

KANSAS FARMER

For the improvement  of the Farm and Home

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LIVE STOCK AND FOOD SUPPLY

Breeding Improved Types of Farm Animals Increases Live Stock Production

IN AN article appearing in the twentieth biennial report of the Kansas State Board of Agriculture, Prof. C. F. Curtis, of the Iowa State College, points out that whatever may be the theories or conclusions concerning the efficiency of a vegetable diet, the fact remains that man is a carnivorous animal and that the average citizen of the United States consumes more meat than do the inhabitants of any other civilized country.

The average per capita meat consumption of the United States, according to the United States Department of Agriculture, amounts to 80 pounds of beef, 7.5 pounds of veal, 6.5 of mutton, and 78 of lard—a total of 172 pounds annually, against 119 for Great Britain, 113 for Germany, and 80 for France. In addition to this we consume annually per capita 17.5 pounds of butter, 3.8 pounds of cheese, 17 pounds of ice cream, 1.5 pounds of oleomargarine, and about 475 pounds of milk.

Professor Curtis thinks that the scientists may be right in their contention that there is greater efficiency and economy in the direct consumption of the grains and cereal products as human food than in their transformation into animal products, but virile manhood seems reluctant to accept their doctrine.

About one-third of the nation's food bill goes for meat, and the meat and dairy products combined amount to more than one-half the total expenditure. This does not take into account the consumption of poultry products and fish, both of which constitute large items, and which show a marked tendency to increase as the cost of other foodstuffs advances.

In the operation of a cafe and cafeteria at the Iowa State College during the past year, where about one thousand meals are served daily and the patronage comes mainly from students who are obliged to live economically, the combined meat and dairy bill amounted to 46 per cent of the entire amount paid for provisions.

The meat and dairy products of domestic animals may not constitute the most economical form of food for man, but they seem to be regarded as indispensable to the highest achievement and the best type of civilization. The meat-eating races are the dominant nations of the world.

There would be difficulty in utilizing as human food many products of the farm, field, and plain, if it were not for the transforming power of the meat and milk-producing animal, to say nothing of the service rendered by the domestic animal in clothing the human race. It is stated in Holy Writ that "all flesh is grass," but if grass could not be converted into flesh it might not serve as a very palatable form of human diet without creating a disproportion of the supply of breakfast foods.

The United States Department of Agriculture estimates that the annual meat bill of the United States is nearly two and a half billion dollars, and the daily milk bill is conservatively estimated at one and a quarter millions per day. The meat-slaughtering industry, not including the small local plants, is claimed to be the largest single industry in the

United States. It is important, therefore, that every improvement in methods of production or utilization of a product that constitutes so large a part of the nation's daily food bill should have careful consideration.

There has been a marked decrease in the number of beef cattle in the United States since 1900, until within the past year, when there was a slight increase. The fact that the beef cattle supply decreased 30 per cent from 1900 to 1913, while the population of the United States increased 25 per cent during the same period, would tend toward higher-priced meat products in the future; and just now an increasingly large proportion of meat products is being exported on account of the demands created by the European war.

Improvement of live stock and the conditions for live stock production have a vital relation to the nation's food supply. The average dairy cow produces only 150 to 160 pounds of butter a year. Many of the best practical herds have records of from 400 to 500 pounds per cow annually, and there are hundreds of cows that by intensive feeding will approximate 1,000 pounds annually, while a few have gone as high as 1,200. Fortunately, the capability of improvement is inherent in all animal life.

Professor Curtis tells how the dairy husbandry section of the Iowa Agricultural Experiment Station has taken native cows from the Ozark hills of Arkansas, representing as near the unregenerate type as it was possible to secure, and in an investigation extending over a series of years has shown that even these cows were capable of producing 163.6 pounds of butterfat the first year under favorable conditions and good feeding. When mated with pure-bred sires of the dairy breeds the heifers increased their production 25.5 per cent over the records of their dams in the first generation. The native cows when bred to native sires produced heifers that, reared under favorable conditions, increased the yield 10 per cent over that of their dams, and in one case the same cow when bred to a pure-bred sire produced a heifer that increased the production 37 per cent in the first genera-

tion. Two of these native cows that have now been under investigation for four years have shown the following increased production from year to year: Second year, 25 per cent; third year, 53 per cent; fourth year, 63 per cent. It is significant and highly encouraging that animals without any improved blood will respond so readily to improved conditions and show such marked increase in yield of food products, and that by improving both environment and blood the increase in production is even much greater.

It has been clearly demonstrated by similar investigations that a corresponding improvement may be made in the meat producing capacity of cattle. Twenty-five years ago John D. Gillette, who was recognized as the most successful beef producer of his time, gave figures showing that it was profitable to produce a steer on an Illinois farm, weighing 2,200 pounds at thirty-six months of age and selling at seven cents a pound on foot. The same method of production on the same farm today would be so unprofitable as to be fatal to the meat-producing industry.

Under existing conditions, on similar but higher priced land and with higher priced feeds, steers of improved breeding must be finished for market weighing 800 to 1,200 pounds at from twelve to twenty months of age, and sold at from eight to ten cents a pound in order to be produced at a profit. Two hundred head of steers of this type were produced recently on an Iowa farm and marketed at thirteen months of age at an average weight of 845 pounds at a cost of \$7.03 per hundred pounds, while to produce beef of the same quality under the same conditions from steers a year older, weighing 1,400 pounds per head, would increase the cost of beef to nine to ten cents per pound on foot at the farm. The latter method is most commonly pursued. Improvement must come in the use of better-bred stock that may be finished for market at the earlier age and at the lower cost of production.

It is a well-established principle that digestion is more complete and the conversion of feeds into meat is more effi-

cient in the younger than in the mature animal. It is only in sections where grazing is abundant and cheap that the conditions will warrant the longer feeding periods which produce the mature and heavyweight animals. Practical maturity may be obtained under favorable conditions in one-third the time at one-third less cost, and a finished product that is altogether more desirable and less wasteful for the consumer. In attaining this improvement the farmer must make use of improved breeding and feeding in the same manner as has been pointed out in increasing dairy production.

Improvement in live stock, and thereby the increase of live stock, also contributes to increased food supply in a marked degree in an indirect manner. The grain yields of ten of the best live stock farms in Iowa were compared with ten of the best grain farms in the same locality, extending over a period of five years. The stock farms showed an increase of fourteen bushels of corn per acre, seven bushels of oats per acre and one ton of hay, which was equivalent to a 36 per cent increase of corn yield, 21 per cent of oats and 83 per cent of hay. These results are confirmed in a larger way by the returns from stock and grain farms reported by the 1910 United States census.

More Milking in Lyon County

The interest in dairying continues to increase in Lyon County. As the result of a circular letter sent out to the different banks of the county, the Miller Bank in the northern part of the county offered to finance any farmer needing money to buy good dairy cows. Nearly a carload of dairy cattle have been spoken for as a result of this offer. F. C. Newman, of the Citizens National Bank of Emporia, has already been instrumental in bringing in several carloads of dairy cows and heifers. Most of this first shipment was taken by boys and girls who are members of the Kansas Farmer Dairy Club. Mr. Newman is urging all the banks of the county to consider the importance of promoting more dairying on the farms of their customers.

One of the big milk distributing companies of Kansas City, Missouri, has recently located two milk stations in the county, one at Olpe and one at Emporia. As this interest in dairying develops it is important that those taking up the milking of cows perfect and maintain a good, live organization among themselves. Such an organization is necessary to help in educating the beginners in dairying to a better understanding of the principles of profitable dairy production. It also can become an important factor in educating consumers and the public generally in the value of dairy products and the cost of producing them and getting them on the market.

Farmers of Cloud County are making up orders for a carload of the new Kan-red wheat to be used for seed in that county. Karl Knaus, the county agent, reports that almost every farmer he meets wants ten to twenty-five bushels of this wheat to plant in order to produce seed for next year.



THESE PURE-BRED CALVES ARE CLEANING UP A FEED OF SILAGE.—GOOD FEEDING AND IMPROVED BREEDING GO TOGETHER



A Sermon Picture

A SHORT time before the above picture was taken, there was a \$5,500 barn between the two silos. It burned down. The silos were unharmed. Ask E. H. Salisbury, Kirksville, Mo., who has since erected a new barn, what he thinks of the silos.

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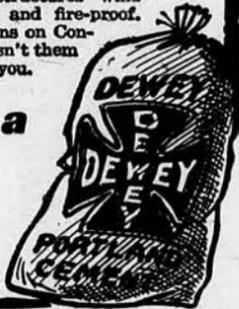
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FARM POWER

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

SUBSCRIBER J. F. S., of Shawnee County, recently asked for plans for a garage. He wants to build a smoke house also, and suggested making the smoke house a part of the garage by partitioning off one end. We advised against this, principally because of the fire risk. A smoke house need not be a large building, as it is easier and safer to have it built without any connection with any other structure.

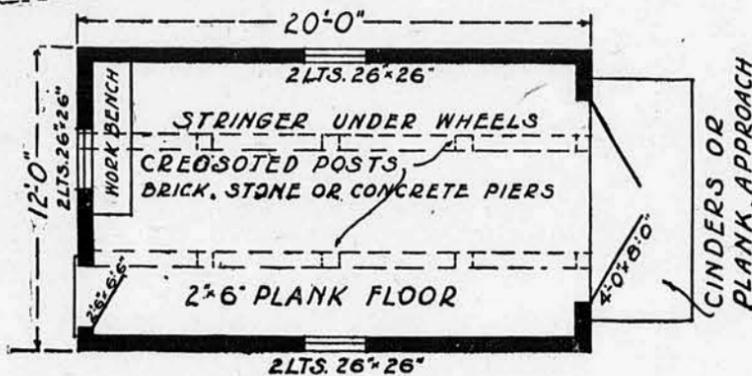
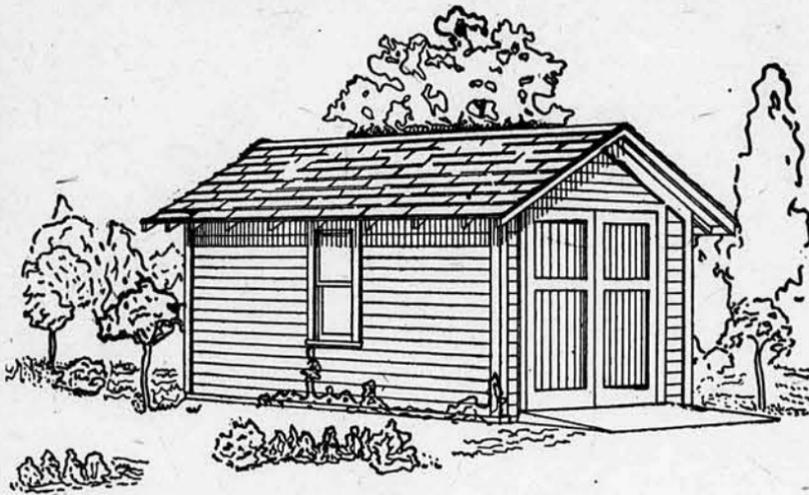
There are so many of our readers now owning automobiles or planning to buy them that we herewith give the plans of a garage which can be economically built on any farm. There are many types of garages from the ready-made metal structures all ready to set up to the more expensive buildings of concrete or tile. Some of these other structures may appeal to those planning to build garages, but the one described is a very satisfactory type. Any lumber yard can from the plans figure the bill of material.

This garage is large enough to house practically any car made. It can be shortened, but it is best to build it of the length given. There is seldom too much room in a garage, and a work bench at one end is almost necessary. In order to make this building warmer it might be sheathed inside and out and a ceiling overhead could be added. Durable wood or creosoted posts could be used for the foundation, or concrete or brick piers, although these will cost perhaps a little more than well creosoted posts. The floor is plenty strong to support the car. The stringers, which consist of two 2x6's spiked together, are

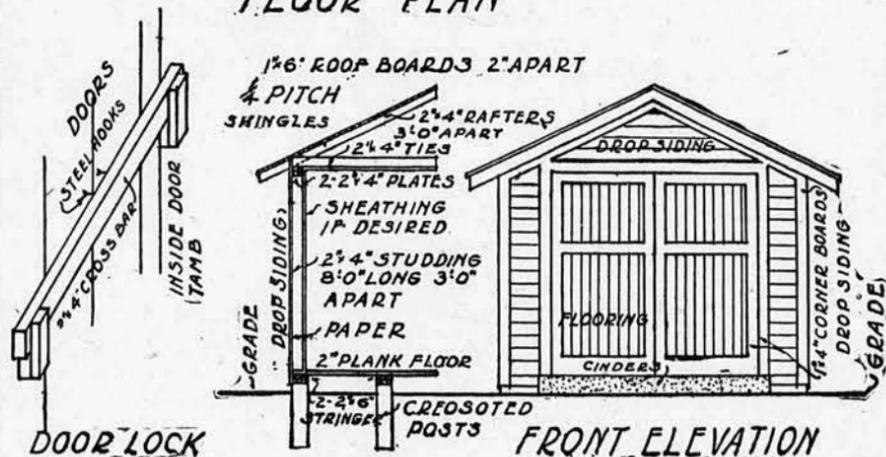
placed directly under the wheels of the car as it stands in the garage. No other floor supports are necessary. The rafters and studs are spaced three feet apart. The floor is made of 2x6 planks, dressed on the upper side. All of the dimension material and siding should be of No. 1 grade, but the roof boards may be a No. 2 grade. If shingles are used, they should be of the best quality and should always be nailed with zinc-coated shingle nails. Ordinary wire nails quickly rust out. The large doors are made of dressed and matched lumber, either four or six inches wide as preferred.

The structure should be thoroughly painted inside and out with a good grade of paint, and it is a good plan to secure a fire-resisting paint. The garage will be lighter if the inside paint is white or light gray. A cement enamel paint can be used on the plank floor so the oil and grease that may be dropped from the car can be easily wiped up. It is always a good plan to place a good, strong lock on the garage, as thieves go where the picking is easiest.

A writer in Power Farming states that in reading over an instruction book for a 10-20 gas tractor of a popular make, he finds this piece of advice: "Don't forget that while your tractor is made of iron and steel that it will appreciate the care given it in returning to you its appreciation in service." That would be a cracking good motto to paint on a nice piece of thin iron and hang on every gas tractor where the wind would wave it around and call the operator's attention to it.



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EXEMPTION CLAIMS OF DAIRYMEN

All farm labor is scarce in Kansas, but no other kind of farm labor is more difficult to obtain than that necessary for carrying on dairy work. Many farm hands cannot or will not milk cows and perform other dairy work. The labor problem is the most serious one with which they have to contend, said dairymen from all parts of the state who attended the meeting of the Kansas State Dairy Association held in Hutchinson August 16.

In discussing the labor question as affected by the operation of the selective draft, the dairymen stood on the proposition set for by President Wilson that the whole nation is being mobilized for war, and not simply an army. District exemption boards all over the country have been appointed to act for the Government in following out this principle in selecting our national army. Acting in this high capacity, these boards are not mere recruiting officers for the army. They have to face the question of mobilizing the whole country for war in the most effective manner possible in practically every case coming before them for decision.

In order that the authorities at Washington may have the facts relative to dairy labor in Kansas, the Kansas State Dairy Association went on record in a definite statement which, while voicing the fullest loyalty to the cause, pointed out very clearly that the dairy production of the state would necessarily be much reduced if dairy labor is drawn upon heavily in selecting men for army service. This statement was placed in the hands of ex-Governor Stubbs, who goes to Washington to represent the Kansas Live Stock Association and the State Dairy Association in emphasizing the need for protecting these great industries in the operation of the selective draft system for raising an army.

The National Dairy Council was also furnished with a copy of the statement for presentation to the Food Administrator.

FOOD CONTROL LAW

The food control law signed by President Wilson August 10 grants to our chief executive for the period of the war most unusual powers. Already the Food Administrator has begun his task of stabilizing prices of food products. In this crisis we are all denouncing the food speculator and it is to be hoped that the law will be so administered as to absolutely prevent unlawful speculation in the necessities of life. It is this feature of food distribution that has stirred with righteous indignation the producers of grain and other farm products.

In his first statement to the public, Herbert Hoover, who has been appointed food administrator, says that he hopes "First, so to guide the trade in the fundamental food commodities as to eliminate vicious speculation, extortion, and wasteful prices, and to stabilize prices in the essential staples; second, to guard our exports so that against the world shortage we retain sufficient supplies for our own people and to cooperate with the allies to prevent inflation of prices; and, third, to so stimulate the saving of food that we may increase exports to our allies to a point which will enable them to provision their armies and to feed their people during the coming winter."

