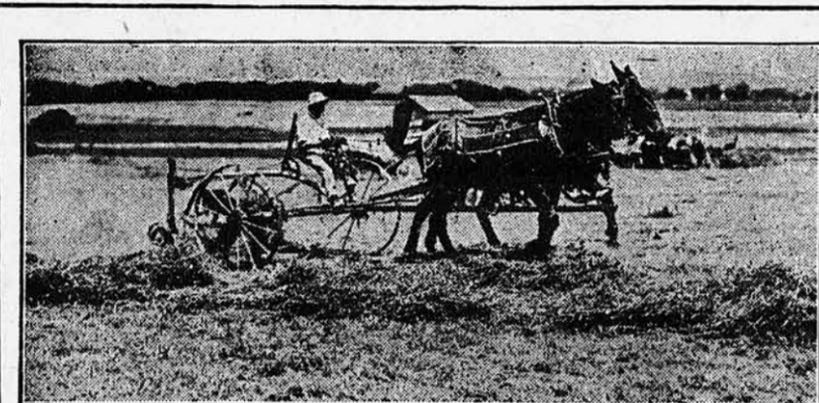
You can't get around it. Something like thirty million men have been taken from farming and other productive occupations and are fighting. Other millions of men, women and children have been taken from the farms and are making munitions and other war supplies. Even in Germany, France and other European countries, where the need of food is so great, farm land is lying idle for want of workers. This can have but one result—high prices.

The world wheat supply is about two-thirds of the demand. The long-headed, far-seeing man knows what is coming just as sure as fate. And he is going to grab Old Man Opportunity by the front hair or coat-tails or any place he can get a hold, and hog-tie him. He is going to sow all the wheat he can lay his hands on.

Turn Waste Into Profit

Saving a billion dollar waste of the corn belt by using silos is featured in an article which appeared in a recent agricultural pamphlet published by the Rock Island Railroad Company. It is pointed out that one of the greatest, if not the greatest, waste in any single industry in this country occurs in handling the corn crop. The grain of the annual corn crop of the United States is worth on the farms one and a half billion dollars. In a ripe corn plant sixty per cent of the feed value is contained in the kernels and forty per cent in the stalk and leaves. With the grain worth on the farms one and a half billion dollars, the feed value of the rest of the crop, if fully utilized, is a billion dollars. At least ninety per cent of the feed value of the stalk is lost under the present system of farm management—a waste with this crop alone of nine hundred million dollars yearly. No other business but farming could stand such an enormous loss.

In the New England and the Middle States most of the stalks are saved as fodder, and there are many silos, but with the damage from weathering, the waste in handling and the loss in digestibility from drying, the farmers are



SIDE-DELIVERY RAKE PUTTING ALFALFA IN WINDROW BEFORE LEAVES ARE DRY AND BRITTLE.—IDEAL METHOD OF CURING

very far from utilizing the full feed value of the corn stalk. In the corn belt, where the bulk of the crop is raised, comparatively few corn growers harvest the stalks, and the only returns most of them secure from the forage is by pasturing the dead stalks during the winter. Frequently the losses due to death of stock pastured in the stalk fields far exceeds the returns from the feed.

Contrast this waste by the corn grower with the practices of large business organizations. For years the great packing houses have sold dressed meat for less than they have paid for the live weight of the animals from which the dressed meat was secured. Yet every year these packing houses return millions of dollars profits because they utilize to the fullest extent the value of their by-products. At the same time the corn growers are wasting most of forty per cent of the feed value of over one hundred million acres of corn.

The silo provides the corn grower with the means for utilizing the largest proportion of the feed value of his entire crop, grain and forage. The whole crop can be stored economically in the silo in a compact form, with little waste. The silage can be kept for days, months or years, or feeding may begin as soon as filling the silo is completed. The silo can be filled in good weather, when it is raining, or in times of extreme dry weather and hot winds. Silage is a good feed both in winter and summer. It may be fed daily through the winter. When grass is ready in the spring, the feed that remains in the silo can be covered and will keep well until needed when the summer feed shortage comes. Silage furnishes a green, succulent, appetizing feed through the winter, the same as grass through the summer. It keeps the animal's system in good condition, and feeds given with it are better digested than when fed with dry forage. An experienced feeder of silage has well said that silage in winter is pasture without flies.

Well-grown corn makes the best silage; kafir, milo and cane follow closely. Broom corn, after brush has been harvested, is used successfully around Liberal, Kansas. In continuous rainy weather, alfalfa, clover and other hay crops may be saved in good condition in the silo. Any solid-stemmed feed plant will make good silage, if harvested at the right stage of growth. Plants with hollow stems, like green wheat and rye, do not make satisfactory silage.

Every live stock growing district in the United States needs the silo. The general use of the silo will make the high priced small farms of the corn belt profitable growers, as well as finishers, of beef cattle and mutton sheep. The vast dry farming sections of the Southwest will be as thickly settled and have as comfortable farm houses as the northern corn belt whenever dairying, drought-resistant forage crops and the silo is the system of farming followed, instead of grain farming. The South, with its millions of acres of cheap lands and its short, mild winters, can make a profitable specialty of beef production, whenever the silo and corn silage is generally adopted on the farms and plantations. The silo feed crops and live stock will make Western Kansas farming safe.

Cow Pea Seed

For twenty years I have been studying safe food crops for our plains farmers. In this time I have seen adapted varieties of cowpeas making good as no other plant has made good. Settlers in Western Kansas and Eastern Colorado call the early black-eyed cowpea the "hard times beans."

After looking over several hundred gardens in Southwest Oklahoma and in Texas this summer, when hot winds have destroyed many crops, we find the cowpea growing and furnishing food.

But cowpea seed is always high-priced. This is because the seed is mostly picked and threshed by hand labor. Why not use a neighborhood threshing machine which thresh cowpeas cut and raked by machinery, as are used in some places. Such neighborhood co-operation would produce seed cheaper.

Save plenty of seed, but save it more cheaply.—J. E. PAYNE, Oklahoma.

Keep Milking Machine Clean

W. R. S., Dickinson County, asks if it is possible to produce as clean milk with the milking machine as by hand milking. It might seem that since the milk goes into a closed receptacle the

milking machine would produce much cleaner milk than is possible by hand milking. The facts are, however, that you cannot be too cleanly in the care of the milking machine. The mere fact that it is a closed contrivance is no assurance that the milk will be clean unless the machine itself is kept absolutely clean. Germs of all kinds can multiply rapidly in cracks and crevices. Proper sterilization and cleaning of the machine are important if the milk is to be kept thoroughly sanitary. It is just as important to have the udders of the cows wiped off and free from dust or dirt as when they are milked by hand. The milking machines are now being made so they are thoroughly successful when properly used, but like all other machines they lack brains. These must be supplied by the people who operate them.

Flies and Summer Dairying

J. R. W., Allen County, asks if anything can be done to keep the flies from annoying his dairy cows. Since the hot weather came on the flies have been so thick that his cows are falling off badly in milk! They stand in the pasture and fight flies more than they graze.