The Government had already planned to take over the distribution of wheat through the section of the law licensing dealers, and in addition it is proposed to establish a system of actual Government buying and distribution. The machinery for putting into operation the Government purchase and distribution of wheat has already been prepared. Twelve men, six representing consumers and six producers, have been appointed as a price-fixing board. President H. J. Waters of the Kansas Agricultural College is a member of this committee. Already the announcement of these Government reg-

ulations has resulted in a hundred prominent grain dealers who recently met in Washington passing resolutions which recognize the fact that they are out of business for the period of the war.

It must not be understood that the Government is organizing to buy the surplus of wheat, for there is no surplus. This year's crop is estimated to be only twenty-five million bushels more than is needed in this country on the basis of normal consumption. Europe is expecting to get from one hundred to two hundred million bushels from the United States. Under these conditions it is apparent that an open market would tend to run wheat up to high prices. It is here that the interest of the producer appears. We do not believe that growers of wheat will object to selling their crop at prices which will return a reasonable profit if they can be sure it will go to the consumer with only legitimate handling and milling expenses added.

The big problem of the Food Administration is to make a short wheat crop go as far as possible and at the same time prevent undue hardship from abnormal prices and absolutely cut out speculation. It is only through greater economy in consumption that we can hope to increase our surplus for export. High-priced wheat compels economy in consumption and this point the price-fixing commission of which President Waters is a member can be expected to consider in establishing prices. President Waters championed the two dollar guaranteed price to the producer for the 1918 wheat crop, and his influence had no small part in getting it set at that figure, even though much pressure was brought to bear to make it lower. Farmers of Kansas have the fullest confidence in the stand that President Waters will take on this most important commission to which he has been appointed. We will expect him to insist on a price high enough to insure the wheat growers of Kansas fair and reasonable profit and high enough to enforce the rigid economy necessary on the part of the consumer if we are to increase our surplus for export.

KEEP THE GOOD COWS

The nations of Europe have already been compelled to slaughter thirty-three million head of stock cattle, according to the first statement issued by Food Administrator Hoover. Only recently the little country of Holland has ordered the slaughter of one hundred thousand cows, and these are undoubtedly milk cows. The need of meat and the impossibility of getting feed is responsible for the sacrifice of these cattle. P. W. Enns, a former president of the Kansas State Dairy Association, reported at the recent meeting at Hutchinson that relatives of his in Russia had written him that good high-grade cows were bringing 600 to 800 rubles, which according to rates of exchange before the war would be \$300 to \$400.

From all the information available, it is evident Europe will be coming to this country for foundation stock as soon as the war is over. The conditions in Europe are such that dairying is the form of live stock farming most extensively practiced. In economy of production on high-priced land, meat animals cannot compete with the dairy cow. It has been estimated that for several years following peace, Europe will take twenty-two million cattle annually from this country if they can get them. The lesson to Kansas dairymen is to stay in the business of breeding and developing good dairy cattle. If feed conditions are such that some stock must be sold, know the individuals of the herd so well that the slackers among the cows can be culled out and the good cows kept. This is a time to start cow testing associations and herd records. The world will need dairy stock, but European buyers will want only foundation and in all probability only pure-bred animals. We have for years been importing founda-

tion stock from Europe, but following the war we must be prepared to return high-class animals in order to enable them to rebuild their depleted herds.

FALL PASTURE FOR COWS

Dairymen who were present at the meeting of the State Dairy Association at Hutchinson last week talked much of economy in milk production. All who spoke emphasized the importance of using pasture this fall to the fullest extent possible. Prof. O. E. Reed of the Agricultural College said they already had a field of rye seeded which would save a lot of grain in feeding the college herd. Conditions have not been more favorable in years for getting fall pasture. Every man in Eastern Kansas who has milk cows to feed this fall should seed some rye for pasture. Even though there is a silo on the farm, planning for fall pasture is a good business proposition. Where is the man who could not have fed silage to advantage during the past summer? If the cows can be kept on green feed until late in the fall, it may not be necessary to open the silo perhaps until December or later. We know of a dairyman in the wheat belt having two silos who hopes to be able to carry one over until next summer by using wheat pasture this fall.

Cows having plenty of green feed will keep up a good flow of milk and very little grain will be needed. The emphasis placed on the use of rye and wheat pasture as a measure of economy in milk production this fall and winter was one of the valuable lessons of the recent meeting. We regret that many more of our readers who milk cows could not have been present. The men who took part in the discussions and gave their experiences are successful dairymen, and we hope those unable to be present will profit by the suggestion coming from these practical men.

PASTURE FOR HOGS

Every good hog man knows that hogs must have some grain, but with present conditions the forehanded man will take advantage of the plentiful supply of moisture in the soil and will grow fall forage so his hogs will not lack for green feed. Rye and rape are ideal forage crops for fall planting. Those who have not grown these crops under the present favorable conditions, can hardly realize what a wealth of feed can be produced by a patch of rye or rape or rye and rape sown together. The richer the land, the larger the growth. Both are cool weather plants. Rye can be pastured all fall and most of the winter and will be ready again early in the spring.

Dwarf Essex rape is a forage much used by our most successful hog men. It will make rapid growth and will produce feed up to the time of killing frosts. Be sure to get the right variety. If there is time, test the seed for germination. It can be done in three or four days. Sow on a fine seed bed and cover lightly with a harrow or brush. Both rye and rape should be put in at once. If it be sown together, prepare the seed bed and drill in the rye and then sow two or three pounds of the Dwarf Essex rape to the acre and cover as suggested.

Hogs are higher than they have ever been and likely to remain high for some months. The present indications are that corn will be a better crop than was expected. The ground has been put in ideal condition to grow green feed in abundance. Many should be able to hold hogs and make some profit from them even though feed is high in price.

Increased yields of eight bushels of wheat to the acre from one field and ten bushels from another resulted from early plowing on a Harvey County farm as compared with the yield from a late-plowed field. Much early plowing has been done in that section this year.

INCREASES OF PRODUCTION COST

If the wheat growers of Kansas raise a big crop next year and sell it for two dollars a bushel or better, they can be sure of a good profit, but there is another side to the story that people generally are apt to overlook and it applies to other agricultural products as well as to wheat. It was brought out in a debate in Congress on the Food Bill that the cost of many things farmers must buy has advanced tremendously. Before the war steel sold for thirty dollars a ton and now it is one hundred thirty dollars a ton. All farm equipment into which steel enters has advanced accordingly.

Coal has advanced from 100 to 250 per cent, wire has advanced 100 per cent, wagons 40 per cent, prepared feeds 100 per cent, tankage 100 per cent, and fertilizers 600 per cent. Binding twine has advanced from eight cents a pound to eighteen, and plow shovels that cost \$2.50 before the war now cost \$7. Cultivators that sold for \$28 before the war now sell at from \$50 to \$55. Labor and seed of all kinds have likewise made big advances in cost.

These increased costs must be met. Farmers who have been careless in the care of machinery or who have overlooked the many little economies which they might easily have followed, are now keenly alive to the situation and can be depended upon to do their part in keeping down production costs, but there is no getting around the fact that farm products must be high in price to meet these many increases in production costs.

EMERGENCY AGENTS

Emergency demonstration agents are to be employed in many counties of Kansas following the passage of the law providing funds for such work. Both men and women will take up this work. Cowley County has had a man and a woman employed in the emergency work for some weeks and Hodgeman County also has had an emergency agent for some time. Fifteen counties have organized to take advantage of the opportunity to secure help of this kind.

It is not necessary to organize a county farm bureau as in employing the county agricultural agents, of which there are now twenty in the state. These emergency helpers are employed by the county defense council and work under their direction. They have no police or regulatory powers, the service they render being that of helping the defense council in carrying out the various plans for mobilizing more fully the local resources.

To secure one of these emergency agents, the county commissioners must appropriate \$800 for the initial expenses, and the Federal Government will provide \$1,600 a year. Harry J. Umberger, of the extension division of the Agricultural College, is chairman of the state committee having general supervision over the work of these emergency agents.

We would urge Kansas dairymen who must reduce their herds to look for a market on farms in other sections of the state before sending the cattle to market centers. Even before the abundant rains improved the situation there were communities in the state where plans were being made to go out and bring in dairy cattle. The man who must sell high class dairy animals will find it good business to seek this home market. It is also an act of patriotism to save every dairy animal possible to the industry.

The United States Government has notified manufacturers and jobbers to conserve the condensed milk supply. It is stated that the Government will need 350,000 cases of condensed milk a day for the use of the army and navy. The embargo which was placed on tin has been raised so condenseries will not be prevented from securing the necessary cans.

FARMERS' ELEVATOR HISTORY

Annual Saving of Fifty Million Dollars From Farmers' Elevators



AFTER WHEAT IS GROWN IT MUST BE MARKETED—ELEVATORS ARE IMPORTANT FACTORS IN HANDLING CROP AS IT MOVES TO MARKET

THE enormous amount of wheat marketed in the wheat-growing sections in the early development of the West brought elevators to almost every station. These elevators consisted of three kinds: First, the "independent elevators," owned by a single individual, who bought at some local station direct from the farmer; second, "line elevators," owned by a company, who operated a number of elevators throughout the wheat belt, usually along a certain railroad; and third, the "farmers' elevators," owned by a corporation whose stockholders were chiefly farmers. Such a corporation, as a rule, confined its business to the community where its stockholders lived and depended upon the business of those interested.

In the newly settled country, the independent elevator appeared first, later the line elevator, and more recently the farmers' elevator.

NEED FOR FARMERS' ELEVATORS

Before the development of the farmers' elevator, a definite antagonism had arisen between the farmer and grain buyers. This was due to the large line companies entering into agreements and so monopolizing the grain buying business in a large degree, only hindered by the independent buyers. As a result of this, the prices paid for grain were often depressed. Farmers complained of "short weights." Dishonest dealings on the part of elevators were frequent. The situation grew from bad to worse until the farmers were in reality forced to establish elevators of their own.

In 1884 there was a number of such farmers' elevators established and operated by the farmers throughout the entire wheat belt. Within a few years practically all of these failed, due to mismanagement and other difficulties. With their failure, the entire field was then left open to the independent buyer. Competition among these buyers was naturally keen, and in good crop years track buyers, or "scoopers," appeared in numbers at local stations. These track buyers would bid on the farmers' wheat and load it direct into cars. The farmer, sometimes even selling at auction sale on the street, always sold to the highest bidder. Due to the keen competition many of the grain dealers went bankrupt. Leaky cars and dishonesty on the part of the weighmasters helped to increase their chance of failure. The result was that state associations of independent grain dealers were organized with the purpose of checking such dishonest dealings.

The local elevator companies desired to eliminate the "scooper" because he had nothing invested, paid no taxes, and offered exceptionally keen competition.

The grain dealers' association made up of these independent dealers in the further assistance of their members, asked the commission men in the terminal markets to refuse to handle grain from men who did not own elevators. They also passed a resolution prohibiting members of the association to sell through commission men who handled the business of the local track buyer. Fearing their own business the commission men refused consignments from track buyers. To prohibit the track buyers dealing with the mills, the association made arrangements with the railroad companies so that track buying was almost eliminated.

After eliminating the track buyer, the

association passed rules among themselves, allowing each member a small income over the interest on investment.

About 1888 the large grain syndicates, backed by large capital, appeared. These usually operated along a certain railroad line and oftentimes the largest stockholders in the company would be large railroad men. These large syndicates eventually forced the independent buyer out of business entirely. They often owned large warehouses at the terminal markets and through their monopoly they were able, in time, to control the price as well as the grade of all grain coming on the market.

FARMERS ORGANIZE AGAINST SYNDICATE

About all that was left for the farmers to do was to organize against the syndicate and buy their own grain. But because so many farmers were still living who had seen failure in the farmers' elevators in their early days, it was a hard task to get the young farmer interested.

After a few farmers' elevators were built and had started in business, it was easy for the large syndicate to pay a little more than the farmers' elevator could pay and still make a profit, due to the fact that they enjoyed a lower railroad rate. Again the line elevators would not feel seriously embarrassed over the loss that would ruin a farmers' elevator company. Furthermore, the line elevators' loss was only temporary, and at points where there were no farmers' elevators they would realize a profit of several cents more per bushel. As a result of the farmers' elevator not being able to compete with the line elevator price, first one and then another farmer would break away and go back to the line elevator. After so long a time there would be only a few farmers left. These few could not afford to bear the burden of loss, and failure resulted, thus leaving the entire field to the competitor.

The price paid for grain would soon fall and the syndicate would in a short time reimburse itself for its loss during its campaign against the farmers' cooperative elevator.

The results were that the farmer was not receiving any better price for his grain, was in debt due to loss in the campaign against the syndicate, and had a worthless elevator on his hands. The farmer considered the whole affair a losing proposition and charged the account up to experience.

The farmers also had great difficulty in securing sites for their elevators. The appeal to the railroad commission by the farmers was overruled, on the grounds that there were already too many elevators at certain points.

As a result there were few farmers' elevators in Iowa and Illinois from 1890 to 1900, and none in the other grain-growing states.

PENALTY CLAUSE SAVES THE DAY

The first successful farmers' elevator in the United States was built and operated by a group of farmers around Cerro Gordon County, Iowa, in 1890. The success of this elevator in its campaign against the large syndicate was due to a clause in the constitution which had not appeared in the constitution of any of the other farmers' elevators. It was known as the "penalty clause." It merely stated that all farmers belonging to the farmers' elevator company had to

pay into the company one-half cent per bushel of grain sold whether they sold to the farmers' elevator or elsewhere. This represented the cost of handling the grain, and enabled the company to stay in business, although the syndicate paid more than the wheat was worth in the terminal market.

When the line elevator would bid so high as to incur a loss which prevented the farmers' elevator from securing any grain, the farmers would weigh the grain at the farmers' elevator and sell to the syndicate, paying the one-half cent fine to their own elevator. In this way the income of the farmers' elevator remained the same with a slight reduction in expenses. After trying every method possible, the syndicate was forced to give up in despair.

A quotation from an observer is as follows: "There in Rockwell, a little village of less than five hundred souls, was waged one of the fiercest commercial battles ever fought on American soil. Every trick of trade known to the modern political jackal and commercial bandit was tried and failed, and a final and complete victory won by the farmers of Cerro."

ATTEMPTS TO CHECK MOVEMENT

After about twenty-four companies had been formed in Iowa and Illinois, the syndicate attempted to check the movement. They circulated literature among the business men of the country stating that the farmers were going to start stores, lumber yards and other commercial enterprises and ultimately ruin their business unless the growth of elevators was checked. They also declared they would start stores and sell at cost if the merchants encouraged farmers' elevators. They published false reports about the financial condition of the farmers' companies, which had some effect, but not to a great degree.

About 1901-2 the syndicate decided to boycott the farmers at the terminal markets. This was the most successful ruse of all and it looked like the farmers' elevator was again doomed. At one time there were only two commission firms who would handle farmers' consignments.

The opposition put forth by the syndicates advertised and hastened the movement of farmers' elevators. The boycotted commission companies also felt the dealings of the large syndicates and, having a limited area, decided to take over the farmers' business, which offered a larger field.

The next step of the farmers' elevator company was to merge into a state organization. Illinois was the first to take this step in 1903. Iowa followed in 1904.

The Iowa Independent Grain Dealers' Association had a representative at this meeting who misrepresented the meeting in published statements.

The commission companies that had had their business affected by the syndicate came to the assistance of the farmers and helped them in organizing, which was successful both to the farmers and commission men. One commission company carried on a campaign which cost them \$20,000, organizing 175 farmers' elevators.

By 1905 the movement in Illinois had grown to 175 elevators which demanded recognition in the terminal markets. The movement in Iowa was fully as strong.

The line elevators at this time saw their destruction, but decided to make one more attack on the farmers by attacking the "penalty clause" which they all agreed was the foundation of the whole movement.

They attacked this point by publishing that it was "unfair," "unjust" and "un-American." They also claimed the clause was monopolistic in character and in direct opposition to the Stillman anti-trust grain law. This was overruled by Attorney General H. B. Byers, of Iowa, in a suit in which the syndicate alleged that the penalty clause was in restraint of trade and against public policy.

When all efforts had failed, the so-called "grain dealers" made an effort to secure the confidence of the farmers' elevators which did not operate under the penalty clause, and to induce them to join them in their work against other farmers' elevators operating under the penalty clause. In Iowa, with all of their effort, they were able to secure but one.

A striking example of the farmers' elevator operating under the penalty clause is brought out by the farmers near Solomon, Kansas.

Solomon has three railroads, which had not consolidated at this time. For two years the syndicates had kept the price of wheat at Solomon fourteen cents below the market price at Kansas City. Ordinarily the shipping charges amounted to ten cents. After attempting to get a bill through Congress, which would control the syndicates, the farmers organized their co-operative elevator association, introducing a penalty clause of one cent per bushel.

From the time the elevator opened it received ninety per cent of the wheat marketed at Solomon. One of the syndicates immediately opened fight by paying two cents per bushel more than the farmers' elevator could pay without a loss. The farmers weighed the wheat at their own elevator and sent it over to the syndicate to be sold. The farmer received one cent per bushel over the market price at that point, after paying his own elevator the one cent penalty. In less than three weeks the syndicate gave up the fight, locked its doors and withdrew its agent.

Another scheme was tried by blocking cars on the railroad on whose right-of-way the farmers' elevator was located. The farmers immediately began hauling their wheat over to the other road where they could get cars. An investigation was made in a short time by the railroad company on whose right-of-way they were located, and the results were that they got all the cars they needed.

All the leading grain states have farmers' elevators, except Wisconsin and Indiana. The numbers in the different states in 1913 are as follows: Illinois, 300; Iowa, 347; Minnesota, 307; North Dakota, 350; South Dakota, 220; Nebraska, 200; Kansas, 32.

The most striking result of the farmers' elevators is that prices paid for grain have been invariably higher at a given point after the establishment of a farmers' elevator.

The farmers of Nebraska saved, through their elevators, \$2,380,868 in one year, and the few states of the Central West where farmers' elevators have been established, fifty million dollars would be a conservative estimate of the annual savings of the farmers' elevators.

By G. C. SALISBURY

YOUNG MAN'S OPPORTUNITY

On High-Priced Land Must Practice the Most Modern Agricultural Methods

By W. M. JARDINE, Director Kansas Experiment Station

DURING the past fifteen years the farm lands of Kansas have advanced more than 100 per cent in value, while during the same period records show little if any increase in acre yield. Under the system of farming practiced during the past ten years and still in use on the majority of farms, it is impossible for a young man to buy a farm on borrowed capital at 6 to 8 per cent interest and pay for the land from the proceeds of the crop.

INCREASE IN LAND VALUES

While in the days gone by our fathers and grandfathers probably made money in extensive farming of the virgin soils which they secured at very little cost, conditions have changed. The same land today brings from \$60 to \$150 an acre, and if handled in the old-fashioned way seldom can be made to produce yields that will return a profit on the investment, to say nothing of providing a reasonable salary for its owner.

It is not very likely that many of our farmers who are past the prime of life—and it is these men who own the majority of Kansas farms—will change their methods now. A good many of them are retiring to the city and turning the management of their places over to tenants. According to the best information we have, some 36 per cent of our farms are being operated by tenants. While this is the trend of agricultural conditions, we continue to produce in Kansas large numbers of young men on whose shoulders rests the hope of Kansas agriculture. The majority of these young men, however, cannot become owners of farms in this state except through inheritance, unless they put more intelligence into the business of farming than it is now receiving, because it is practically impossible for crops under the present system of farming to furnish money to pay 7 or 8 per cent interest on \$150 an acre land and leave anything to liquidate the principal.

Wheat growing has been and will probably always continue to be one of the chief industries of Kansas. Eight to nine million acres is a large area to plant to one crop every year, but this is what the farmers of Kansas are doing in the case of wheat. We are extensive rather than intensive wheat farmers; that is to say, we operate large areas with big machinery and without much detailed attention. We do not spend much time in figuring out suitable rotations to employ, how to build up the humus of the soil, and how to maintain soil fertility, all of which are essential in intensive farming. The extensiveness of our farming methods is emphasized by our low average acre yield.

In Kansas the cost of producing wheat can be reduced by readjusting the farming business through the production of a diversity of crops in rotation and the growing of live stock on the farm, thus allowing a better distribution of labor, the feeding of by-products, and the upkeep of the fertility of the soil.

While the average farmer today is operating his farm in much the same fashion followed twenty years ago, except that he is employing bigger machinery and is working less hard—which is a very good thing—he does not need to be particularly concerned about increased yields, because he owns his farm and it cost him little. If he secures 3 or 4 per cent interest on his capital he has sufficient to care for himself and family comfortably. It is not for the welfare of this man that I am concerned. It is the young man, the prospective farmer, the farmer of the future, for whom I am concerned and whom I want to reach. Some day, and not in the far distant future, our boys will be the farmers of this state—at least they ought to be and will be if it is made half possible for them to be—and I want to try to show them that there is a way which if followed will enable them to become owners of land even at its present high value.

BETTER YIELDING VARIETIES

In every county of the state it is possible to point out progressive farmers, young and old, who are making money on high-priced land by employing modern business methods in their farming operations together with scientific farm practices developed by our state experi-



SCATTERING LIME ON A FARM IN ALLEN COUNTY.—AN ABUNDANCE OF LIME IN THE SOIL IS ESSENTIAL TO THE SUCCESSFUL PRODUCTION OF ALFALFA, SWEET CLOVER, OR COMMON RED CLOVER

ment stations at Manhattan, Hays, Colby, Garden City, Dodge City, and Tribune. For the past twenty-five years we have been experimenting at one or more of these experiment stations with all kinds of crops brought from every section of the world, to determine those best suited to our conditions of soil and climate. Not only do the conditions of Kansas affecting the growing of crops differ from those of other states, but they also vary widely in different parts of the state. As a result of our work, we have almost reached the point where we can say positively what crops are best suited to grow in every county of the state. It has been through tests and experiments at these stations that our hard red winter wheats have been developed and commercialized and the varieties of wheat now grown in Kansas are from pure seed of improved varieties first distributed by the experiment stations.

We have reached the time when further increase in the yield of wheat must come through the planting of better varieties and using improved planting methods. It is right here that we believe we can help the young farmers. At the Manhattan experiment station during the last six years we have developed new varieties of wheat that are now yielding and have yielded from the first year's test, from two to five bushels an acre more than the best wheat the best farmers in the state are now growing.

If the yield of the wheat crop of the state can be so increased, the same can be done with corn, with the sorghums, and with alfalfa, and the station will develop this work as rapidly as it is possible to find the time, the help, and the money to carry on expensive investigations.

In their growth and development, plants are governed by the same funda-

mental laws as are animals. The same methods which are employed in improving live stock, and which are familiar to all of us, must be used with a breed of wheat, oats, barley, or any other crop. A man who owns a herd of pure-bred Shorthorn cattle knows well that even though their blood be pure, no two of his animals are alike in every respect, and that if he maintains the high standard of his herd, to say nothing about improving it, each year he must select out for his future seed stock the best individuals.

The same is true as to a strain of wheat. If, as I said, we have the best wheat obtainable in the world in our Turkey and Kharkof red winter wheats, the next step is to see if we cannot find plants among our home seed that are superior to others and from these plants increase the seed and develop a new higher yielding strain. The purest field of wheat in Kansas is composed of individual plants no two of which are alike and it is the problem of the plant breeder to seek the highest yielding plants and propagate them and keep them pure until the seed can be increased sufficiently to put it into the hands of farmers. This is an expensive, tedious, exacting job and one which can be conducted only by experts with the financial support of the state and federal governments.

EXPERIMENTS TAKE MUCH TIME

This is one of the lines of work in progress at our experiment stations. It requires seven or eight years to develop a new breed of wheat. This length of time is required because it is necessary to begin with a single plant—usually the most promising looking heads are chosen. The seed from each of these heads is planted in a single row. The performance of each plant is carefully noted and records are kept on the various characters of the plants, such as hardness, stiffness of straw—to see if



THE three young men beginning on the left are graduates of the Kansas State Agricultural College. They are seeking to take advantage of the opportunities open to young men of special training along agricultural lines. D. A. Robbins, since graduation, has been farming near Colony. G. H. Bunnell is on a farm near Iola. F. J. Robbins is county agricultural agent of Franklin County. They are here shown studying the results of a demonstration in growing alfalfa on upland soil where this crop has not heretofore been successfully grown. From the appearance of the crop, the problem has been solved on this farm. The young man trained in the sciences and principles underlying the practice of agriculture is able to meet and overcome many difficulties which the untrained man finds insurmountable.

the variety will stand up and not lodge—resistance to disease, earliness of maturity, and so on, as well as on yield. At the end of each growing season the seed from the best yielding rows is saved and kept pure, and milling and baking tests are made to determine the value of the various varieties for bread making. Before all of these points can be determined with certainty, tests must be made for six to eight years.

After the best varieties in the head-row test have been determined, seed of these varieties is planted in one-fortieth acre increase plots from which seed is obtained sufficient to plant a larger area. The next step is to increase the product of these plots still further until sufficient seed can be produced to try out with farmers in various parts of the state.

So much for the improvement of a variety and what it will mean to the young farmer who must take into account every factor that affects the yield if he is going to pay 6 to 8 per cent interest on \$100 an acre land. Two bushels increase in yield to the acre resulting from the planting of a better variety means a net gain because it costs practically no more to produce forty bushels to the acre than it does to produce thirty-eight bushels and the extra two bushels to the acre would be a net gain of say \$2 an acre, which would mean 6 per cent interest on one-third of the acreage which produced the wheat.

VARYING RATE OF PLANTING

Another way of reducing the cost of producing a bushel of wheat is to vary the rate of planting with the date of planting. In Kansas wheat planting time begins early in September, or the last week in August in certain seasons and in certain localities, and extends into November. In a single season a farmer may plant some wheat early in September and some as late as November and he will plant at the same rate on both of these dates. We have found at the Kansas Experiment Station that the earlier wheat is planted, the less seed it is necessary to plant for maximum yield. If by knowing how much seed to plant at a certain date it is possible to save a half bushel of seed, the saving is a net gain and means say \$1.00, which is 12 per cent interest on one-twelfth of the acreage planted if the land is valued at \$100 an acre.

There are still other factors in connection with the growing of wheat and other crops that, to the farmer who has been in the business for twenty or more years, who owns his own land and is established in comparative comfort, seem like baby play and not worthy of serious consideration. Their acceptance or rejection by the man who is trying to pay for a farm out of the proceeds of the crop produced, however, will determine his success or failure. I am, presenting these facts for the prospective farmer, the young man who is trying to buy his farm on borrowed money and pay for it from his crops. It is these young men that I wish to encourage to become the owners of the 36 per cent of the farms in the state that are now tenanted, because the permanency and soundness of our agriculture will depend largely upon whether the land is farmed by the owner or a tenant.

MUST HAVE GOOD SEED BED

Farmers are beginning to realize that if they profit as they should through planting a high yielding strain of wheat, it is necessary for them to provide a favorable place for it to grow. The preparation of a good seed bed cannot be over-emphasized. It has much more to do with increasing yields than the variety grown and must be kept constantly in mind by the young man who is trying to become a farm owner. Our soils are still rich in fertility, but the fertility is less readily available to the plant than it once was. The soil needs to be plowed a little earlier in the season to bring about the same favorable condition for planting that once could be obtained by the mere scratching of the soil.

DIVERSITY IN FARMING

We need to give our land a rest from wheat once in a while, and plant it to some other crop like corn, alfalfa, or the sorghums. We need to carry some live stock on the land and utilize as feed

(Continued on Page Eleven)

Kansas Farmer Dairy Club

Speed Of Separator

PROBABLY many of our Dairy Club members help in separating the milk. We wonder if you can tell by the hum of your cream separator how many revolutions a minute you are turning the crank. If you depend on that method of telling how fast you are turning, the chances are you miss the proper speed more often than you get it right.

The Department of Agriculture has shown conclusively as a result of its investigations that thousands of dollars worth of cream is lost every year because the separators are turned at too low a rate of speed. In some cases the losses in a herd of ten cows run as high as fifty to a hundred dollars a year.

As a result of the careful work being done by our Dairy Club members, we feel sure all are appreciating the importance of accuracy in dairy work. A cream separator will not skim clean if it is turned either faster or slower than the number of turns stated on the crank. If you are not already doing this, try taking out a watch or a clock when you start the separator and count the number of revolutions you are making. It does not take any more time to be careful, and if you gauge your speed by the clock you can be sure you are turning the separator at the speed recommended by the maker.

keep it at this temperature until the whey clears. It should not be heated too rapidly, as this will injure the product. The time of heating and waiting for the whey to clear should consume thirty or forty minutes. When the whey has well separated, draw it off and hang the curd in a cheesecloth to drain. Cottage cheese should not be sloppy, but should be fairly moist after it is drained. It should be salted to taste and about an ounce of thick cream added to each pound will improve its quality.

Likes Club Stationery

Enclosed you will find my records for last month. I am sorry that I have been so slow about sending my records this last month, but I have been so busy that I did not have time to make them out. I will try to do better next time.

I received the feed records and the Kansas Farmer Dairy Club stationery, and I think it is fine and thank you very much for it and the feed records. My cow is nearly dry now, but I think I can pay the note off by the first of September.—ERNEST S. ASBURY, Easton.

Buying Hay for Winter

I thank you for the nice Dairy Club stationery.

I worked on the tractor only two and one-half days and then they quit running it. I have a job putting up alfalfa. I have bought about five and one-half tons of alfalfa and I have the promise of about three tons at fifteen dollars a ton in the field. It is fine hay. Most people want about twenty dollars for it or are holding it until winter.

Daisy has sprained her leg and is pretty lame now. I had a veterinarian look at her and he thinks she will get all right pretty soon. I received the scales all right. I like them fine.—HARVEY RUSSELL, Scott City.

High-Priced Cow Pays Out

My cow, Thilda, is doing fine. She gave only forty pounds a day during the hot weather, but now that it is cooler she has gone up to fifty pounds a day. I will have her paid for in about two months.

We are feeding our cows bran and linseed oil meal because we can hardly get corn at all. We mix four pounds of bran with one pound of linseed oil meal. Is that about right, or should we use more of the oil meal?—ELISE REGER, Whitewater.

The cow Elise has almost paid for cost her \$450. This is the highest priced cow used in the contest. She sold the calf for \$200 when it was six weeks old. This was quite a help in paying for the cow. The remainder of course was paid from the profits of her milk. The mixture of bran and oil meal is all right. It is not as good a ration as it would be if some corn could be added, but under the circumstances it is probably as good a grain ration as could be fed.

We wonder if any of our club members have "thoroughbred" cows, pigeons, chickens, or pigs on their farms. Be careful how you use this word "thoroughbred." Its incorrect use betrays ignorance of live stock terms. Thoroughbred is the name of the English breed of running horses just as Jersey and Holstein are the names of dairy cows. This breed of horses was established in the seventeenth century, and because they are bred so true to type people formed the habit of incorrectly using the word "thoroughbred" when they wanted to refer to pure-bred animals of other breeds.

Recently John M. Scott, of the Florida Experiment Station, reported on killing flies in dairy barns by the use of formaldehyde, or commercial formalin. Fresh milk to which 10 or 15 per cent of formalin had been added is sprinkled over the floors of the barn and this process repeated as often as the flies seem hungry. In a few days the flies will be gone or greatly reduced in numbers. This treatment should be frequently repeated during the fly season. This is a much better remedy than the use of fly repellants, since it actually destroys the flies and thus prevents their increase. There is but little danger of poisoning from this solution, but like all other poisons it should be used with care.



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This Year's Wheat Will Grow

Several samples of this year's wheat were selected in Ellis and Russell counties and tested for germination. F. A. Kiene, of the Hays Station, who made the test, reports that of the six samples the average germination was 91.6 per cent. The result of the test is surprising in view of the doubt expressed by many farmers as to the vitality of this grain. The average of 91.6 per cent of strong germination is very satisfactory when we consider that one sample came from a field that was very weedy, yielding only a little over two bushels per acre, and all were tested without cleaning or grading.

The good germination may be explained by the fact that the germ is formed, fertilized and matured as the first step in the development of the grain. The next step is the deposit of protein and the last is the deposit of starch. This last step was the only one in any way affected by the dry, hot weather.

The test shows that 1917 wheat may be safely used for seed. It will be well to clean and grade this seed for the broken and badly shrunken grains are valuable for chicken feed. Three pecks of cleaned and graded seed per acre from this crop will be sufficient to sow on well prepared land as late as September 25.

Finding Cows for Club Work

Boys and girls living in counties having agricultural agents should call on these agents to help them find suitable cows for the club work. The county agricultural agent knows where the good milk cows in his county are, and will be glad to help you find the kind of cow you want. He may be able to find for you, not very far away, just the kind of cow you want at the price you are willing to pay. At any rate, he will be glad to try to do this for you.