This is a common complaint. Dairymen all over the country are having the same difficulty. This is one of the most trying seasons of the year. At this season it is almost impossible to keep cows up to a full flow of milk because of flies and the hot weather. Many dairymen plan to have their cows dry during the summer period and thus avoid doing very much milking when the flies are at their worst.

Very little can be done in controlling flies. They breed in stables and in manure piles, and if it were possible to keep all the manure hauled out and scattered each day their breeding places would not be so numerous and some reduction might be made in the number of flies. Where it is necessary to permit the manure to accumulate, the fly larvæ can be killed by treating the manure with commercial borax. This should be applied at the rate of about a pound of borax to sixteen bushels of manure.

It is also possible to help a little by spraying the cows with some fly repellent, a number of which are on the market. When cows do not graze enough on account of flies it helps in keeping up the milk flow to give them some extra feed such as alfalfa hay so they can fill up quickly. If there is a pasture near the barn where the cows are milked they should be given a chance to graze at night and be permitted to get into a darkened shed during the heat of the day when the flies are most annoying. Having some green feed, such as sweet corn or Sudan grass, close to the barn to give the cows at night, will help out on the feed question. The important point is to get the cows to eat a full ration. The principal reason they fall off in milk when flies are bad is that they spend so much time fighting flies that they do not eat enough to keep up the milk flow. It takes a cow a long time to eat enough grass in the pasture to supply the nutrients for a heavy flow of milk.

Paint a Preservative

Keeping buildings well painted increases the value of property at least twenty-five per cent. If the wooden structures are permitted to become bare and exposed, the surfaces grow rough and the wood is subject to warping and cracking. Dampness enters such exposed wood and conditions become favorable for the action of destructive fungi. Decay will follow rapidly. Applications of good paint, however, will preserve wood almost indefinitely.

Keeping the farm buildings of all types well painted is as much a business proposition as keeping them insured against tornado, fire and lightning, and nothing adds more to the attractiveness of a farm than well painted buildings.

Paste paints cost \$3 to \$4 a gallon, while prepared paints sell for \$2.50 to \$3 a gallon. Prepared paints contained in sealed packages are the most economical and convenient. The paint selected should be composed of pigment and liquid, the pigment being white lead—corroded or sublimated—admixed with zinc oxide with or without a small amount of chemically inert pigment. This pigment should be ground in a liquid composed of linseed oil with a small amount of drier and thinner.

It is customary to add to 100 pounds of paste paint from four to six gallons



Save All Your Corn Crop This Year

You'll need the 40% crop value in the stalks; and you can rely upon the Moline Corn Binder to do a clean job of harvesting, no matter what condition the crop is in.

Gathering boards extend 5 1/2 feet in advance of knife, straighten up down corn before cutting. Properly set springs and shields prevent clogging by short stalks, weeds or loose leaves—insure steady work.

Conveying chains deliver corn to binding device in perfect order. You get smooth, firmly-bound bundles with unvarying regularity—no missing. Lightest running main wheel in the world. All carrying and driving friction is eliminated by self-aligning, anti-friction bearings.

Solid steel main frame holds working parts in easy working position at all times—insures long life and good service under hard strain.

Ask your Moline Dealer about the Moline Corn Binder, or write us for Illustrated Literature.

Address Department 10

Moline Plow Company, Moline, Illinois

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| Plows (6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100) | Stalk Cutters | Grain Drills | Rice Binders | Spreaders |
| Harrows | Hay Loaders | Lime Sowers | Grain Binders | Scales |
| Planters (Corn) | Side Del. Rakes | Seeders | Corn Binders | Wagons |
| Cultivators | Dump Rakes | | Mowers | Vehicles |
| Listers | Potato Diggers | | Reapers | Farm Trucks |
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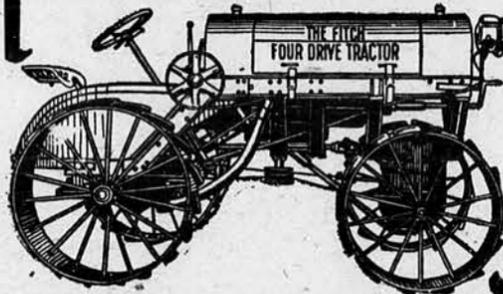
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BE SURE TO VISIT OUR SPECIAL DISPLAY AT THE FREMONT, NEBRASKA, TRACTOR DEMONSTRATION, AUGUST 6 TO 10.

This "FOUR DRIVE" Tractor Does The Work



POWER applied on all four wheels gives greater traction—eliminates weight—cuts down fuel cost. Reliability is built into every inch of our Four-Drive Tractor. You can depend upon it. It's worthy of your faith, because you can rely upon the Four-Drive to get your work done. It's a good tractor sold at the right price to earn you big dividends on your investment.



Simple in construction—reliable from the word "go"—dependable in any weather—on any soil, or any kind of road. The Four-Drive is built to do the work. A one-man outfit for any kind of field or belt work.

Waukesha Motor—Timken Bearings—Timken, David Brown and Ganschow Gears—all parts of the best materials obtainable and fully guaranteed. Kerosene or gasoline for fuel.

See Us at the Fremont Show—August 6 to 10

Write today for illustrated circulars and full details.

THE FOUR DRIVE TRACTOR COMPANY

953 E. Maple St. - Big Rapids, Mich.

WINTER KILLING OF WHEAT PREVENTED

Millions of dollars were lost by seeding winter wheat last fall in loose, lumpy, unpacked and poorly prepared seed beds. Will it pay to seed in such seed beds again?

Western Pulverizer, Packer and Mulcher

Prevents winter killing by putting the seed bed in perfect condition. Requires less time, with less work and horse-power, and produces a perfect stand with one-third less seed. LET US PROVE IT TO YOU. It has done it for others, it will do it for you. Send for free illustrated catalog containing full information and prices direct to you. This book is worth its weight in gold to any farmer or land owner.

WESTERN LAND ROLLER CO., Hastings, Nebraska, Box 602



of linseed oil and a pint of liquid drier. The mixture may be thoroughly stirred in a barrel or tub. For first coat work a gallon or more of turpentine may be used to take the place of part of the linseed oil.

Kerosene Emulsion

Kerosene emulsion is good for killing lice and other sucking insects. It is made by dissolving one-half pound of common soap in one gallon of boiling water. Pour this into two gallons of kerosene and stir vigorously so as to mix the kerosene with the soapy water.

When ready to apply, mix one gallon of the solution (which looks somewhat like sour milk) and ten gallons of water.

Preliminary catalogs of prizes on dairy products and cattle at the National Dairy Show are now available and may be had by writing to the National Dairy Show at No. 8 East Long Street, Columbus, Ohio, or People's Life Building, Chicago, Illinois. The dairy show opens October 18 and closes ten days later.

You might as well try to carry water in a sieve as to try to make money with lousy hogs.

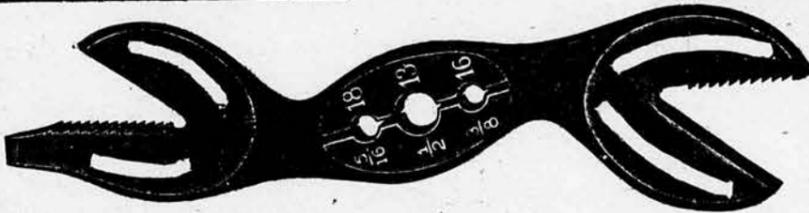
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Prepare to take your place in the ranks of America's army of highest salaried young people who, tomorrow, will double their present big lead in the world of commerce.