You should become acquainted with your county agricultural agent for the same reason that you should become acquainted with your banker, namely, because through your friendship with him you will learn many valuable things about business and other matters with which boys and girls should be familiar. He will be glad to have you call on him.

Paying for Second Cow

I have been a very busy girl this summer, and will have enough money earned when school begins in September to buy my books and clothes for the year. My cow lacked six weeks of giving milk the entire year. She will be fresh this month.

My note drew 6 per cent interest and I paid it off the first of July. Mr. Wulfekuhler, the banker, loaned me the money to buy another cow and I have just made my first payment of ten dollars on her.

Milk from my cow was used to feed a baby whose mother was taken down with typhoid fever when it was two months old and it did fine. Milk from my cow was also the mother's first diet after being brought home from the hospital. I think this is a good test of the way I handle my milk.—MAHALA SMITH, Leavenworth, Kansas.

Mahala will not be able to do the club work for the second year because of her school duties. Se is not giving up the idea, however, of doing dairy work. We will expect her to have the second cow paid for before another year is up, and some money to spare besides.

Last week we said something about the value of skim milk. We wonder how many of our club members know how to make cottage cheese. We happen to know of two boys, both club members, living near a large town, who make their skim milk into cottage cheese and sell it in the town. In this way they get more out of it than any other way they could use it. A hundred pounds of skim milk should make at least fifteen pounds of the cottage cheese. This should bring ten or fifteen cents a pound. This would make the skim milk used return \$1.50 to \$2.25 a hundred pounds. To make good cottage cheese, use fresh, clean skim milk and keep it at a temperature of sixty-eight or seventy degrees until it is well curdled. This will usually be in about twenty-four hours. Break the curd into large pieces fairly uniform in size. Heat it gently until it reaches a temperature of ninety to ninety-four degrees and

SEED WHEAT AT 1-2 COST

Send your name and address and receive a proposition from us to supply your seed wheat at about one-half the cost to sow your own wheat. We mean it. If you will use of your own wheat, \$10, \$50, \$100 or more, at market price, we will send you better seed to sow the same acreage for about one-half—\$5, \$25 or \$50, etc. But get our proposition. Better do it now. Send the coupon below.

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ECONOMIZING ON GRAIN

LESS grain can be fed by many dairymen without reducing milk production, provided they feed more silage and legume hay. Less grain will be available for feeding to cattle, for much more than usual is needed now for human food, and the emergency demands that every effort be made for its conservation. Milk production must be maintained, hence every effort should be made to substitute other feeds for grain in the dairy ration. To do that the silo will help.

Fruits and green vegetables are canned so as to supply succulent and palatable foods to the family during the winter. Succulence is just as essential to the cow as to a human being. The abundant milk flow obtained from June pasture to a large extent is due to the succulence of the grass. Silage provides succulent feed during winter when pasture is not available. With silage in the ration dairy cattle can be kept in the condition of health common to animals on pasture. The digestive system of a cow is well suited for the utilization of large quantities of green grasses and other coarse, succulent material. Silage is palatable, and no other feed will combine so well with dry hay and a little grain to produce maximum economical results.

Siloing is an excellent way of preserving the mature corn crop or of saving one which for any reason must be harvested before maturity. About 40 per cent of the total food material in the corn plant is in the stalks and leaves. When we harvest only the ears nearly one-half of the crop is lost; on the other hand, when the crop is put into the silo the losses are very small. When dry weather, frost, or insects attack a field of corn before it is ripe, the entire crop may be lost unless a silo is ready in which to preserve it.

No feed crops can be so successfully harvested under widely varying conditions as those that are put into the silo. Only in case of drought or frost is it necessary to rush the filling of the silo; rain or dew on the forage does not injure the silage.

The silo at all times, and particularly now, offers one of the best means of reducing feed bills. The present great national emergency places these questions before everyone who keeps cattle: Have you a silo? If you have not, your herd is not most economically fed; why not build a silo and fill it before frost comes? If you have one, is it big enough to supply all the silage your cattle can eat before the next crop is harvested? If not, build another. You can buy one ready to erect, or you can build it yourself at small cash expenditure. Home-made silos of concrete or wood can be erected with little trouble.

Call on the extension department of your agricultural college for any assistance that you may need in this respect.

Along with the silo in saving grain goes the use of clover, alfalfa, cowpeas, soybeans, or other legume hay. When fed with good silage, these hays will maintain a medium milk production at a relatively low cost.

At the Illinois experiment station the milk flow was slightly increased when eight pounds of alfalfa hay was substituted for an equal weight of concentrates. The Alabama station increased the net profits by substituting cowpea hay for wheat bran. When an eleven-pound grain ration and five pounds of mixed hay were displaced by an equal weight of clover hay, at the New Jersey station, the milk flow fell from 23.8 to 20.1 pounds, but the net profits were increased. In these trials the cows were also fed first-class corn silage. Under ordinary farm conditions it is not to be expected that legume hay can take the place of the entire grain ration, but if it is substituted in part, large quantities of grain will be saved and released for human food.

The first step in bringing this condition about must be the planting of more legumes, and the sooner this is done the better it will be for the individual dairyman as well as for his state and nation. Every dairy farm should produce at least one ton of legume hay for each cow on the place. It is now too late to produce additional legumes this year,

but it is none too early to make plans for fall planting, so that next year our milk supply may be maintained by furnishing our dairy cattle, in addition to a liberal allowance of silage, an abundance of legume hay.

The rains we are having will make it possible to get alfalfa started in fine shape this fall. Quite often it is too dry to start alfalfa until late in September and then it is apt to winter-kill. This should be a fall to start alfalfa on farms where there is not enough to supply the needs of the cows.

What Cow Tester Does

There ought to be many more cow test associations in Kansas than there are. In a bulletin of the Illinois Experiment Station the duties of the tester of a cow test association are given in detail. It should be an easy matter to convince almost any man milking cows that the information coming from membership in the association is worth a great deal more than it costs.

The duties of a cow tester are given as follows in this circular:

Weights feed given to each cow in the evening.

Weights and samples the milk from each cow in the evening.

Weights feed given to cow next morning.

Weights and samples milk from each cow next morning.

Tests samples of milk of each cow for per cent of butterfat.

Computes total feed consumed for the month by each cow, using weights obtained as average.

Computes total milk produced by each cow, using same basis.

At the end of the test year he computes profit or loss for each cow, charging each cow for feed eaten and crediting her with milk and fat produced.

The author of the circular quoted states that in Illinois the cost of testing cows is about \$1.50 a cow each year, with a minimum of \$15 a year for each herd. In one county the average annual production per cow was increased 1,052 pounds of milk and fifty-two pounds of butterfat as a result of four years' cow testing work. In Sweden a cow testing association brought about an annual increase of 3,174 pounds of milk and one hundred pounds of butterfat as a result of ten years' work.

The kind of cows milked is determined almost entirely by the effort put forth on the part of the producer. It is one factor in production over which he alone has direct control.

Use Good Bull

Too many dairymen seem to be going on the theory that the only way to get a herd of good dairy cows is to buy them. This has been done, but it is a most expensive way to get a herd of high-producing animals. The cheapest possible way is to persistently use a pure-bred sire with plenty of heavy-producing blood back of him, keeping records constantly so as to be able to cull out the cows that are not profitable producers. The editor of Hoard's Dairyman tells of a man who started out to get together by purchase a Jersey herd of twenty-five cows that would average three hundred pounds of butterfat annually. Before he succeeded he had bought and sold a hundred cows. Do not hesitate to put good money into the right kind of a herd bull. There is no surer or safer way to build up a high-producing herd than to breed and develop the cows yourself.

Fat Production True Basis

The American Jersey Cattle Club has discontinued publishing estimated butter production in the Register of Merit records. This is a wise decision and saves a lot of unnecessary work. A cow does not produce butter. She produces butterfat, and the difference between speaking of butterfat and butter is a matter of actual production and mere estimates. If a man wishes to know how much butter a given amount of butterfat will produce, he can himself make the calculation. By speaking of a cow's production in terms of butterfat, we have a uniform basis of comparison. Much



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The American Smoker



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.

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confusion has resulted from the use of estimates of butter production because of the different amounts of butterfat estimated to make a pound of butter. One of the cow test associations in Kansas still makes its official reports in terms of butter. We note, however, that the newer associations are all reporting in terms of butterfat, which is the true basis for comparing production records.

Montgomery County has one of the newly organized cow testing associations. This association now has twenty members, representing 385 cows. Of these 103 are pure-bred cows. There are twenty-two pure-bred sires used. Four members do not keep sires of their own, but are using pure-bred animals. There are in the association four pure-bred Holstein herds and three pure-bred Jersey herds and twenty-one cows were on official test in June. George L. Eichler, the cow tester, reports that in June there were three cows in the association producing fifty pounds or more of butterfat, three forty-pound cows, and twenty-eight thirty-pound cows. Butterfat sold for 38 cents a pound, butter 35 cents wholesale, milk 25 cents a gallon

wholesale and 10 and 12 cents a quart retail. At the time the June report was made alfalfa hay was worth \$15 a ton, corn chop \$3.25 a hundred, bran \$1.85, cottonseed meal \$2.15, oil meal \$3.25, and oats 70 cents a bushel.

Owing to the fact that the fall rains have started almost a month earlier than usual, we can count on much more than the usual amount of fall pasture. With grain as high as it is now, it behooves the hog man to make the greatest use possible of pasture crops in saving expensive feed. The experiment station of Missouri has shown that 20 to 40 per cent less grain is required to produce a given amount of pork when good pasture crops are used throughout the season to the fullest extent possible. To effect this saving, it is necessary, however, to limit the amount of grain fed to the hogs on pasture. If fed too heavily on grain, they will not consume as much of the pasture, and of course will be carrying more fat at the end of the season. They should receive enough grain to keep them growing thriftily so that they will be in good condition to finish for market when fed corn later in the season.

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Proper Seed Bed and Seed

INDICATIONS are most favorable for putting out large acreages of wheat in Kansas this fall. In 1914 we raised 180,000,000 bushels of wheat from 9,000,000 acres of land. Now the country is asking and Kansas is setting herself the job of raising 200,000,000 bushels of wheat from 10,000,000 acres in 1918. Most of this increase must come from Western Kansas, for the eastern part of the state is not capable of great extension of the cropping area.

Much difficulty has been encountered in preparing a seed bed, but August and September offer some time for this work. Late August and early September plowing should be shallow. Disking is a good practice for late seed bed preparation where the weeds are not too large. If the weeds interfere with working the land they should be mowed and stacked for hay or put in silos. The disk will then put the land in good shape for wheat. Early preparation is always advantageous, for time is allowed for settling and packing the soil and for the liberation of abundant plant food.

Securing seed wheat for all the people of Western Kansas is a big problem. Every one should secure his seed from his own bin, from his neighbor or from the nearest place possible. This will relieve the railroads from a heavy burden, save money for the wheat grower, and assist in the distribution of the seed. Where new seed is available it should be cleaned and graded, for the screenings of shriveled and broken grains are too valuable to be put in the ground. Five to fifteen per cent of the new wheat will grade out and the balance will make good seed. A germination test of seven lots of new seed from different counties, made at the Fort Hays Experiment Station, shows that the new crop may be depended upon to produce vigorous and thrifty plants.

At seeding time there should be sufficient moisture present in the soil to germinate the seed quickly and permit it to root well down into the soil. Under dry conditions the small, poorly developed plant may die before rains come. If the seed bed is well prepared and there is an abundance of moisture and plant food in the soil, seeding may be done safely as late as October 15. Stubble land and late plowing should be seeded during the first half of September. Early plowing and fallow land may be seeded later. Likewise the best prepared land may be seeded at a lower rate than the land that is late plowed or stubbled in. Two pecks of good graded seed on good summer fallow planted September 1 and 15 at the Fort Hays Experiment Station has made higher yields than higher rates planted on the same dates.

The Hessian fly has made itself felt in parts of Western Kansas during the last few years, but it is unlikely that serious damage will occur again for several years. October 1 to 5 is considered the fly-free date over most of Western Kansas, and where the fly is known to be present it will be well to seed late in September.

This season is one of extremes which will require the most careful work and planning if best results are secured. Grading the seed, careful regulation of the rate, date of seeding, character of the seed bed, and securing seed near home, will effect a saving that will be considerable under the high cost of seed wheat and transportation.

Replacing Old Foundations

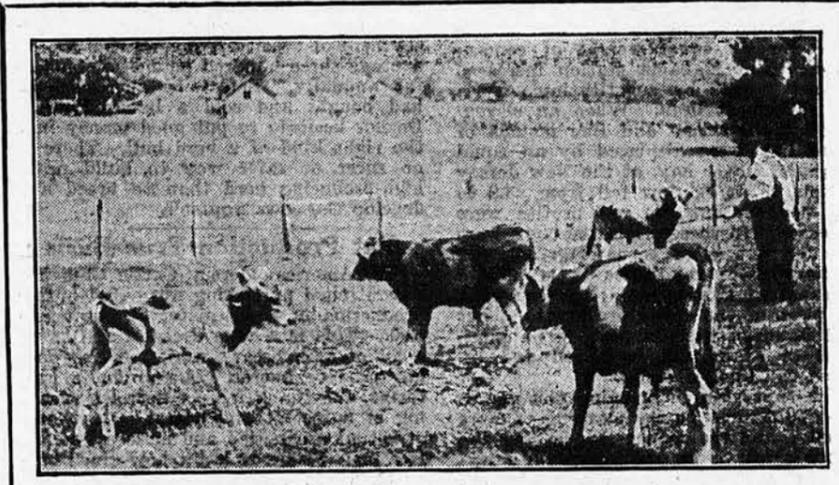
Often wood sills and posts of barns and other farm buildings become rotten and the stone or brick foundations crumble. This frequently happens in buildings which otherwise are in a fair state of preservation and well worth repair. Concrete is the best material to use in replacing the decayed sills and crumbling masonry.

If the foundation is in bad shape, it may be necessary to remove it entirely and build a new one of concrete throughout; or possibly it can be left in position and boxed in with concrete. Again, if that part of the foundation which is below ground is still serviceable, it can be capped with concrete by first leveling off the foundation to the ground line, building a form of the required height and width, and from that point up filling it with concrete. In such a case concrete is placed directly on top of the old foundation without any further preparation except that the old foundation should be cleaned and well soaked with water to prevent excessive absorption of water from the concrete.

The sills and the decayed portion of the posts and siding will have to be replaced. In order to do this, it will be necessary to take the load off the posts and support the building by means of props and braces. In a light building a single row of props either on the inside or outside will be sufficient to carry the load temporarily, but in large buildings bracing may be required on both sides. The props used on the inside should be then placed under the stringers running out from the post and on the outside it will be necessary to nail a block or board at least two inches thick to the wall of the building directly opposite the post to be raised. By the use of wedges the load can readily be taken from the post and carried by the props.

The old sill should be removed and the posts cut off above the decayed portion. If the posts are all decayed to a comparatively uniform height, they can be cut to a uniform length, or any number of adjoining posts may be cut to the same length, and the concrete built up accordingly. If an occasional post is in a worse condition than the others, it can be cut and spliced so that it will be the same length as those next to it.

The mixture for the foundation should be in the proportion of one sack Portland cement to two and one-half cubic feet of coarse clean sand and five parts of well-graded pebbles or broken stone, the largest dimension of which is not more than one inch—all well mixed, using enough water to form a quaky or jelly-



PASTURE SCENE ON FARM OF ROLLA OLIVER, BUCHANAN COUNTY, MISSOURI.—
TRIO OF JERSEY BULL CALVES FROM HIGH-PRODUCING MOTHERS

like mixture that will require little tamping.

Concrete should be placed in layers about six inches thick. As soon as each layer is placed in the form, a spade should be inserted between the concrete and the form, and worked up and down so as to force the pebbles away from the surface, thus allowing the cement mortar to come to the face.

Teaching of Agriculture

How can we vitalize the teaching of agriculture in the rural schools?

No more important problem is presented to American educators today. It can be solved in but one way, says P. G. Holden, of the extension department of the International Harvester Company, and that is to rotate the subjects. This will prevent skimming, and repetition; it will sustain interest—keep the subject alive.

The teaching of agriculture in rural schools never will be a success so long as we teach the same thing over and over again, year after year, or allow the teacher to skim all the branches and leave a subject barren and uninteresting for the teacher who follows the next year.

In one-room schools all children in the lower grades become as familiar with subjects taught in the seventh and eighth grades as do their older brothers and sisters. By rotating the subjects a new field is opened to the pupils each year.

Rotation of subjects means the teaching of but one class of subjects each year, such as: First year, farm crops—corn, alfalfa, weeds, seeds, gardens, and for girls, sewing etc. Second year, the making of things—tying and splicing rope, cement work, making fly traps, screens, canning, etc. Third year, animals—live stock, feeding, testing milk, diseases and remedies, cooking, etc. Fourth year, soil and home—saving moisture, rotation of crops, soil fertility, sanitation, flowers, pictures, etc.

Rotating of subjects in this way enables us to teach more agriculture. It eliminates repetition and gives us a new subject each year, which keeps interest alive and keen. It does not kill the subject by skimming or teaching the same thing over and over again, and it makes the directing of the work much easier for the county superintendent who always has more than he can do. Instead of having several lines of instruction to prepare each year, he will have but one.

Agriculture will ultimately be taught in all rural schools. In Oklahoma it is required by the state constitution, in other states by law. Some states have tried it, but in a hit-and-miss fashion. They have skimmed through books; taught words, not things; repeated the same subjects every year; killed interest; made agriculture a dead letter.

If we would teach agriculture in a way to bring the best results we must keep it alive—must develop interest—must rotate the subjects.

Agriculture cannot be successfully introduced in all the rural schools in any state or any county at the same time. It must grow into the schools. That is the basis of the plan adopted in Oklahoma.

They selected twelve county superintendents who are live wires. These superintendents held a three-day meeting, studied how to teach a few definite things and collected the necessary demonstration material.

Each of these superintendents selected from four to a dozen of his best teachers in whose schools agriculture is being taught this year. These teachers were given special instruction at the teachers' institutes.

When the school year opened, the county superintendent and his assistants visited one of these schools and assisted the teacher in starting the work right. Then a second school was visited, and a third, and so on. There are only a few teachers to look after this year. The work of the superintendent is simplified, concentrated, made more effective.

Next year other counties and other schools will be added. Agriculture will grow into the schools. In four or five years it will be taught in every rural school in the state—and taught in the right way.

We cannot put agriculture into all the schools at once. Its teaching is essentially a matter of growth and development. We cannot vitalize agriculture in the rural schools except by rotating the subjects. And the word "agriculture" is used here to mean anything pertaining to the life and welfare of the children and the people of the community—

health, sanitation, social conditions, home conveniences, community interests, as well as the things having to do directly with farming.

A pamphlet going more into detail is being published by Professor Holden. If any of our readers would like to receive this little pamphlet, we will endeavor to procure copies for them.

George Throckmorton, Coffey County, writes that the good rains have greatly changed the crop situation. Much upland corn was hurt so badly by dry weather that it cannot make corn. Much of the kafir was poor on account of poor seed and frost, but the fields were so well cultivated in June that they stood the dry weather better than they usually do. Wheat and oats in Coffey County were so fine that farmers will have much feed even if the corn is short.

A Kerosene Oil Can

One of the handy things I have learned to use around the farm is a regular-sized oiler with kerosene or coal oil in it. There are rusty nuts on rusty bolts that will yield to the wrench if a little oil is applied and a little time is allowed for it to penetrate the rust. Of course, kerosene can be applied with a regular gallon oil can, but it wastes the oil and there are a good many places on machinery that cannot be reached with anything so large and bunglesome as a gallon can.

The little can may be used to squirt

the oil where it is wanted, and that is where it is almost impossible to get any can, if it has to be poured on.

I like to have the can with the oil in it marked plainly if there is more than one can that looks alike.

I notice that the mechanics who come out to set up machinery among us farmers have about one-fourth machine oil mixed with the kerosene. They say this is a good mixture for a thread that is slightly battered and must be worked down with the nut only.—R. E. ROGERS in Power Farming.

Tractor to Fit Farm

Most tractors now on the market are good tractors—the engines are powerful and reliable—they are, as a whole, practical, and with intelligent use, entirely satisfactory. That is, they are satisfactory if the purchaser has looked carefully to his own particular tractor needs before he bought.

Here's the point: The best, most skillfully designed, most carefully made tractor in the world would prove an expensive luxury if it did not fit your own particular requirements. For instance, the farm of 1,000 acres requires an entirely different type of tractor than the small farmer with 80 to 250 acres.

The powerful tractor made to turn great quantities of dirt in plowing vast acreages would most certainly not be fitted for the small farm where a light tractor must be used which will do a wide variety of work—where, in order to

be profitable, it must cultivate as well as plow, disk, harrow and drill; where it must pull the mower, binder and wagon as well as fill the silo and do many other belt work jobs.

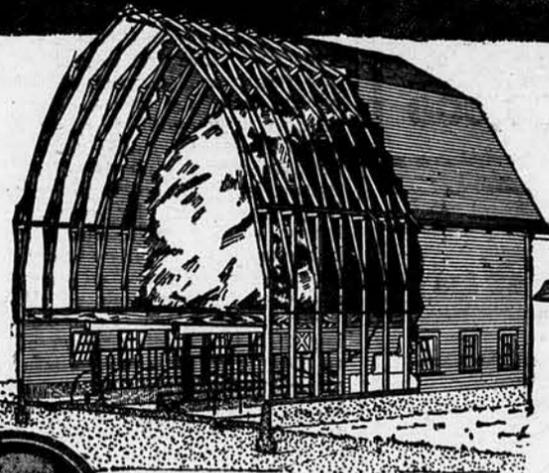
The small farm tractor in order to be profitable must do enough of the things that horses now do, so you will feel safe in eliminating a large per cent of your horses. Therefore, the farmer who "looks before he buys" will look first to his own farm power needs, then look for the tractor which most completely fits those needs.

There are now on the market tractors to "fit" the small as well as the large thousand-acre farm and no farmer need make the mistake of buying a misfit tractor.

The weekly weather report covering the period ending July 31 states that corn has been seriously damaged by the extremely hot and dry weather. In the western and central counties it has been so badly burned that in some sections it will not even produce good fodder, the report states. Grain sorghums, however, are reported to be at a standstill, but not seriously damaged yet except in a few localities. This is the same old story. These crops always pull through dry, hot weather with a minimum of injury. Why not give them a fair chance?

Save your straw. Oat straw especially is a valuable feed and will save many a pound of expensive hay.

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Saves Time, Trouble, Material and Labor

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Topeka, Sept. 10-11-12-13-14-15, 1917

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Mammoth Live Stock and Agricultural Exhibit

The new Agricultural Hall will be crowded with exhibits of the farm, Boys' and Girls' Clubs, the Junior and Home-Made Departments. A big display by Mother and Daughter Canning Club, Culinary, Art and Textile exhibitors. Ten barns devoted to live stock.

24 Horse Races

The afternoons of Tuesday, Wednesday, Thursday and Friday will be devoted to harness and running races. \$7,500 in purses. Kansas Derby.

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Auto Races

Fred Horey, the world's champion, will defend his title in a match race for a purse of \$1,000.00 on Saturday.

30 Big Shows

The Con T. Kennedy Shows will furnish the amusement on Sunflower Trail, where there will be thirty clean and entertaining Coney Island shows.

Battle in Skies

Katherine Stinson Champion Women Flyer

Katherine Stinson, champion woman flyer, is only twenty years old, but is famed as a flyer. She loops the loop, flies upside-down, does the death drop. Miss Stinson will fly on Saturday, "Katherine Stinson Day," and will race Fred Horey, the auto champion.

Peoples' Pavillon---An Educational Department

In the People's Pavilion, under the auspices of the Kansas Council of Defense, lectures and demonstrations in food conservation and production will be held daily and each day a Mother and Daughter Canning Club will give a canning demonstration.

\$30,000 IN PREMIUMS \$30,000

Feed the Fighters! Win the War! Harvest the Crops! Save the Yields!

On the battlefields of France and Flanders the United States boys and the Canadian boys are fighting side by side to win for the World the freedom that Prussianism would destroy.

While doing this they must be fed and every ounce of muscle that can be requisitioned must go into use to save this year's crop. A short harvest period requires the combined forces of the two countries in team work, such as the soldier boys in France and Flanders are demonstrating.

THE COMBINED FIGHTERS IN FRANCE AND FLANDERS AND THE COMBINED HARVESTERS IN AMERICA WILL BRING THE ALLIED VICTORY NEARER

A reciprocal arrangement for the use of farm workers has been perfected between the Department of the Interior of Canada and the Departments of Labor and Agriculture of the United States, under which it is proposed to permit the harvesters that are now engaged in the wheat fields of Oklahoma, Kansas, Iowa, North Dakota, South Dakota, Nebraska, Minnesota, and Wisconsin to move over into Canada, with the privilege of later returning to the United States, when the crops in the United States have been conserved, and help to save the enormous crops in Canada which by that time will be ready for harvesting.

HELP YOUR CANADIAN NEIGHBORS WHEN YOUR OWN CROP IS HARVESTED

Canada wants 40,000 Harvest Hands to take care of its
13 Million Acre Wheat Field

One cent a mile railway fare from the International Boundary line to destination and the same rate returning to the International Boundary. High wages, good board, comfortable lodgings.

An Identification Card issued at the boundary by a Canadian Immigration Officer will guarantee no trouble in returning to the United States.

AS SOON AS YOUR OWN HARVEST IS SAVED, move northward and assist your Canadian neighbor in harvesting his; in this way do your bit in helping "Win the War."

For particulars as to routes, identification cards and place where employment may be had, apply to Superintendent of Immigration, Ottawa, Canada, or to

GEO. A. COOK, Canadian Government Agent, 2012 Main St., Kansas City, Mo.



OAT STRAW FOR FEED

EASTERN Kansas has grown the best oats crop in years. Many yields of seventy to eighty or ninety bushels per acre have been reported. These heavy yields of grain were accompanied by a heavy growth of straw. We wonder if this oat straw will all be used to the best advantage possible. The modern wind stacker tends to a waste of straw because the stacks are mere piles and absolutely open to the weather. With hay of all kinds selling at \$20 a ton, it will pay to spend considerably more than the usual amount of labor in putting straw stacks in shape to keep. Many stacks have already been seriously injured by the rains of the past few weeks. On a good many farms in Eastern Kansas, however, the oats have not been threshed. They are stacked in good shape and on these farms there is opportunity to have the threshing done at a time when the straw can be properly cared for. Good, clean oat straw is well worth baling and storing in barns or sheds. Where this cannot be done, the stacks can be straightened up and covered with slough hay or sowed cane to protect them from rain damage.

Oat straw is the most valuable of all the straws as feed. Every hundred pounds of oat straw contains a pound of digestible protein, 42.6 pounds of digestible carbohydrate, and nine-tenths of a pound of fat. The carbohydrate part of feed furnishes heat and energy and mature animals can use large amounts of feeds containing relatively high percentages of this nutrient. For wintering stock cattle and horses, good oat straw can be used as a large part of the roughage ration. Such animals require very small amounts of digestible protein. Of course the straw must be classed as a bulky feed, and for that reason is not adapted to being used in large quantities by work horses or heavy milking cows, but mature stock being maintained only through the winter have ample time and energy to chew and digest bulky feeds of all kinds.

We have formed the habit of assuming that the feeding value of straw is so low that it is not worth while to make much effort to save it. Conditions now, however, are vastly different. When all kinds of hay are selling at the present prevailing prices, the man with live stock to winter must plan in every way possible to get the most from his rough feeds having comparatively low market value.

Ewes for New Farm Flocks

The demand for breeding ewes has exhausted the local supply in many sections. Western range ewes are being used to start farm flocks in the corn belt and in the East. In the corn belt these ewes have already proved their ability to produce market-topping lambs

when mated to good rams of mutton breeds and when well cared for during the winter and after lambing.

In purchasing these ewes care should be taken to obtain those with sound teeth, udders that are soft and pliable, and teats that are sound and have no hard cores. Ewes from one to three years of age are to be preferred. These ewes may be in thin condition but should suffer no discrimination on this account alone. If thin they cost less per head than if fat, and the flesh needed to put them in good condition can be put on by the purchaser more cheaply than it can be bought in the open market.

These ewes are usually free from stomach worms, and thanks to the regulations governing the interstate shipment of sheep, are free from sheep scab or other communicable disease. They can ordinarily be purchased through commission men on such central markets as Kansas City, St. Joseph, or Omaha, or direct from the range breeders. Organizations interested in effecting an increase in farm flocks have arranged to sell western ewes to eastern farmers at cost.

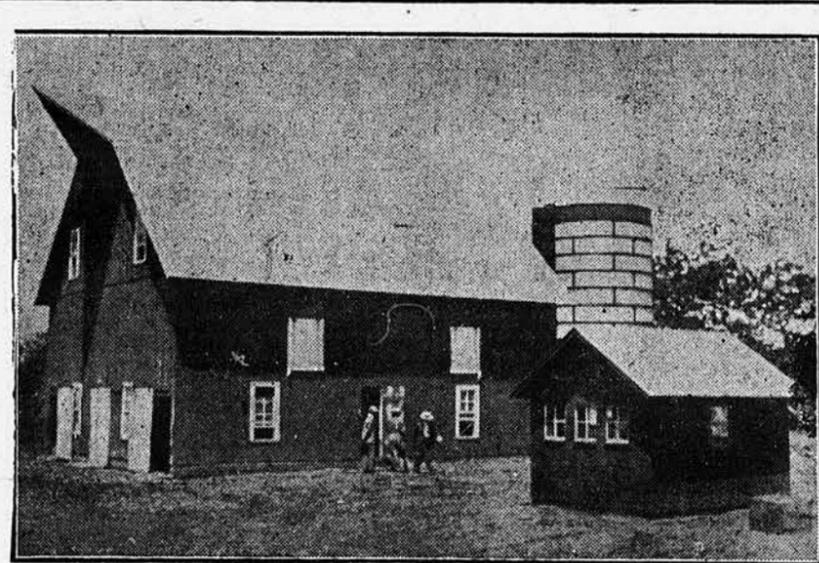
Regardless of how they are purchased, the buyer should insist that the stock be healthy, sound of teeth, and have good udders and teats.

Farmers' Bulletin No. 576, entitled "Breeds of Sheep for the Farm," will assist the owner of grade ewes in the selection of a pure-bred ram to head the flock. This bulletin discusses the different breeds, their characteristics and adaptabilities. Advice on the different kinds of equipment to be used on the sheep farm can be obtained from Farmers' Bulletin No. 810, dealing with "Equipment for Farm Sheep Raising." These bulletins can be procured free by writing to the U. S. Department of Agriculture, Washington, D. C.

Pure-Bred Flock Pays

In the August news letter sent to farm bureau members by E. J. Macy, agricultural agent in Montgomery County, a very interesting account is given of what has been done on one of the farms of the county in handling pure-bred sheep. Three years ago Ed and Pearl Bushnell sold their grade flock of sheep, paying four times as much for the pure-bred sheep as they received for the grades sold. Their flock now consists of sixty-one head, twenty being mature ewes, nine yearling ewes, two rams, and thirty spring lambs. The thirty lambs were from the twenty mature ewes. This is a very good lamb crop from that number of ewes. Some of the lambs now weigh over a hundred pounds.

The mature ewes sheared an average of ten pounds of wool. The nine yearlings yielded an average of thirteen pounds to the ewe, one of them clipping



LUMBER FOR THIS 10 x 12 MILK HOUSE ON FARM OF J. BALES, DOUGLAS COUNTY, COST SIXTY DOLLARS.—IT CONTAINS A CEMENT TANK FOR COOLING PURPOSES.—THE MILK GOES TO KANSAS CITY

SUBSCRIPTION BLANK

Kansas Farmer, Topeka, Kansas.

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

KANSAS FARMER.....year.....
One year for \$1.00; two years for \$1.50; three years for \$2.00.

Name

Post Office

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

Are you already taking KANSAS FARMER?

eighteen pounds. One of the rams sheared twenty-two pounds. The wool clipped from this little flock sold for over \$190, or at the rate of 61½ cents a pound.

Very little expensive feed was given this flock. For about a month before lambing the ewes were fed some corn silage and oats twice a day. This extra feed accounts for the good lamb crop and the good growth the lambs have made since birth.

The Bushnell's remedy for sheep-killing dogs is a pump gun loaded with buckshot. It is a rather drastic way of handling the situation, but seems to be effective.