Our training is your SUCCESS INSURANCE. Good positions go begging. We have one for you.

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THREE DIES FOR CUTTING or cleaning threads in bolts used on farm machinery. It is drop-forged from the best steel, scientifically tempered, nothing to get out of order.

OUR SPECIAL FREE OFFER We will send the handy Alligator Wrench free and postpaid to all who send \$1.00 for a one-year subscription to Kansas Farmer, and 15 cents extra to pay packing and postage—\$1.15 in all. Address
KANSAS FARMER --:-- TOPEKA, KANSAS

Classified Advertising

Advertising "bargain counter." Thousands of people have surplus items of stock for sale—limited in amount or numbers hardly enough to justify extensive display advertising. Thousands of other people want to buy these same things. These intending buyers read the classified "ads"—looking for bargains. Your advertisement here reaches over 60,000 farmers for 5 cents a word per week. No "ad" taken for less than 60 cents. All "ads" set in uniform style, no display. Initials and numbers count as words. Address counted. Terms, always cash with order.
SITUATIONS WANTED ads, up to 25 words, including address, will be inserted free of charge for two weeks, for bona fide seekers of employment on farms.

HELP WANTED.

RAILWAY MAIL CLERKS WANTED—Men, 18 or over. Commence \$75 month. Every second week off with pay. Education unnecessary. Sample examination questions free. Write immediately, Franklin Institute, Dept. A-82, Rochester, N. Y.

FARMERS, 18 OR OVER, WANTED (men-women) U. S. Government jobs. \$99 month. Hundred vacancies. Common education sufficient. Write immediately for free list of positions. Franklin Institute, Dept. E-82, Rochester, N. Y.

CATTLE.

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

FOR SALE—VERY CHOICE HIGH- grade Holstein calves, either sex, three to six weeks old, at \$20 per head, crated for shipment. Or if you want dairy cattle of any age, I will buy them at a commission from the best herds in Southern Wisconsin. Albert M. Hanson, Whitewater, Wisconsin.

HIGHLY BRED HOLSTEIN CALVES, either sex, 15-16th pure, from heavy milkers, five to seven weeks old, beautifully marked. \$23, crated and delivered to any station, express charges paid here. Send orders or write. Lake View Holstein Place, Whitewater, Wisconsin.

HORSES AND MULES.

JACK FOR SALE OR TRADE—FIVE years old, gray, 14 hands jack measure; excellent breeder. Sacrifice price. Harry Bilson, Eureka, Kansas.

SEEDS

SWEET CLOVER. SOW ON STUBBLE or with wheat nurse crop. Lewis, the Clover Man, Route 1, Madison, Kansas.

SITUATION WANTED.

EXPERIENCED MAN WANTS A JOB on farm or ranch or run on shares. Prefer change after 1st or 15th September. Robert Owen, Ogallah, Kansas.

HONEY.

HONEY—NEW CROP. SEND FOR PRICE list. Bert W. Hopper, Rocky Ford, Colo.

DOGS.

AIREDALES AND COLLIES—GREATEST of all pups. Grown dogs and brood matrons. Large instructive list. 5c. W. R. Watson, Box 128, Oakland, Iowa.

ALFALFA.

ALFALFA SEED, \$8 PER BUSHEL. Good purity and germination but dark color. Better grades for more money. Write for free samples and prices. Henry Field, Shendoah, Iowa.

MISCELLANEOUS.

FERRETS—FEMALES, \$2.50; MALES, \$2; pair, \$4. H. G. Hardy, Wellington, Ohio.

MAIL YOUR BROKEN GLASSES TO Regester Bros. Optical Co., Norton, Kansas. Any lens duplicated promptly.

POULTRY.

WHITE ROCK EGGS, \$4 PER HUN- dred. Nora Lamaster, Hallowell, Kansas.

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

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

FIVE LARGE FLOCKS UNDER ONE sale management, R. C. Reds, 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.

POULTRY WANTED.

WE WILL MAKE IT WORTH YOUR while to ship your eggs and poultry to The Coges, Topeka.

THE STRAY LIST.

TAKEN UP—ON THE 23D DAY OF December, 1916, by P. Whitman, of Marlenthal, Wichita County, Kansas, one bay horse 10 years old and one bay horse colt one year old. No marks or brands. Dean Trueblood, County Clerk, Leoti, Kansas.



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.

Not those who soar, but those who plod
Their rugged way, unhelped, to God
Are heroes. —Dunbar.

"The woman who is watchful in her home, careful of every bit of food used, is serving her country just as truly and just as effectively as the nurse in the Red Cross tent or the man at the front or on the sea."

Do not make too hard work of canning. If you have a fairly even fire, it is not necessary to watch the steam gauge constantly when sterilizing. Even though the pressure should drop slightly below the number of pounds indicated in the recipe or run up above it for a short time, no harm is done. Of course it should not be allowed to remain long above or below the proper point. If you are busy with other things, it is a good idea to set the alarm for the time when sterilization will be completed, so that it will not be overlooked.

Two Valuable Bulletins

Two recently published Government bulletins that should be in the hands of every housewife are Farmers' Bulletins No. 839, "Home Canning by the One-Period Cold-Pack Method," and No. 841, "Drying Fruits and Vegetables in the Home."

The first of these gives full instructions for a simple method of canning vegetables, soups, fruits, and meats, with a table giving the time required for scalding, blanching, and sterilizing them. Various types of apparatus for sterilization are discussed. Bulletin 841 gives directions for drying the vegetables and fruits that are adapted to this method of preservation, and recipes for cooking them. A home-made dryer is described as well as several types of patented dryers.

Both bulletins may be obtained free of charge by addressing the Division of Publications, U. S. Department of Agriculture, Washington, D. C.

How to Can Tomatoes

Select firm, well-formed tomatoes, not over-ripe. Scald in hot water one to three minutes to loosen skins. Some tomatoes will work up much more easily than others, so one should make a test or two before trying to handle large quantities. If it is found that scalding one minute or less is better than two or three minutes, this is the length of time those particular tomatoes should be scalded. Dip quickly into and out of cold water, remove skin and core. Pack in jars whole or in quarters, pressing down with a tablespoon. Add one level teaspoonful of salt to each quart. Do not add any water, but use strained juice from additional tomatoes if liquid is

wanted to fill up space, which usually is not necessary. Place rubber and cap in position, but do not tighten fully. If using tin cans, seal completely. Place the packed containers on a false bottom in a vessel of water sufficiently deep to cover them by one inch and allow to remain at a boiling temperature for thirty-five minutes if using a hot water bath canner. If using the steam-pressure outfit, ten minutes under five pounds of steam is sufficient. Remove jars and tighten lids. Do not let cool draft blow on jars while they are hot.