In handling sheep on the farm the greatest trouble is the stomach worms, which bother the lambs especially. The plan on this farm is to prevent stomach worm infection by changing pastures every six to ten days during the summer and by keeping before the sheep a mixture consisting of two-thirds barrel salt and one-third tobacco dust. When a lamb appears to be suffering from stomach worm infection, they use the gasoline treatment as a cure. This consists in drenching the lambs, after starving them for twelve hours, with a mixture consisting of one-half tablespoonful of gasoline, one-half ounce of raw linseed oil, and a few ounces of sweet milk—never use water. This drench is given each morning until three doses have been administered. For full-grown sheep the size of the dose is doubled.

Considerable care must be used in drenching the sheep or the mixture will be drawn into the lungs instead of going into the stomach. To drench a lamb, stand him on end in front of you, with his back braced against your legs. Hold his head in a natural position or with the nose raised not higher than the eyes. The medicine should be in a small-neck bottle, and is given by placing the neck of the bottle well back in the lamb's mouth and on top of its tongue. Pour in only a small quantity at a time, removing the bottle to allow it to swallow. It is not safe to get in a hurry while drenching sheep. After this drench has been administered the lamb should not be fed for three hours.

Joseph Baxter, of Clay County, told us recently that he built his silo in 1913 and the poor, stunted crop grown that season was worth more money to him than the good crop of the year before, which was handled without the silo. This sort of testimony is coming constantly from live stock men who have built silos in years of short feed crops. Mr. Baxter says he does not see how the man handling cattle can get along without a silo. As a result of the good rains that have fallen the past two weeks there will be an abundance of good material to put into the silos this year. The rains have revived the corn in Mr. Baxter's neighborhood so that fields thought to be too far gone to be helped are likely to produce half a crop. They are certain to produce a good growth of forage, and only by having a silo can the full value of this part of the crop be realized. Mr. Baxter keeps a herd of Polled Durham cattle on his farm and does not see how he could get along without well-bred cattle to help him market the feeds grown.

Insuring a Beef Supply

Warnings have been sounded for the past decade and more of the nation's diminishing beef supply. Where is the man, woman or child in America or any other country that does not now feel the effect of its depleted condition? Since the outbreak of the European War there has been apparent to those who have studied food production and its conservation, an immediate, decisive shortage in the supply.

The American Shorthorn Breeders' Association early recognized this approaching condition and worked out a definite plan for encouraging breeders of Shorthorns everywhere to increase rather than diminish their herds; to improve the standard of the individuals, and, as far as possible, be prepared to aid in maintaining an adequate beef supply. The field force of this association was increased and instructed to encourage production everywhere. The literature sent out from the office of Secretary Harding was calculated to stimulate a general effort along this line. The quarterly magazine, The Shorthorn in America, which is broadly circulated, is an educational force in this direction.

While it has long been customary for the Association to make liberal appro-

priations from year to year for fairs and live stock shows, these appropriations have been largely increased and are now made to apply to various state and district combination shows and sales as well as to numerous additional fairs from coast to coast. The annual appropriation for prizes alone now exceeds \$50,000 and it is distributed in a way to affect the largest possible number; to give the beginner an equal chance with the man of long experience and to equalize the opportunity as between the man with the small herd and the man with the large one.

All this concerted effort is having a useful effect. It has increased production. It has proven a source of practical education to farmers and encouraged them to increase their output by raising the standard and increasing the number of pounds of beef and milk if not actually increasing the number of head produced. This broad and far-reaching course of the Shorthorn Association has stimulated activity among all cattle breeders' associations and by this plan a safeguard is thrown around the nation's meat supply and it is thereby prevented from sagging to a quantity far below its present output.

The people of the nation were counseled a few months ago to have one meatless day each week and later advices suggest two meatless days each week. It is the organized movement just outlined that has a tendency to prevent these meatless days outnumbering those on which we may be privileged to include meat in our diet, and to avert the substitution of horse flesh for beef—a practice which is even now being urged in the larger cities.—FRANK D. TOMSON.

G. F. Hart, a farm bureau member in Marshall County, has pastured twenty-three head of yearling cattle on a six-acre field of sweet clover since May 1. It has in addition carried ten brood sows and their litters all summer and pastured for three weeks ten old cows. Sweet clover is coming to have an important place with the live stock farm. The county agent in Nemaha County reports that a great deal of sweet clover is being sown in that county. This year that sown in the spring with oats is coming in fine shape. On the experiment station farm at Manhattan we saw clover in oats that had made a growth of fully eighteen inches at harvest time.

The Federal Farm Loan Board has just completed its first year of service, the members having been sworn in August 7, 1916. During the year the cooperative banking system for farmers, established under the Federal Farm Loan Act, has been put into complete operation in every state, and loans to farmers are now being approved at the rate of nearly one million dollars a day. About twenty-five farm loan associations are being chartered daily, each association representing nearly \$50,000 of loans.

On the V. L. Polson farm in Wilson County, 330 bushels of wheat was threshed from a small field shown by actual measurement to contain 4.65 acres. This is at the rate of 71.4 bushels to the acre. The 130 acres of wheat on the farm averaged 37.3 bushels to the acre.

Young Man's Opportunity

(Continued from Page Five)

the roughage that now goes to waste on so many farms, roughage like corn stover, stover of cane and the grain sorghums, and wheat straw. By diversifying crops and maintaining a few head of live stock on each wheat farm, the farmer will furnish himself with profitable employment every working day in the year. Under the present prevailing system of growing wheat a man is out of a job about six months in every year. No other business under the sun would provide a man with even a decent living if conducted in this manner.

Connected with almost every farming operation are little details that have been overlooked and are still being overlooked by our farm owners today and the men who have been on the land since Kansas first became a state. While to such men these details seem not to amount to much, they must be kept in mind by every wheat grower or farmer of the future unless he should have the good fortune—rather the misfortune—to become the possessor of his farm through inheritance.



Answering the Nation's Call

In this "supreme test" of the nation, private interests must be subordinated to the Government's need. This is as true of the telephone as of all other instrumentalities of service.

The draft for war service which has been made upon the Bell System is summarized in a recent Government report.

Government messages are given precedence over commercial messages by means of 12,000 specially drilled long distance operators all over the country.

The long distance telephone facilities out of Washington have been more than doubled.

Special connections have been established between all military headquarters, army posts, naval

stations and mobilization camps throughout the United States.

More than 10,000 miles of special systems of communication have been installed for the exclusive use of Government departments.

Active assistance has been given the Government by the Bell System in providing telephone communications at approximately one hundred lighthouses and two hundred coast guard stations.

Communication has been provided for the National Guard at railroad points, bridges and water supply systems.

A comprehensive system of war communication will be ready at the call of the Chief Signal Officer, and extensive plans for co-operation with the Navy have been put into effect with brilliant success.

As the war continues, the demands of the Government will increase. And the public can help us to meet the extraordinary conditions by putting restraint on all unnecessary and extravagant use of the telephone.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY AND ASSOCIATED COMPANIES

One Policy One System Universal Service

Write for Attractive Prices on the National Giant Steel Elevator

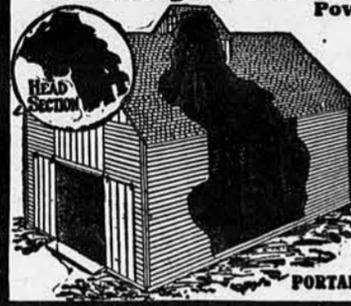
Handles all Kinds of Grain—Wheat, Oats, Barley, Shelled and Ear Corn, Etc.

Just the type machines grain farmers are looking for. Our National Giant Steel Elevators are rigid and meet increased strength demands of 36 to 60-foot elevator lengths because they have 16 angles or bends to the section. (Ordinary elevators have only 6.) 4 Wood Ribs running full length and corrugated steel couplers and keeper irons insure everlasting stability. Ribs also keep chain from dragging—lightening draft and eliminating noise.

Get Details and Prices Terms Arranged to Suit



The National Giant Runs Easier—Requires Less Power—Equipped With Common Sense Feeder Has greater capacity; 8 inches wider than others. Crib 60 bushels in 3 to 5 minutes. Screen in bottom keeps out silk and shelled corn—preventing rotting. Just the elevator you want.



Our National Giant Inside Elevator

Most Sensible Inside Machine Ever Made On cribs 28x38 ft. or less, with half pitch roof, it is not necessary to have a cupola. When cupola is necessary, we can save you from \$15 to \$30. We also save you the cost of digging a pit. Save you the length of elevator required. This machine has other sensible features. Spout swings around from side to side—fills crib directly back of elevator—also leaves corn on the cob where it belongs. More money in the farmer's pocket.

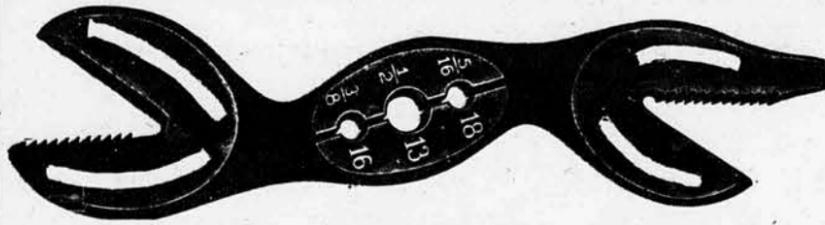
Write for Crib Plans and Prices PORTABLE ELEVATOR MFG. CO., 736 E. Grove St., Bloomington, Ill.

Use Instruction Book

An instruction book is furnished with every tractor sold. The owner of a tractor cannot afford to disregard instructions when breaking in his outfit. Practically all the instruction books furnished have been very carefully prepared and contain the results of many expert observations. When first starting to use a new tractor the machine

ought to be stopped frequently and looked over thoroughly. There may be loose parts to tighten and necessary adjustments to make. Quite frequently hot bearings will be found and these should be given plenty of lubricant. Occasionally it may be necessary to remove and refit such bearings. In breaking in a new tractor it is always a good plan to favor it somewhat until all the bearings wear to a good fit.

ALLIGATOR WRENCH AND HANDY TOOL FREE



The Alligator Wrench requires no adjustment; simple; always ready for use; never slips. Works in closer quarters than any other wrench. It is light, strong, compact. Easily carried in the pocket.

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.

WANTED—A MARRIED MAN FOR GENERAL farm work. L. B. Streeter, Wakefield, Kansas.

THOUSANDS GOVERNMENT JOBS NOW open to men-women. \$100 month. Common education sufficient. Vacations. Short hours. Rapid promotion. Write immediately for list of positions. Franklin Institute, Dept. F-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—THREE REGISTERED Shorthorn bulls, six to eighteen months; five yearling Shropshire rams. Adam Andrew, Girard, Kansas.

HIGH GRADE CALVES—HOLSTEINS, Shorthorns, Guernseys. Good ones, only \$15 to \$35, crated to express. Rates furnished. Paul Johnson, South St. Paul, Minn.

HOLSTEIN CALVES, HIGH GRADE, from cows producing up to 60 pounds. Either sex, \$15 to \$25. L. D. Arnold, Manhattan, Kansas.

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.

SHEEP

FOR SALE—TWO REGISTERED YEARLING Hampshire Down rams, also spring ram lambs. R. C. Krueger, Burlington, Kan.

THE STRAY LIST.

TAKEN UP—BY MARTIN GRUEMKEN, in Sand Creek Township, Meade County, Kansas, about the 12th of October, 1916, two steers, coming twos, red with white faces, branded I G on right hip. Worth about \$70. W. W. Pressly, County Clerk, Meade, Kan.

DOGS.

TRAINED RABBIT HOUNDS, FOX hounds, coon, opossum, skunk dogs, setters, pointers, ferrets. List free. Violet Hill Kennels, Hanover, Pa.

COLLIE PUPS FROM GENUINE STOCK dogs that drive from the heel. E. L. Dolan, Route 2, Platte City, Missouri.

TRAINED BEAGLES, RABBIT HOUNDS, foxhounds, coon, opossum, skunk dogs, setters, pointers, house, farm dogs. Ferrets. Catalog 10c. Brown's Kennels, York, Pa.

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

WANTED

WANTED—TO HEAR FROM OWNER OF black Percheron stallion for sale. Describe and price. P. B. Montford, Burrton, Kansas.

TANNING.

LET US TAN YOUR HIDE; COW, HORSE or calf skins for coat or robe. Catalog on request. The Crosby Frisian Fur Co., Rochester, N. Y.

SEEDS

SEED RYE AND WHEAT, LAWNDALE Seed Farm, Hiawatha, Kansas.

RYE—NEW CROP, EXCELLENT FOR pasture, soil building or cropping. \$2.50 bushel. B. H. Pugh, Topeka, Kansas.

SEED WHEAT, SEED RYE, ALFALFA seed, turnip seed and other seeds for fall planting. Write for prices. The Barteldes Seed Co., Lawrence, Kansas.

SWEET CLOVER "UPLAND ALFALFA," dairyman's gold mine. Permanent pasture. Grows with wheat, rye, oats. J. Lewis, Madison, Kansas.

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, Shenandoah, Iowa.

HORSES AND MULES.

IMPORTED PERCHERON STALLION, black, sure. Good jack, black with mealy points. Quick and sure. Priced right. W. F. Teague, Collyer, Kansas.

MISCELLANEOUS.

1,024 YEARS AMERICAN HISTORY, 80c postpaid. Elias Felton, Hudson, Kansas.

ENSILAGE CUTTER CHEAP, PRACTICALLY good as new; extra rapid work; Silber-zahn No. 16. Quitting cattle. Oscar Felton, Blue Mound, Kansas.

TWO OHIO ENSILAGE CUTTERS, AL-most as good as new. Will sell or trade. Nos. 11 and 17 with 36 feet of blower pipe with each. B. F. Erwin, Fairfax, Missouri.

HONEY.

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

POULTRY.

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

COLUMBIAN WYANDOTTE COCKER-els, pullets and fancy pigeons. J. J. Pauls, Hillsboro, Kansas.

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

POULTRY WANTED.

POULTRY AND EGG MARKET HIGHER. Coops free. For prices, "The Copes," Topeka.

Real Estate For Sale

10,000 ACRES of good grazing land, well watered, for \$3 to \$5. All crops good. No drouth, no hot winds. Grass for cattle and corn for hogs. Best country in the world to live and make money.

W. W. TRACEY - ANDERSON, MISSOURI

SEVERAL GOOD HOUSES TO TRADE FOR LAND.

Six farms to trade for Western Kansas land. Wheat farms at a bargain. HEMPHILL LAND CO., Lawrence, Kansas.

WOULD YOU BUY

140 Acres, six miles from McAlester, on terms, for \$4,500, if we show you \$4,500 crop on farm? If so, write

SOUTHERN REALTY CO., McAlester, Okla.

950-ACRE BOTTOM FARM
Four hundred acres in cultivation, 160 acres meadow, balance pasture. Splendid alfalfa, wheat or corn land. Splendid oil possibilities. A fine bargain for some one. Only \$75 per acre. Might take a small farm in on the deal. Write
M. T. SPONG - FREDONIA, 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.

If we were charged so much for sun-sets, or if God sent round a drum before the hawthorns come into flower, what a work we should make about their beauty.
—ROBERT LOUIS STEVENSON.

Canned Fried Chicken

After cleaning and preparing spring frys, season and fry as though preparing for serving directly on the table. Cook until the meat is about three-fourths done. If a whole spring chicken, break the neck and both legs and fold around body of chicken. Roll up tight, tie a string around the chicken, and drop this hot, partially fried product, into hot quart glass jar or enameled tin can. A quart jar will hold two to four small chickens, or from one to three a little larger. Pour liquid from the griddle or frying pan into the container over the chicken. Place rubbers and caps into position, not tight. Cap and tip tin cans. Sterilize in hot water bath two and one-half hours or under ten pounds of steam for one hour. Remove jars and tighten covers.

Cottage Cheese Salad

Cottage cheese, made by heating sour milk gradually over a slow fire until the curd and the whey begin to separate, then straining through cheesecloth to remove the whey from the curd and seasoning the curd with salt, pepper, and cream or butter, is a familiar dish to most housewives. It may be, however, that its use in salad is not quite so general. Nutmeg or a tiny dusting of red pepper sprinkled over the cheese gives it an agreeable flavor, or it may be combined with chopped nuts, olives, cucumber pickle, pimento, or celery, shaped into small balls and served on lettuce with or without a bit of salad dressing. This also makes good sandwich filling.