TOMATO PULP FOR SOUP

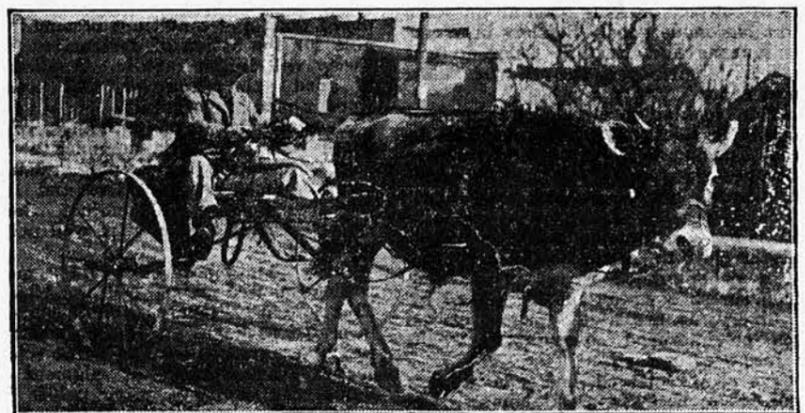
Place tomatoes in a wire basket or piece of cheesecloth and plunge into boiling water from one to three minutes, then into cold water, removing quickly. Remove skin and core. Place tomatoes in a kettle and boil thirty minutes. Pass tomato pulp through a sieve. Pack in hot glass jars or tin cans while hot, adding a level teaspoonful of salt per quart. Partially seal glass jars. Sterilize for thirty minutes in hot water bath, or in pressure cooker eighteen minutes under five pounds steam pressure or ten minutes under ten to fifteen pounds pressure. Remove jars and tighten lids.

TOMATOES CANNED WITH CORN

Blanch fresh corn on the cob five minutes. Cold-dip quickly. Cut corn from the cob, cutting from tip to butt. Scald tomatoes about one and one-half minutes and cold-dip. Remove skin and core. Chop tomatoes into medium-sized pieces. Mix thoroughly two parts of tomato with one part of corn. Pack the mixture in hot glass jars or enameled tin cans. Add a level teaspoonful of salt per quart. Put rubbers and caps of jars in position, not tight. Cap and tip tin cans. Sterilize seventy-five minutes in hot water bath, forty-five minutes in steam pressure outfit under five pounds of steam, or thirty minutes under fifteen pounds of steam. When corn and tomatoes are canned together, the acid from the tomatoes helps keep the corn; hence it is not necessary to allow so much time for sterilization as when corn is canned alone. Remove jars, tighten covers, and invert to cool. Wrap in paper to prevent bleaching.

CORN, TOMATOES AND BEANS

Use one part of corn, one part of green string beans, and three parts of tomatoes. Blanch fresh corn on the cob for five minutes and cold-dip. Cut corn from cob, cutting from tip to butt. Prepare string beans and cut them into convenient lengths. Blanch them four minutes and cold-dip. Blanch tomatoes one to three minutes and cold-dip. Remove skin and core. Cut tomatoes into medium-sized pieces. Mix thoroughly. Pack mixture in hot glass jars. Put rubbers and caps of jars in position, not



EDWARD LARSON, Riley County, driving his Jersey steer. This steer answers to "Whoa" and "Git-up" as well as does any horse. These two are frequently seen on the streets of Riley. Edward is a member of the state pig club and is a busy boy.

tight. Sterilize for the same length of time as in preceding recipe. Remove jars, tighten covers, invert jars to cool, then wrap with paper to prevent bleaching, and store.

Corn and Cheese

Corn and cheese, prepared as are macaroni and cheese, are recommended by the U. S. Department of Agriculture as a new and palatable dish. The recipe calls for

- 1 cupful coarsely ground or cracked corn
 - 1 quart water
 - 1 1/2 teaspoonfuls salt
- Boil the corn in the salted water until tender. Drain and combine with sauce made as follows:
- 1 cupful skim milk
 - 1 cupful finely-cut cheese
 - 2 tablespoonfuls flour
 - 1 teaspoonful salt
 - 1/4 teaspoonful mustard, paprika, or other seasoning

Mix seasoning with the dry flour. Add enough milk to form a smooth paste, put in balance of milk, heat in stewpan, stirring constantly until thick. Add cheese and stir until it is melted.

Put a layer of boiled corn in baking dish, add layer of sauce, and so on until all has been used. Sprinkle bread crumbs over top layer of sauce and cook in a medium oven until the crumbs brown.

A richer sauce may be made by adding two teaspoonfuls of butter. When butter is used it should be placed first in stewpan, the flour and seasoning added to it and the milk and cheese put in as given in first recipe.

The Boy Scouts of America performed a notable service to the country in their campaign for the sale of the Liberty Loan Bonds. Through their efforts more than \$25,000,000 of the bonds were sold directly. How many sales were due indirectly to their activity cannot be known. The boys worked systematically and thoroughly and with an earnestness that was inspiring. They covered fields that could not have been well covered by other agencies and effected sales that would not have been made without their efforts. The Scouts have not only proven their patriotism. They have shown their efficiency and their civic value.

A delicious way of serving harvest apples is to cook them in a little water until soft, mash with a potato masher, add sugar and vanilla or nutmeg, and cook a few minutes until sugar and flavoring are blended with the sauce.

Rancid olive oil can be freshened by heating with a few slices of potato.

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?

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. 8024—Ladies' Waist: Cut in sizes 36 to 44 inches bust measure. For practical purposes this is a waist that will give full measure of satisfaction. Contrasting goods is used to face the fronts that roll back to form "point revers" and the broad collar is in matching tone. The full-length sleeves are gathered into band cuffs. No. 8217—Boys' Russian Suit: Cut in sizes 2, 4 and 6 years. Still another variation of the ever popular Russian suit is shown in this picture. The smart feature of this particular suit is the panel both front and back. The young man is kept within bounds by the belts at the sides, which also serve the purpose of holding the fullness in place. No. 7832—Ladies' Shirtdress: Cut in sizes 36 to 44 inches bust measure. An irresistible model in plain and striped silk, or your choice of fabrics and colors, or in solid white. The shoulder fronts are gathered and in the back at the waistline the fullness is gathered under a stay belt. No. 8186—Ladies' Skirt: Cut in sizes 24 to 32 inches waist measure. Exceedingly smart in style is this three-gored skirt with a becoming fullness across the back of the slightly raised waistline, which is partly due to an inverted plait at center back. The side tabs and the belts which connect them give a trim look to the skirt, but they may be omitted at will. No. 7821—Ladies' Dress: Cut in sizes 34 to 42 inches bust measure. Convincing as to the popularity of the "over-effect" in one-piece dresses. The surplice closing of the overblouse gives a neat vest effect to the separate gumpie which is of different material and has full sleeves gathered to deep cuffs. The skirt is cut in three gores. No. 7846—Ladies' Apron: Cut in sizes 36, 40 and 44 inches bust measure. In every way worthy of your approval, this apron has a very full body and skirt section. The closure is at front with loops and buttons. Contrasting goods contribute the collar, cuffs and belt, as well as a pocket of generous size in each side of the front. A square yoke gives the garment balance and long or short sleeves may be used.

Special Club Subscription Blank

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Patriots and Loyal Citizens Will Want to Show Their Colors



"Your Flag and My Flag"

"Long may it wave
O'er the land of the free
and the home of the
brave"

The big demand, the scarcity of good dyes and the high price of cotton have made it hard to secure flags. We have been fortunate enough to secure a few high-grade printed flags 3 feet by 5 feet with canvas heading and brass grommets, colors fast.

You May Have One of These Flags If You Act Promptly HERE IS OUR OFFER

For only \$1.50 we will enter your subscription or extend your subscription for one year and send you this beautiful flag, postpaid. Or for \$2.00 we will renew your subscription for one year and one new subscription for one year and send you one flag postpaid.

Don't Delay—Send Your Order NOW, Before It Is Too Late

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DESK D, KANSAS FARMER, TOPEKA

Real Estate For Sale

If you would buy a farm for less than value of crops raised this year, write us. Corn, oats, and wheat, almost perfect crop. **SOUTHERN REALTY CO., McAlester, Okla.**

SHETLAND 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.

Fighting Aeroplanes

The Germans have arranged their guns in batteries; and when an enemy plane came within range, the first gun would throw three shells into the air in rapid succession. They were so devised that they would explode at different elevations, liberating different colors in a smoke cloud. Usually one of these would be somewhere near the plane. Thus the Germans had three fixed altitudes in the air and from their smoke test they could instantly determine the altitude of the plane.

A second gun of the battery fires a big, high explosive shell, aimed as close to the aeroplane as possible. If it explodes close enough it will wreck the machine; but the Germans do not really expect to get one even with the second shell. The effect of this explosion is to "dud" the air. It creates air conditions which for a time make it impossible to move in that vicinity.

It is the third gun which gets him. Having ascertained the range with the first, and killed the air with the second, a big shrapnel shell is directed from the third gun. If the machine has been fairly caught by the high explosive shell, the six hundred shrapnel balls released by the next generally finish it.—Lieut. G. T. Cummings in *The American Boy*.

Uncle Sam is on third base, somewhere in France. A hard drive to the wheat field will bring him home. Don't let him die on third.

The only thing that can cause eggs to be other than very high this winter is an exceptionally open winter. Even this cannot keep prices very low when so

JERSEY CATTLE.

INTERESTED OXFORD OWL
For Sale—Three months old, broken color, sire Gedney Farm Medal Oxford, who is 37 1/2 per cent Oxford Lad, sire of Oxford Cocotte, 724 pounds 15 ounces butter in one year, and forty-three others. Dam, interested Golden Fern, 31 1/2 per cent of interested Prince, sire of Passport, 987 pounds 6 ounces of butter, and thirty-eight others. Price \$50. J. O. B. Lawrence, Kansas. **BISON FARM - LAWRENCE, KAN.**

120 Jersey Cows and Heifers

Pure-bred and high grade. Forty bred yearlings, superior individuals, all from profitable dams, now for sale. **J. W. BERRY & SON, Jewell City, Kansas**

REDHURST JERSEYS

Grandsons of Golden Jolly and Noble of Oaklands for sale. Also a few fancy cows and heifers of same breeding. Write. **REDMAN & SON - TILTON, MISSOURI**

Jersey Calf Bull dropped January 4, 1917, out of a rich-milking good-type dam. A bargain. **W. T. Ballagh, Nevada, Missouri.**

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

Chicks May Have Chiggers

Mrs. C. V. E., of Shawnee County, sends in the following inquiry:

"I am raising Wyandotte chickens and I have a number that get scabs on their bodies. It looks as though it might be a chicken pox. They eat well and do not get sick, but the sores seem to continue to grow and I have finally had to have them killed. If any of your readers have had similar trouble and have a remedy, I would appreciate hearing from them what is best to do."

N. L. Harris, superintendent of the experiment station poultry farm, to whom we referred this inquiry, writes as follows:

"I am inclined to think that the trouble is chiggers. Often these little mites will gather beneath the wings in large numbers, causing an acute redness and finally sores which later scab over. With young ducks they often prove fatal. It is just possible that where the birds are running on sandy ground they may have ticks. I should hardly expect ticks that far north and should be more inclined to the theory of chiggers. The only remedy I have ever used is salty grease smeared on the infested regions."

many eggs have gone into cold storage at prices ranging around thirty cents.



Leghorns Produce Eggs at Less Cost

LEGHORNS produce eggs cheaper than hens of the general-purpose breeds—Plymouth Rocks, Wyandottes, Rhode Island Reds, and Orpingtons. This fact, which confirms the belief and experience of commercial poultry farmers, was one of the results obtained in a rather extensive feeding test recently reported by poultrymen of the United States Department of Agriculture. Because they lay as many or more eggs, eat only about fifty-five pounds of feed per head as compared with seventy to eighty-five pounds eaten by the general-purpose breeds, and because their egg yield very materially exceeds that of general-purpose breeds during their second and third laying years, Leghorns, the specialists say, undoubtedly are more profitable to keep for the production of eggs only.

In this test the feed cost of a dozen eggs for one of the Leghorn pens was 7.34 cents in 1913 while the average cost of all the pens of the general-purpose breeds was 10.6 cents. In 1914 the feed cost of a dozen eggs for the same pen of Leghorns was 8.7 cents as against an average cost of 15.1 cents for the second laying year of the general-purpose pens. During their third laying year the cost of a dozen eggs was 8.8 cents, compared to 18.6 cents for the general-purpose fowls. The total value of eggs per hen over feed cost in the Leghorn pen for three years was \$6.84 against \$4.30 for the general-purpose hens. The highest egg production obtained in any of the feeding experiments up to 1915 was by a pen of Leghorns which laid 157.6 eggs per hen, at a feed cost of 6.7 cents a dozen.

The Leghorns produce smaller eggs than the general-purpose breeds. The average weight of the eggs of a pen of Leghorns during the first laying year was 1.42 pounds per dozen as against 1.53 to 1.58 pounds for the other pens. However, Leghorns laying eggs weighing 1.50 pounds per dozen or even more have been selected and bred by many poultrymen. An examination in May, 1915, of 500 eggs from three Leghorn pens showed that 31 per cent weighed more than two ounces each, or 1.50 pounds to the dozen.

The value per dozen of the eggs produced by the Leghorns was from one to three cents less each year than the eggs of general-purpose hens. This difference is due to the fact that the general-purpose breeds are better winter layers than the Leghorns, while the latter give a higher production in the spring and summer. Very few Leghorns become broody, which probably materially affects their egg yield as compared with the general-purpose breeds. Better fertility in the eggs, especially with stock confined to the yards, is more often secured with Leghorns than with the general-purpose or any of the heavier breeds.

Eggs at 14 Cents a Dozen

It has been truly said that "Necessity is the mother of invention." The present high prices of foodstuffs have had a tendency to discourage some poultrymen. But there is no reason why eggs cannot be produced almost as economically now as formerly if the right ration is used, and the selling price of eggs is at least two-thirds more than in former years at this season.