Dried Sweet Corn

Only very young and tender corn should be used for drying and it should be prepared at once after gathering. Cook on the cob in boiling water two to five minutes or steam eight to ten minutes to set the milk. To improve the flavor a teaspoonful of salt may be used to a gallon of water. Drain well and cut corn from cob, using a very sharp and flexible knife. Cut the grains only half way down to the cob and scrape off any of the chaff next to the cob. Dry from three to four hours at 110 to 145 degrees Fahrenheit, or dry in oven ten to fifteen minutes, spread on trays, and finish drying in the sun. A bulletin giving detailed instructions for the construction of home-made apparatus for drying fruits and vegetables may be obtained either from the extension division of the Agricultural College at Manhattan or from the State Council of Defense at Topeka.

Making Sauer Kraut at Home

If properly handled, sauer kraut of excellent quality can be produced from cabbage at any season of the year. The essential points are the use of only mature, sound cabbage, scrupulous cleanliness throughout the process, and proper care of the surface of the brine after fermentation is completed.

In making sauer kraut for home purposes the outer green leaves of the cabbage should be removed, just as in preparing cabbage for boiling. In addition all decayed or bruised leaves should be discarded and the core removed. Cabbage may be shredded by one of the hand-shredding machines sold upon the market for such purposes, or if such an instrument is not available the heads may be cut into thin slices with a large knife. The core is omitted when machine for shredding is not available, because it is difficult to shred it finely enough with a knife. The shredded cabbage should be packed immediately into a perfectly clean, water-tight receptacle, such as a cider or wine barrel, keg or

tub. Four or five-gallon earthenware crocks are recommended for family use. After opening this quantity of sauer kraut it can be used up before spoilage sets in.

As the cabbage is packed into the barrel or crock, salt in the proportion of one pound of salt to forty pounds of cabbage should be added and distributed evenly throughout the cabbage. Experiments have shown that approximately two and one-half pounds of salt to each hundred pounds of shredded cabbage gives the best flavor to the resulting kraut. When the barrel or crock is nearly full, the cabbage should be pressed down as firmly as possible and covered with a clean board cover. It is advisable but not essential that a clean cloth or, better still, a layer of clean cabbage leaves at least an inch thick, be placed over the shredded cabbage before the cover is put into place. If any spoilage should occur on the surface this layer protects the sauer kraut beneath.

The salt soon extracts a considerable amount of the juice from the cabbage and a sufficient weight of clean brick or stone should be added to cause the brine to rise above the wooden cover. Care should be taken not to use lime or sandstone for weights, for the acid produced by fermentation attacks the lime and destroys the keeping quality of the brine. Tubs and covers made of yellow or pitch pine should not be employed because such woods impart a disagreeable flavor.

The barrel or crock is now set aside and fermentation is allowed to proceed undisturbed. If the weather is cold or the product is stored in a cool cellar, it may take from three to five weeks for the fermentation to be completed. If placed in a warm room, fermentation may be completed in ten days to two weeks. As soon as fermentation starts, a foam appears on the surface of the brine. This is soon followed by a film which develops into a heavy scum if allowed to remain. The scum should be removed by skimming as often as it forms, every day if necessary. This scum feeds upon the acid in the brine and if allowed to grow undisturbed, soon destroys both brine and kraut. As soon as gas bubbles cease arising, the scum should be again removed, if any has formed, and a layer of hot melted paraffin about one-fourth to one-half inch thick should be poured upon the brine.

It is advisable to so adjust the amount of brine used and weights on the cover that the brine comes up to but not over the cover. In this case only the brine exposed between the cover and sides need be paraffined, thus saving covering material. If the paraffin is sufficiently hot to make the brine boil when poured upon it, the paraffin will form a smooth even layer before hardening. After solidifying it will effect a perfectly air-tight seal.

Paraffin has, in comparison with liquid oil, the advantage of ease in handling, and of not coming in contact with the fermented vegetables when they are removed. Further, paraffin can be used over and over and thus the expense is small in the long run. If it becomes dirty it can be heated very hot and strained through cheesecloth or a thin layer of cotton. The one disadvantage with paraffin is that the development of gas below the layer will break the seal. If the paraffin breaks, it should be removed, remelted and replaced. Before adding paraffin the containers should be set where they will not be disturbed until ready for use. Any attempt to remove them may break the seal and necessitate remelting and resealing.

If the material is not opened until cool weather, it ought to keep without spoilage until it is used up. If opened in warm weather, it is likely to spoil quite rapidly unless the paraffin is remelted and the container resealed immediately. If the seal is unbroken, the material will keep indefinitely.

When sauer kraut is made during the fall and stored in a cool place, there is

no absolute necessity of a layer of paraffin, for the low temperature will prevent decomposition. No doubt the popular idea that sauer kraut made from early cabbage will not keep is based upon the fact that the fermentation of sauer kraut made from such cabbage occurs in warm weather and the rapid growth of scum soon destroys both brine and kraut if the surface is not properly protected.

Good Rubber Rings Essential

Poor rubbers have been responsible for more spoilage in canning with screw top jars than any other one factor. O. H. Benson, of the United States Department of Agriculture, has had this brought to his attention and he urges that only rubber rings conforming to standard requirements be used in canning. He describes the standard ring as follows:

"Rubber rings for the average pint and quart jar—glass top, etc.—should not be less than one-fourth nor more than five-sixteenths of an inch wide, and two and one-fourth inches on the inside diameter, and be cut twelve to the inch; that is, twelve rubber rings placed one upon the other will measure one inch in thickness. They should be able to stand

up under sterilization in boiling water or in steam pressure for at least three hours without injury to the rubber. Good rubbers will stretch and return promptly to place without changing the inside diameter. They should also be reasonably firm, and able to stand bending without breakage."

Bread in Disguise

A very appetizing breakfast dish is bread that has been slowly dried and toasted, then crushed with the rolling pin and served with sugar and cream. It will require no effort on the part of the family to eat dry bread served in this way, as it has a delicious flavor and will be relished.

Another way to willingly enlist the members of the family in using dry bread is to dip the slices into a mixture of one cupful of milk or water, one well beaten egg, and one-fourth teaspoonful of salt, and then brown the slices on a griddle or in a frying pan. This fried bread may be served with either syrup or a mixture of sugar and cinnamon sprinkled on it while it is hot.

There are several kinds of patriotism and all are worthy of praise. Men who

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No. 8162—**Girls' Dress:** Cut in sizes 6 to 12 years. It had to be, of course, that Fashion would favor the small girl just as she did mother, and make her new spring dress with a vest and separate belt having the sides lengthened to form pockets. The fronts of the waist are lapped over the vest with left side free for closing, and the fullness is neatly gathered at normal waistline where a two-gore plaited skirt with panel front and back is joined. No. 8143—**Ladies' Shirtwaist:** Cut in sizes 36 to 42 inches bust measure. The well-tailored woman will want this smart blouse for wear with one of the new semi-tailored skirts. The back is cut to extend over to the front, giving the effect of a shoulder yoke, and the waist fronts have their fullness gathered at this point. A broad collar finishes the V neck. No. 8174—**Girls' Dress:** Cut in sizes 6 to 14 years. A charming example of what is good style for a girl up to fourteen years of age. An interesting feature of this design is having the deep yoke and panel in one piece, front and back. The side belt holding the fullness neatly is quite a decorative feature in contrasting goods; the sailor collar and two-button cuffs are attractive in corresponding note. No. 8161—**Ladies' Apron:** Cut in sizes 36, 40 and 44 inches bust measure. The tidy housekeeper of moderate means does not count an apron a thing apart, but one necessary to the complete furnishing of her wardrobe. The favorite style is the bungalow apron and the one pictured will interest every woman because it may be, with few changes, utilized as a dress or negligee. No. 8152—**Ladies' Skirt:** Cut in sizes 24 to 34 inches waist measure. In this four-gore model you have a combination of style features cleverly blended; the new semi-tailored effect, the straight line idea and the favorite yoke effect carried out. The side and the back gores are gathered to the yoke belt and the front gore is in panel effect. The closing is at left side of back under a plait. No. 8173—**Ladies' House Dress:** Cut in sizes 36 to 44 inches bust measure. For appearance and service, this house dress design stands out as one of merit. A plain waist and three-gore gathered skirt are joined at normal waistline under a belt of contrasting goods which is stitched on to neatly hold the fullness; a sailor collar finishing the V neck is of the same material, and long sleeves are cuffed to correspond, but there is a choice of short sleeves.

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take their horses and implements into a neighbor's field and plow his corn while he lies sick, or who put up a neighbor's alfalfa for him while he is busy caring for a sick member of his family, surely deserve to be classed as patriotic. We have heard of several instances of this kind in Kansas this summer.

English Rocks

- 1 1/2 cupfuls brown sugar
- 3 eggs well beaten
- 1 cupful butter, or part lard
- 1 Pinch of salt
- 1/2 cupful milk
- 3/4 pound raisins, chopped
- 3 cupfuls flour
- 1 1/2 pounds English walnuts before shelled
- 1 teaspoonful soda
- 1 teaspoonful cinnamon

Drop with spoon for baking.

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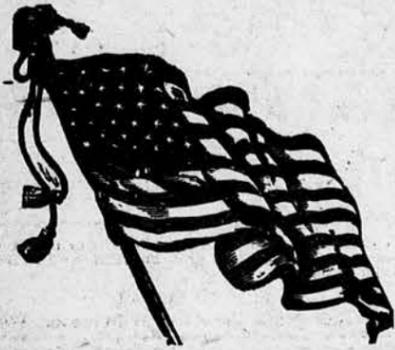


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CULL POOR LAYERS

RIGHT now, during the months of August and early September, is the time for the farmer and poultryman to cull his poor layers. The reasons for culling at this time of year are that the hens are in their best physical condition and will bring higher prices than later in the season. Poor layers, up to this time of year, do not make good winter layers. The cost of keeping drones in the flock cuts the profits and, at this time of the season, the conditions that indicate the producers and non-producers are more in evidence.

The following observations have been checked on trap-nested layers at the state poultry farm and have been found to be reliable:

The good layer moults late and quickly. She has a rough, ragged and frayed plumage until late in the fall. She has been using her food for the production of eggs instead of feathers.

The good layer of the yellow beak, legs and toes varieties will have faded beak, legs and toes at this time of the year. The good layers, so to speak, lay the yellow coloring matter out of these parts.

The good layer, if a white ear lobed variety, has a pale white ear lobe. Heavy egg production retards the storing of yellow coloring material in the ear lobes, as it is used in the yolk of the eggs.

The good layer is wide between the pelvic bones, which are located just beneath the tail. They are thin and pliable and usually show two or three finger widths apart.

The good layer has three to five finger widths between the pelvic bones and the end of the breast bone. This shows capacity, which is correlated with good egg production.

The poor layer moults early and slowly. She has a new coat of feathers at the time of the year when hens are usually culled and because of her better appearance is kept for the winter layer.

The poor layer, because of her non-production, retains the yellow coloring material in her beak, legs and toes.

The poor layer, if a white ear lobed variety, will store the yellow coloring material derived from the feed in the ear lobe.

The poor layer is narrow between the pelvic bones. In this case the bones are usually thick and lack pliability, and are less than two finger widths apart.

The poor layer usually has less than three finger widths between the pelvic bones and the end of the breast bone.—
O. C. UFFORD, in Iowa Agriculturalist.

Prepare for Winter Eggs

Pullets hatched in the spring can be induced to lay more abundantly in the winter if they are properly fed, housed, and handled. On the average general farm very few eggs are secured at the time when eggs bring the highest prices. It will pay the poultry owner, therefore, to devote a little trouble to providing his birds with the most favorable surroundings for the winter.

The house should be thoroughly cleaned, disinfected and made tight before the cold weather sets in. If the house has a dirt floor, it is well to remove three or four inches of dirt from the top and replace this material with dry gravel or sand. On cement or wooden floors four or five inches of fresh straw or litter may be thrown down after the floor has been cleaned.

Ventilation is another important factor to consider. The house should be tight on three sides, but for the fourth muslin curtains may be used for from one-third to one-half its extent. In any case there should be some ventilation in the house, even on the coldest nights. Fowls will stand considerable cold air, provided it is dry, and ventilation will keep the air thoroughly dry in the house. On the other hand, drafts are likely to cause roup and other trouble.

Poultry in Storage

The Bureau of Markets of the U. S. Department of Agriculture sends out the statement that the total stocks of frozen

poultry reported by 210 storages on August 1, 1917, amounted to 48,588,865 pounds, while the total stocks reported on July 1, 1917, amounted to 53,243,568. The reports of 127 storages show stocks of 32,774,632 pounds on August 1, 1917, as compared with 7,031,998 pounds on August 1, 1916, an increase of 366.1 per cent. The reports show that the stocks decreased 14.5 per cent during July, 1917, while they increased 3.8 per cent during July, 1916.

The total stocks of broilers reported by 116 storages on August 1, 1917, amounted to 2,885,220 pounds, while the total stocks reported by 126 storages on July 1, 1917, amounted to 3,769,671 pounds. The reports of 66 storages show stocks of 1,699,368 pounds on August 1, 1917, as compared with 317,435 pounds on August 1, 1916, an increase of 435.3 per cent. The reports of 104 storages show that the stocks decreased 38.2 per cent during July, 1917, while the reports of 58 storages show stocks increased 77.6 per cent during July, 1916.

Skim Milk for Laying Hens

We have frequently advised the use of skim milk for laying hens, knowing it was good for them. But how good is hard to tell without a regular test. A poultryman has just tested the matter to his entire satisfaction. He put sixty pullets in two pens, equally divided, of the same variety and all as near of an age as possible. He fed exactly alike, but gave different drinks. One pen had sweet skim milk and the other had plenty of fresh water. The test was begun on November 1 and accounts were balanced with both pens May 1 following. Those which drank the water had but little over half as much credit for eggs laid, while their feed had cost more than the pen which had the milk. Some days in the very coldest weather the milk pen of thirty pullets laid twenty-eight eggs and their average for January was twenty-four eggs daily. We never feed milk to the exclusion of water, but give our chickens water in addition to the milk, but it seems this poultryman had extra good success by making the pullets drink milk exclusively.

Cure for Scaly Legs

A correspondent wants a remedy for an aggravated case of scaly legs, saying that the usual remedy of coal oil and lard failed to clean the legs. Maybe the inquirer did not apply the remedy long enough. It will take several applications to remove the scales from some fowls' legs. It should be applied two or three times a week for a month. If you want the legs cleaned in a hurry, a good plan is to anoint them thoroughly with sweet oil in which a few drops of carbolic acid has been mixed, then wrap the legs tightly with a cotton or woolen bandage. After the bandage has been on a few days, take it off and grease the legs again, or if preferred you can leave the bandage on but soak thoroughly with oil and acid. If carbolated vaseline is handy it will take the place of the sweet oil and carbolic acid, as one might if not careful put too much acid in the oil and hurt the fowl's legs.

Give fresh and clean water to the fowls several times a day, and especially let the first drink in the morning be clean water. Water standing over night during warm weather is liable to be full of dust, poison and parasites. These are not good for chickens. Fowls should have all the pure water they can drink, for they drink a great deal in summer and when fresh water is not furnished to them they are apt to drink any foul water they may come across. This is bound to cause trouble by breeding all manner of diseases.

The egg shell is nearly pure carbonate of lime, and lime is found in most of the tissues of the body. It is as absolutely necessary to the hen as air or food. Crushed oyster shells supply lime in a good form cheaply. A hen needs about four pounds a year. In some sections crushed limestone can be used to supply both grit and lime.

POLAND CHINAS

Faulkner's Famous Spotted Polands

The world's greatest pork hog are raised exclusively on

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The largest registered herd of old, original, big-boned, spotted Polands on EARTH.

Spring Pigs Now Ready to Ship, Pairs and Trios No Kin.

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ELKMORE FARM POLAND CHINAS

HOME OF THE GRAND CHAMPION, CALDWELL'S BIG BOB. See show herd at the Topeka Free Fair. Annual bred sow sale February 19, 1918. FRED B. CALDWELL, HOWARD, KAN.

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

OLD ORIGINAL SPOTTEL POLANDS

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

Langford's Spotted Polands.—Last call for early spring boars. Yours for good hogs—T. T. Langford & Son, 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

SPOTTED POLAND BOARS

FOR SALE—Five February boars sired by Spotted Lad and out of Ennis Queen. They are real herd headers, priced at \$40. First check gets choice. C. A. GOOCH - ORRICK, MISSOURI

REGISTERED SHROPSHIRE RAMS

Ten extra large boned yearling Shropshire rams by imported sire, priced to sell. E. E. LAUGHLIN, Bates County, Rich Hill, Missouri

FARM AND HERD NEWS NOTES

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CLAIM SALE DATES.