We have been making some tests of various rations on the experimental farm of the American School of Poultry Husbandry at Leavenworth, with a view of compounding a ration which would bring the same results and greatly reduce the cost. We realize that available feeds and prices vary in different localities so this ration is based upon the feed found in Leavenworth and in the Central States. Grains and ground feeds are constantly varying in price, but at the present time are selling here at the following prices per hundred pounds: Cracked corn, \$3.40; wheat, \$3.67; oats, \$2.50; bran, \$1.65; shorts, \$2.25; beef scrap, \$3.50, and corn meal, \$3.80.

The ration which we are now using in the American Egg Laying Contest and which is producing practically as

good results as any we have ever used, which contained a large per cent of wheat, is as follows:

Scratch Feed—
400 pounds cracked corn.....\$13.60
Dry Mash—
150 pounds wheat bran\$ 2.48
150 pounds wheat shorts 3.38
100 pounds beef scraps 3.50
4 pounds fine charcoal
3 pounds fine salt

Cost of 800 pounds of feed.....\$22.96
Cost of 100 pounds of feed..... 2.87

If the above feeds are not available it might pay you to have your local dealer import them for you, if possible, and the prices justify. We have found no other combination that would compare with this ration in price and results. The fact that there is a shortage of wheat, but a large acreage of corn and prospects for an abundant crop, the indications are that this will be one of the cheapest rations that can be used for many months to come. Whenever wheat is as cheap as corn, wheat should be added to the scratch feed.

The cost of this feed can still be reduced to about \$2.70 per hundred pounds by feeding sprouted oats. We feed equal parts of the above scratch feed and dry mash. For every hundred pounds of the corn chop which is fed, we feed one bushel of oats which have been sprouted, then after they are sprouted it makes over two bushels of feed. We soak the oats from twelve to twenty-four hours, spread them out in trays until they are about one inch in depth, sprinkle them each day to keep them moist and feed them when they are about one week old. Don't use any artificial heat in sprouting and the oats will not mold. If you feed the oats when they are about a week old from the date you started to sprout them, you get the benefit of the oat grain as well as the tender succulent sprouts. These offset the "all corn" scratch feed. We feed some of the dry mash in a moistened state each afternoon. Give all the moist mash the hens will eat in about thirty minutes. Moisten it with water or milk. Feed the dry mash in a hopper or box and keep it before the hens so they may help themselves at any time. Feed about an equal amount of the dry mash and cracked corn and regulate the quantity of cracked corn which you throw into the litter for the hens by the amount of dry mash each pen consumes. The nutritive ratio of this feed is about 1:4.5, if the oats are used as directed. This is about right for laying hens or growing stock. This will reduce the cost of this feed at the above prices of the ingredients so that the cost will not exceed \$2.70 per hundred pounds. If this is used for growing stock, add five pounds of bone meal to each hundred pounds of ground feed.

On the basis of a dozen eggs being produced on five pounds of feed, each dozen eggs cost us about fourteen cents when this ration is used. This leaves twenty-one cents per dozen for labor and profit when eggs are selling at thirty-five cents per dozen. In the face of these figures there is no reason for any poultryman to be discouraged. If you use this ration at the present prices of eggs, you will clear more on your hens than in any previous year because of the increased price of eggs. In the above ration the succulent oat-feed and the wheat products and beef scraps in the mash offset the fattening and heating effect of the "all corn" scratch feed. Corn products are eliminated entirely from the mash, except that the cracked corn is screened and the meal and fine particles of corn are sifted out and put in the mash, otherwise this would be wasted. Keep grit and oyster shell constantly before the fowls. This is cheaper than any ration which we have seen recommended by any government or state experiment station. In some sections you may buy good commercial feed cheaper than you can mix your own.

There is not the least reason for any poultryman to become discouraged with poultry conditions at present. The wise thing to do is to "keep cool, play safe and hold tight."—J. E. QUISENBERRY.

POLAND CHINAS

POLAND CHINAS.

HOLSTEIN CATTLE.

HOLSTEIN CATTLE.



Faulkner's Famous Spotted Polands

The world's greatest pork hog are raised exclusively on HIGHVIEW BREEDING FARMS. The largest registered herd of old, original, big-boned, spotted Polands on EARTH.

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

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

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 Polands 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

DUROC JERSEYS.

Royal Herd Farm Durocs Established in 1899 by Emery Anderson. Boars, March farrow, by Pathfinder, Kansas Cherry Chief, King's Col. Jr. and Proud Chief. A fine lot to select from. Gilts bred for September farrow. Come and see my herd or write your wants. B. R. ANDERSON McPherson, Kansas

JONES SELLS ON APPROVAL February, March and April Durocs, pairs and trios and herds unrelated. First class pigs at reasonable prices. W. W. JONES, CLAY CENTER, KANSAS

LONE TREE DUROC FARM Herd Boar Graduate Prince by Graduate Col. Sows, Ohio Chief, Tatarax, 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.

IMMUNED DUROCS With size and bone. Bred sows and males a specialty. 150 early pigs; pairs and trios, no kin. All immuned. Satisfaction guaranteed. C. G. DITMARS & Co., Turney, Mo.

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. E. E. FRIZELL, Frizell, Pawnee Co., Kansas

AUCTIONEERS.

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

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

BERKSHIRE HOGS.

KING'S BERKSHIRES - Twenty good Berkshire fall boars. One good yearling boar. E. D. KING, Burlington, Kansas.

HAMPSHIRE HOGS

HALCYON HERD HAMPSHIRE HOGS Best breeding, best type. Stock for sale. GEO. W. ELA, Valley Falls, Kansas

POLLED DURHAM CATTLE.

FOR SALE - Two red and white bull calves, 10 months old, sired by Chief, a son of True Sultan. Priced to sell. D. C. VAN NICE - RICHLAND, KANSAS (On Mo. Pac. Ry., 17 miles S. E. of Topeka)

HAMPSHIRE SHEEP.

FIVE EXTRA GOOD HAMPSHIRE RAM LAMBS Priced right if taken in the next two weeks. L. M. SHIVES, ROUTE 1, IUKA, KANSAS

FARM AND HERD NEWS NOTES G. C. Wheeler, Live Stock Editor W. J. Cody, Manager Stock Advertising O. W. Devine, Field Representative Address All Communications to Kansas Farmer, and Not to Individuals Personal mail may have to be held for several days, or be delayed in forwarding, and Kansas Farmer cannot assume any responsibility for mistakes occurring thereby

CLAIM SALE DATES. 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, Effingham, Kansas. Oct. 17 - Walter B. Brown, Perry, Kansas. Oct. 24 - Fred G. Laptad, Lawrence, Kansas.

Red Polled Cattle. Sept. 4 - Milton Pennock, Delphos, Kansas.

Durocs. Oct. 24 - Fred G. Laptad, Lawrence, Kansas.

Registered Jersey Cattle. Aug. 15 - S. S. Smith, Clay Center, Kansas.

Hampshire Hogs. Oct. 12 - Kansas Hampshire Swine Breeders' Association and Halcyon Hampshire Pig Club sale at Valley Falls, Kansas. George W. Ela, secretary and manager.

O. I. C. Hogs. Sept. 4 - Milton Pennock, Delphos, Kansas.

Milton Pennock, of Delphos, Kansas, has announced a public sale of pure-bred Red Polled cattle and O. I. C. hogs to be held September 4. Mr. Pennock will catalog sixteen head of choice Red Polled cattle and fifty head of O. I. C. hogs for this sale.

L. M. Shives, of Iuka, Kansas, is one of the successful sheep breeders in Kansas and owns one of the choice flocks of Hampshires in the state. Mr. Shives has found the Hampshires a very profitable sheep on his farm. A feature of his flock at this time is the fine lot of young stock, including a choice lot of rams.

S. S. Smith, of Clay Center, Kansas, has announced a public sale of registered Jersey cattle to be held at Clay Center, August 15. Mr. Smith owns one of the richly bred, heavy producing herds of Jerseys in Kansas and will catalog a choice offering for this sale.

B. R. Anderson, of McPherson, Kansas, owner of Royal Farm herd of Duroc Jerseys, reports his herd doing well. This year Mr. Anderson saved a large number of spring pigs by such boars as Pathfinder, Kansas Cherry Chief, King's Col. Jr. and Proud Chief. The pigs have all grown out fine and are an extra choice lot. Mr. Anderson is one of the progressive breeders and by careful breeding has succeeded in developing a great herd.

Girod & Robison, of Towanda, Kansas, report a growing demand for high class Holsteins. They have one of the largest herds of pure-bred and high-grade Holsteins in the state. During the past year their sales of foundation stock for new dairy herds have been very heavy and Holsteins from this herd were shipped to many states.

We have just received Volume 54 of the American Berkshire Record. This volume contains 5,000 pedigrees from No. 215001 to 220000. It also contains other information that should be in the hands of every Berkshire breeder or anyone interested in pure-bred Berkshire swine.

John D. Henry, of Lecompton, Kansas, reports his Poland Chinas doing fine. Mr. Henry has built up one of the high class herds in Kansas and this year he has an extra fine lot of big-type pigs that are growing out well. They are by the good boars, Mammoth Orange, King Price Wonder and Big Wonder.

D. J. White, of Clements, Kansas, owner of Edgewood Farm and one of the high-class herds of pure-bred Aberdeen Angus cattle, reports his herd doing well. Edgewood Angus herd is one of the good herds of that breed now assembled. Best blood lines, choice individuals and careful breeding is the plan that is responsible for this choice herd.

W. W. Patterson, a well known banker formerly of Bronson, Kansas, has purchased a very fine farm near Fort Scott, and expects to devote his entire time to building up a herd of pure-bred Jersey cattle that will be second to none in the Southwest. He has been breeding Jerseys for years as a side line, with profitable results, and decided to devote his time entirely to the business. He was one of the heaviest purchasers at the Linscott dispersion sale and secured a large per cent of the richly-bred choice individuals sold in that sale.

PUBLIC SALE SEPTEMBER 4 Fifty registered O. I. C. hogs. Sixteen male and female Red Polled cattle. Six and one-half miles east, one mile north of Delphos, Kansas. MILTON PENNOCK.

HOLSTEIN FRIESIAN FARM, TOWANDA, KANSAS BREEDERS OF PURE-BRED HOLSTEINS We offer special attractions in choice young bulls, ready for service, both from tested and untested dams, at prices within reason. Let us furnish you a bull and improve your herd. IT WILL PAY YOU TO SEE OUR OFFERING of high grade young cows and heifers, all springers, in calf to pure-bred sires, large developed females, good udders, nicely marked and the right dairy type at prices that challenge comparison for Holsteins. A visit to our farm will convince you. Keep us in mind before purchasing. Wire, write or phone us. GIROD & ROBISON - TOWANDA, KANSAS

MAURER'S HOLSTEIN FARM In order to clear our pastures for our grade cows and heifers that will soon arrive for fall trade, we are offering sixty-five head of pure-bred Holsteins, with the choicest of breeding, from calves to mature cows, at bargain prices. Many of our heifers are closely related to the world's champion, Sogis Fayne Johanna, and a lot of them have been bred to our herd sire, Canary Mercedes Sir Wadnah 145386, whose dam produced 26.90 pounds butter and 541.70 pounds milk in seven days, while his sire's dam holds the world's milk and butter record as a ten-year-old, producing 1,300 pounds butter and nearly 30,000 pounds milk in a year. We have some fine bull calves sired by a son of Rag Apple Korndyke 8th and by a son of Pontiac Korndyke, with record dams. Also a few good grade cows and heifers. Do not delay, but write or wire when we can expect you. Farm located a mile west of town on Sixth Avenue. Phone 688. T. R. MAURER & CO - EMPORIA, KANSAS

PECK'S HOLSTEINS 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 and guarantee satisfaction. M. E. PECK & SON, SALINA, KANSAS

HOLSTEINS AND GUERNSEYS High grade cows and heifers, carloads or less. Calves crated and shipped anywhere, price \$20. F. W. WALMER Way Side Stock Farm - Whitewater, Wis.

Breeders' Directory RED POLLED CATTLE. Mahlon Greenmiller, Pomona, Kansas. JERSEY CATTLE. ANGUS CATTLE. D. J. White, Clements, Kan. J. B. Porter & Son, Mayetta, Kan. DORSET HORN SHEEP H. C. LaTourette, Route 2, Oberlin, Kan.

SHORTHORN CATTLE.

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

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

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

Fred Chandler, owner of the famous Chandler Percheron and Belgian farms near Chariton, Iowa, reports a rapidly increasing demand for high class stallions and mares. Mr. Chandler is closely in touch with the draft horse business and thinks there is a good business ahead for draft horse breeders. A feature of his herds at this time is the large number of choice young stallions and mares.

We have received Volume 90 of the American Shorthorn Herd Book. This volume contains 30,000 pedigrees; 9,000 bulls numbered from 448001 to 457000; 21,000 females numbered from 236001 to 257000.

W. B. Dalton, manager of Bisonté Farm, Lawrence, Kansas, reports their Jersey herd doing well. This herd is noted for record breeding and is one of the heavy producing herds of Jerseys in this state. A feature at this time is the number of heavy producing cows and a fine lot of youngsters of record breeding.

H. L. Faulkner, of Jamesport, Missouri, owner of Highview Farms and the famous Highview herds of old original big-boned Spotted Polands, has just returned from a three weeks' trip through Texas and reports that he is working overtime filling orders for Spotted Polands that accumulated during his absence. He is also preparing for his midsummer bred sow sale to be held August 15. He expects to catalog twenty big spotted sows for this sale. All of them will be bred to the famous boars now in service in Highview herds. The lot of sows offered were carefully selected by Mr. Faulkner from his large herds and will have the quality that insures profitable brood sows. He will also catalog thirty head of spring pigs, one of the best lots in the history of Highview sales.

H. E. Anderson, of Clover Valley Holstein Farm, Whitewater, Wisconsin, owner of one of Wisconsin's great herds of Holstein cattle, reports his herd making fine records again this year. This is one of the Wisconsin herds noted for heavy production and a feature at this time is the large number of choice young cows and heifers. These cows and heifers are a uniformly well marked lot. The dams of the entire lot are heavy milking cows. They were sired by bulls of record breeding and are nearly all bred to Sir Skylark De Kol, whose dam was a 29-pound cow and a half sister to the sire of the world's champion cow, Duchess Skylark Ormsby.

A perfect seed bed is the best life insurance policy for wheat. The ground should be plowed early in July, worked down immediately and kept free of weeds and volunteer wheat until planting time.

Double-disking the stubble in July is the best artillery preparation for a big wheat drive.

50 HOLSTEIN HEIFERS We offer for sale fifty of the best high grade Holstein heifers in Wisconsin. All bred to a 29-pound bull whose dam is sister to the sire of the world's champion cow, Duchess Skylark Ormsby. Also a few choice fall cows. CLOVER VALLEY HOLSTEIN FARM Whitewater - Wisconsin GOLDEN BELT HOLSTEIN HERD Herd headed by Sir Korndyke Bess Hello No. 165946, the long distance sire. His dam, grand dam and dam's two sisters average better than 1,200 pounds butter in one year. Young bulls of serviceable age for sale. W. E. BENTLEY, MANHATTAN, KANSAS

Segrist & Stephenson, Holton, Kan. Breeders exclusively of pure-bred prize-winning record-breaking Holsteins. Correspondence solicited.

Butter Bred Holsteins Buy your next bull calf from a herd that won the butter test over all breeds. J. P. MAST - SCRANTON, KANSAS

HOLSTEIN CALVES We offer for sale choice, beautifully-marked heifer or male calves, 15-16ths pure-bred, and all from extra large heavy-milking dams, as follows, crated f.o.b. cars: One to two weeks old, \$15 each; two to three weeks old, \$17 each; five to six weeks old, \$20 each. First check takes them. Write W. C. KENYON & SONS, ELGIN, ILLINOIS

Braeburn Holsteins Bull Calves by Walker Copia Champion, whose dam and sire's dam each held world's records in their day. H. B. COWLES, 608 Kan. Av., Topeka, Kan.

HOLSTEINS Registered and high grades, cows and heifers. The milky strain, service bulls, carloads or less. High grade heifer calves, \$18 each, crated. Write me. I have what you want. RAY C. JUDD - ST. CHARLES, ILL.

High Grade Holstein Calves 12 heifers 15-16 pure bred, 4 to 6 weeks old, beautifully marked, \$20 each. Safe delivery and satisfaction guaranteed. FERNWOOD FARMS, WAUWATOSA, WISCONSIN

Nicely marked high-grade Holstein calves, price reasonable. O. Canuteson, Route 4, Delavan, Wisconsin.

CHESTER WHITE HOGS FOR SALE 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. HARRY W. HAYNES, GRANTVILLE, KAN.

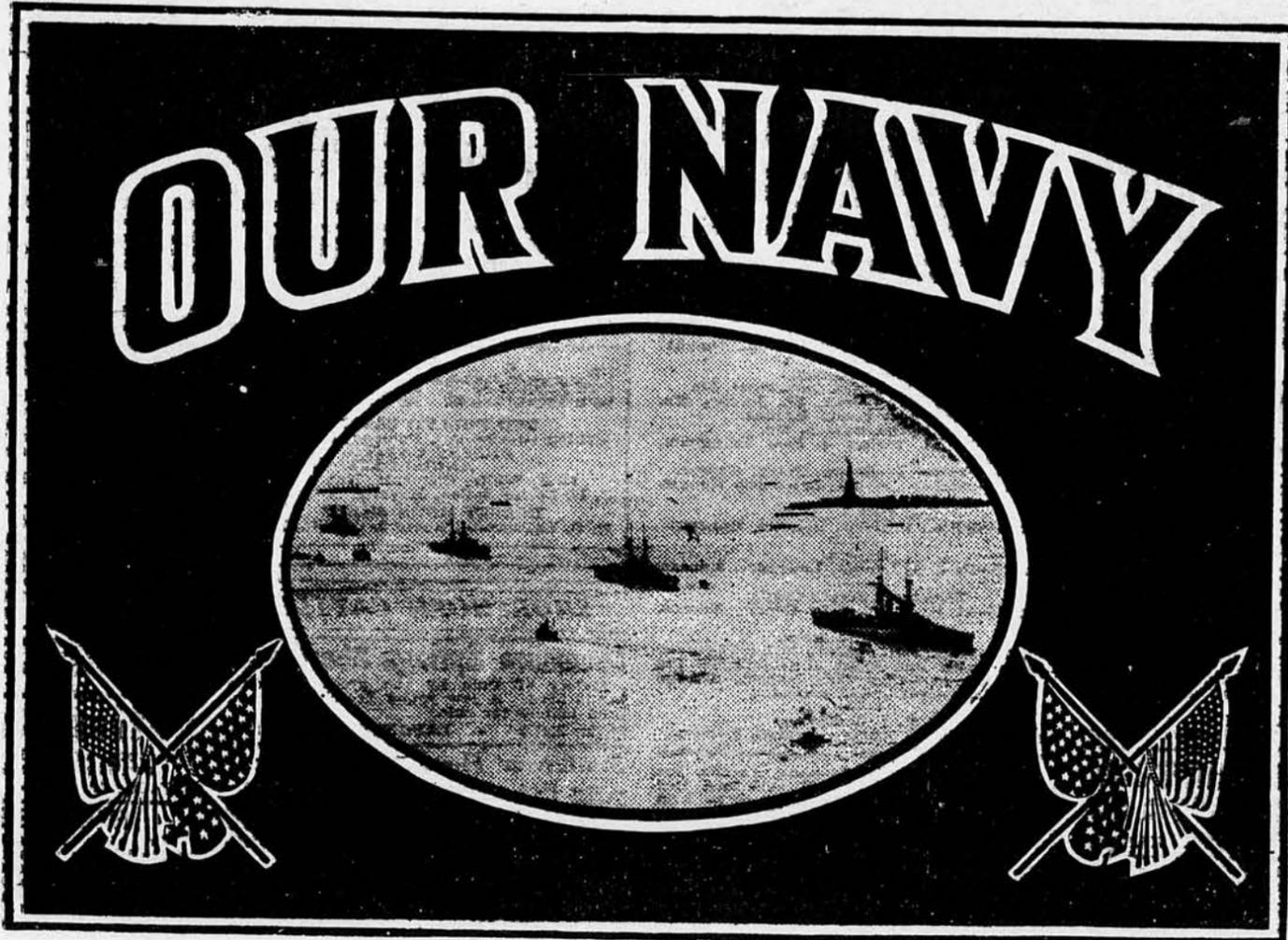
GUERNSEY CATTLE. GUERNSEY BULLS. Buy a grandson of Imp. May Royal, whose dams are granddaughters of Imp. Masher Sequel. One to seven months old. ADAMS FARM, Gashland, Mo., 12 miles from K. C.

HORSES AND MULES. PERCHERONS, BELGIANS, SHIRES. Ten stallions ready for heavy stand; also yearlings and twos. Young fillies, also mares with colt 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.

Choice young Belgian and English Shire Stallions, also mares, Percheron and Coach stallions. Many first prizes. Long time 6% notes. Illinois Horse Co., Good Block, Des Moines, Iowa.

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