- Holsteins. Oct. 16—The Nebraska Holstein Breeders' Consignment Sales Co., Omaha, Neb.; Dwight Williams, 103 Bee Bldg., Omaha. Red Polled Cattle. Sept. 4—Milton Pennock, Delphos, Kansas. Polled Angus Cattle. Oct. 4—Sutton & Porteous, Lawrence, Kan. Jersey Cattle. Aug. 22—S. S. Smith, Clay Center, Kansas. B. C. Settles, Sales Manager. Herefords. Oct. 6—J. O. Southard, Comiskey, Kansas. Poland Chinas. Oct. 4—Dr. J. H. Lomax, St. Joseph, Mo. Sale at farm near Leona, Kansas. Oct. 13—Arthur Anderson, Clyde, Kansas. Oct. 16—H. B. Walter & Son, Effingham, Kansas. Oct. 17—Walter B. Brown, Perry, Kansas. Oct. 24—Fred G. Laptad, Lawrence, Kansas. Nov. 6—Ross & Vincent, Sterling, Kansas. Nov. 6—U. S. Byrne, Saxton, Missouri. Nov. 7—H. E. Myers, Gardner, Kansas. Feb. 18—Deming Ranch, Oswego, Kansas. Feb. 19—Fred B. Caldwell, Howard, Kansas. Feb. 20—Bert E. Hodson, Ashland, Kansas. Sale at Wichita. Feb. 20—B. E. Hodson, Ashland, Kansas; sale at Wichita. Feb. 21—E. J. Erhart & Son, Ness City, Kansas; sale at Hutchinson. Feb. 22—F. Olivier & Son, Danville, Kansas. Feb. 23—V. O. Johnson, Aulne, Kansas. Spotted Polands. Oct. 19—Fred Rhodus, Excelsior Springs, Missouri. 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. Durocs. Oct. 20—O. W. Long, Maitland, Missouri. Oct. 24—Fred G. Laptad, Lawrence, Kansas. O. I. C. Hogs. Sept. 4—Milton Pennock, Delphos, Kansas. C. W. Chandler, of Kellerton, Iowa, owner of one of the great flocks of Shropshire sheep in that state, reports his flock doing well. A feature of the flock at this time is the fine lot of young stock sired by the champion ram of the Iowa State Fair, 1916; also a number of imported Buttar rams.

POLAND CHINAS.

E. D. King, Burlington, Kansas, owner of one of the good flocks of Rambouillet sheep, reports his flock doing well. Mr. King has been breeding this popular breed of sheep for years and has found them very profitable. A feature of his flock at this time is the choice lot of young stock of breeding age.

The Wilver Dell Poland China sale was held August 16, as advertised. The sale was attended by a large number of breeders from several states and the thirty-five sows catalogued sold for an average of \$153.28. The top price of \$350 was paid for No. 1 in the catalog—a Queen of Wonders sow—by H. E. Myers, of Gardner, Kansas. Mr. Myers is the owner of the dam of the sow, Patsy Defender, and also has a full sister of this sow in his herd. This line of breeding is very popular at this time and Mr. Myers is to be congratulated on making such a valuable purchase. The entire offering was a very high class lot of brood sows and the prices received were very satisfactory to Mr. Head and Mr. Moore.

E. E. Laughlin, of Rich Hill, Missouri, owner of one of Missouri's fine flocks of registered Shropshire sheep, reports his flock doing fine. Mr. Laughlin has been breeding Shropshires for years. His flock was started with foundation stock from the very best flocks in the country and he has owned and used a number of imported rams. At this time he has a very fine lot of young stock, including a lot of choice rams.

Homan & Sons, of Doyle Park Stock Farm, Peabody, Kansas, are among the successful breeders of pure-bred Shropshire sheep in this state. They also breed Percheron horses, Shorthorn cattle and Duroc hogs, but have found their Shropshires the most profitable stock on their farm. Their flock is one of the best in the state and at this time they have a very fine lot of young Shropshires sired by their undefeated show ram.

James Magee, of Magee's Dairy, Chanute, Kansas, reports his Holsteins making a fine record at this time. A feature of his herd is the choice lot of young cows and heifers bred to freshen in from thirty to sixty days. He also has thirty head of choice 30-month-old heifers that will freshen in November and December. Mr. Magee owns one of the heavy producing herds, headed by one of the best sons of King Segis Pontiac.

H. L. Faulkner, of Jamesport, Missouri, held a very successful sale of old original big-boned Spotted Polands August 15. As usual buyers were present from a number of states and the offering, consisting mostly of spring pigs, sold for an average of \$53.38 per head. While no records were made, the prices ranged very even on the entire offering.

C. E. Wood, of Forest Hill Farm, Topeka, owner of one of the choice flocks of Cotswold sheep in the state, reports his flock doing well. Mr. Wood recently added to his flock four ewes and a yearling ram from one of Michigan's leading flocks. The animals purchased were shown at all of the leading eastern fairs. One of the ewes was grand champion in her class at the Ohio, Illinois and Indiana state fairs. He has also purchased two ewe lambs from a leading Wisconsin flock. These lambs are out of imported ewes from a number of Missouri's leading flocks. Mr. Wood will be at the leading fairs again this year with his show flock.

One of the great herds of Ayrshire cattle in this country is the South Farm herd at Willoughby, Ohio, owned by John Sterwin, of Cleveland, Ohio. This great herd consists of 300 head. Seventy-five of them are imported and 145 cows in the herd have qualified for advanced registry. It is one of the richly bred Ayrshire herds now assembled.

Clean Fusible Safety Plug

Replacing burned-out safety plugs with bolts instead of with new fusible plugs is one of the common causes of explosion in tractor boilers, according to the department of agricultural engineering of the University of Nebraska. A careful examination and clean-up of the plug is recommended at least once during the threshing season. To make the clean-up thorough, remove the plug and scrape off the scale-like deposit on the top of the plug. This done, low water in the boiler will not result in an explosion, but will merely mean melting the plug to allow the steam to escape into the fire box.

SITUATION WANTED.

EXPERIENCED MARRIED MAN WANTS job on farm or ranch September 1. Earl Miller, 103 The Drive, Topeka, Kansas.

EXPERIENCED FARMER AND STOCKMAN wants job on farm with everything furnished, as manager or on shares. Address Box 52, Jetmore, Kansas. M. R. A.

HOLSTEIN CATTLE.

CLYDE GIROD, At the Farm

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

Why not buy pure-breds when you can get them at near-grade prices? WE HAVE THEM from three-months-old heifer and bull calves to matured cows, all with exceptionally high class breeding. Finely marked and good individuals. Also grade cows and heifers. Write for description and prices or, still better, call at farm and inspect them. T. R. MAURER & COMPANY - EMPORIA, 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.

DUROC JERSEYS.

15 Duroc Spring Boars

Sired by Illustrator O'Rion 3d and Fancy Victor and out of my best herd sows. They are real herd prospects, selected from \$1 pigs raised. Write today if you want a good spring boar.

John W. Pettford

Route 1 Saffordville, Kansas

DEMING RANCH QUALITY

BIG-TYPE POLAND CHINA HOGS.

See our show herd at Topeka Free Fair, Kansas State Fair at Hutchinson, and Oklahoma City. Fifty spring boars for sale. Six hundred head in herd to select from.

H. O. Sheldon, Herd Manager OSWEGO, KANSAS.

Buy a Boar of Anderson

Durocs from the Royal Herd Farm have always made good. Yearling gilts bred to the great boar, "Proud Chief," for September farrow. Write me your wants or visit my herd.

B. R. ANDERSON, Rte. 7, McPherson, Kan.

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

McBRIDE'S DUROCS

Four-months-old boars for sale. Good ones. Tops, \$25, if taken at once.

W. T. McBRIDE - PARKER, KANSAS

CHERRY CHIEF DUROCS

I still have a choice lot of March and April pigs, priced to sell. All immuned. Plenty of length, size and bone.

A. S. GRABLE, JR. - DEARBORN, MO.

LONE TREE DUROC FARM

Herd Boar Graduate Prince by Graduate Col. Sows, Ohio Chief, Tattarax, 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.

SHEEP.

A LIFETIME EXPERIENCE proves the Rambouillet the best sheep for Kansas. Stock for sale. E. D. KING, Burlington, Kansas.

DOYLE PARK SHROPSHIRE

Sixty Registered Shropshires—Thirty ewes and ewe lambs, thirty rams and ram lambs. Lambs sired by our undefeated ram, Ohio and Michigan, 1916.

HOMAN & SONS - PEABODY, KANSAS

FIVE EXTRA GOOD HAMPSHIRE RAM LAMBS

Priced right if taken in the next two weeks. L. M. SHIVES, ROUTE 1, IUKA, KANSAS

RAMS Registered Shropshires, bred for WEIGHT and WOOL. Our aged ram was champion 1916 Iowa State Fair. Imported Buttar rams. Also 100 ewes. C. W. CHANDLER, Kellerton, Ia. Above Kansas City.

ERWIN'S SHROPSHIRE

Registered Shropshire Rams and registered Jacks and Jennets for sale. B. F. ERWIN - FAIRFAX, MO.

FOR SALE—Ten registered Shropshire ewes, fifteen registered Shropshire buck lambs, ten pure-bred unregistered Shropshire yearling bucks. K. HAGUE, Route 6, NEWTON, KANSAS.

HOLSTEIN CATTLE.

F. W. ROBISON, Cashier Towanda State Bank

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

High Grade Holsteins

YOUR CHOICE OF 65 HIGH-GRADE YOUNG HOLSTEIN COWS From Three to Six Years Old

Fifty are springing or will be fresh in thirty to sixty days. Nicely marked large dairy type. Heavy producers and high testers. Have records as high as 610 pounds of butter in one year from cow testing association.

ALSO THIRTY LARGE 30-MONTHS-OLD HEIFERS

From high producing dams, due to freshen in September to December and forty thirty long yearlings. All stock tuberculin tested regularly by the state. Herd headed by one of the best sons of KING SEGIS PONTIAC.

Magee Dairy

CHANUTE - - - 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 Copla Champion, whose dam and sire's dam each held world's records in their day.

H. B. COWLES, 608 Kan. Av., Topeka, Kan.

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

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

HOLSTEIN CALVES

Very high grade heifer calves, five weeks old, nicely marked, \$25 each delivered to your station. We can supply you with registered or high grade Holsteins, any age or number, at reasonable prices. Clover Valley Holstein Farm, Whitewater, Wisconsin.

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

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.

AYRSHIRE CATTLE.

SOUTH FARM AYRSHIRES

300 HEAD.

75 Animals Imported from Scotland. 143 cows have qualified for advanced registry.

Males and females for sale.

SOUTH FARM

WILLOUGHBY - - - OHIO

When writing to KANSAS FARMER live stock advertisers, please mention this paper.

The Truth About Tractor Lubrication

By Those Who Know

THEORY has its place in any scientific equation. But for everyday purposes we must rely on practical experience. Recommendations by the Standard Oil Company must be correct, not only in theory but backed up by practical, every-day experience under working conditions.

Your tractor pulls a terrific load. The working temperature of your engine is extreme, whether you burn gasoline or kerosene for fuel.

You must have an oil that will maintain its viscosity under any and all conditions. If it doesn't, metal will touch metal and there is trouble—serious trouble—more expensive than your lubricating oil for several seasons will amount to.

Crookston, Minn., June 28, 1917
To Whom It May Concern:—

Considerable advertising has been done by a great many Oil Companies, stating the amount of saving, etc., which could be made through the use of high priced lubricating oil, and as I am the owner of a Big Four—four cylinder—30-60 Gasoline burning tractor, I was interested in finding out whether high price had anything to do with high-quality, so decided to have a test made.

June 26th I filled my engine crank case with an oil retailing in Crookston at 65c per gallon when purchased in barrel quantities, and which is the oil recommended by the company manufacturing it to be the proper oil for summer use in a 1915 model, Big Four 30-60 tractor.

I ran the tractor myself, pulling the same load under exactly the same conditions as those previously encountered while using Stanolind Gas Engine Tractor Oil, and although there was practically no difference in the weather temperature, it only took two hours work pulling a 30-inch, Model A, Russell Elevator Grader until the temperature of the cooling system had risen 50° higher with the 65c oil than when using Stanolind Gas Engine Tractor Oil.

It is needless to say that with this difference in temperature of the cooling system more gasoline and lubricating oil was used. I, therefore, feel that I can conscientiously recommend Stanolind Gas Engine Tractor Oil, even though it is much cheaper in price, to all operators of Big Four 30-60 Gasoline Burning Tractors.

My tractor was purchased during the season of 1915, and since that time to date I have plowed 1800 acres, broke 475 acres, and have pulled a heavy road grader more than 800 miles in the construction of roads. I have never found it necessary to overhaul the motor as the compression is good and the tractor has plenty of power.

With the exception of one barrel of lubricating oil, I have never used other than Stanolind Gas Engine Tractor Oil manufactured and sold by the Standard Oil Company of Indiana, which is selling today at 29.4c per gallon F. O. B. Crookston.

Yours very truly,
E. A. McCoy.

A High-Priced Oil Does Not Mean The Best Oil

There are lubricating oils on the market which sell for double the price of Stanolind Gas Engine Tractor Oil, Standard Gas Engine Oil and Polarine.

But these latter oils are made by the Standard Oil Company (Indiana) and for that reason can be, and are sold, at a low price.

They are made especially for tractors. They are the results of exhaustive and extensive research work on the part of the most complete assemblage of lubricating experts who have devoted their lives to the solution of lubricating problems. These men recommend Stanolind Gas Engine Tractor Oil for tractors using kerosene; Standard Gas Engine Oil for tractors burning gasoline—and Polarine in various grades for tractors having high speed motors.

They Say—

that these oils add power and life to your motor; that they are of great durability and economical in use; that they lubricate thoroughly even the remotest reciprocating surfaces, reducing friction to a minimum; that they maintain their viscosity even under extreme heat conditions to practically the same degree as the so-called heavy oils.

What Leading Tractor Builders Say—

The International Harvester Company recommends Stanolind Gas Engine Tractor Oil for their tractors. J. I. Case Threshing Machine Company recommends Stanolind Gas Engine Tractor Oil for their tractors, as do numerous other manufacturers recommend one or the other of these superior lubricating oils for their respective tractors.

And the letter from Mr. E. A. McCoy of Crookston, Minn., at the left, needs no comment. If you go to a physician you accept his diagnosis—you don't dispute the judgment of a lawyer on legal matters. Accept the united recommendation of the largest manufacturers of tractors, of the largest refiners of oil, of the best petroleum research men, and an enthusiastic tractor owner.

Made, Recommended and Guaranteed by the
STANDARD OIL COMPANY
(Indiana)

72 W. Adams St.

Chicago, U. S. A.

Table of Tractor Specifications and Cylinder Oils Recommended

Key S. G. E. Standard Gas Engine Oil
G. T. Stanolind Gas Engine Oil
Pol. Polarine
E. H. P. Extra Heavy Polarine

Advance Rumely—		
Oil Full	80-90	G.T.
Gas Full	15-30	G.T.
All Purpose	8-16	G.T.
	19-24	G.T.
Allis-Chalmers	10-18	H.P.
Allwork	19-25	G.T.
American	20	S.G.E.
	80	S.G.E.
" Oil Tract.	20-35	G.T.
Andrews	10-20	Pol.
A & T	18-36	E.H.P.
A & T	25-50	E.H.P.
A & T	30-60	E.H.P.
Avery	5-10	H.P.
"	8-16	H.P.
"	12-25	E.H.P.
"	18-36	E.H.P.
"	25-50	E.H.P.
"	40-60	E.H.P.
Baby Johnson	27-29	Pol.
Bates	10-20	G.T.
	16-30	G.T.
Bates Steel Mule	30	H.P.
Beeman-Garden	4	G.T.
Best	7-5	G.T.
Big Bull	7-20	S.G.E.
Boring	10-20	G.T.
Brillion	25	S.G.E.
Buckeye, Jr.	8-16	Pol.
Buckeye	40	G.T.
Case	10-20	H.P.
"	12-25	H.P.
"	20-40	G.T.
"	30-60	G.T.
Caterpillar	45-25	G.T.
	75-50	G.T.
Champion	18	S.G.E.
Chase	25-45	H.P.
"	15-25	H.P.
C.O.D.	12-25	G.T.
Common Sense	15-25	Pol.
Creeping Grip	20-18	G.T.
C.T.4	16-23	Pol.
Dakota No. 1	20-25	Pol.
" No. 2	40-45	Pol.
Denning	10-18	H.P.
Dill	22-47	Pol.
Eagle	12-25	G.T.
Emerson L	12-20	H.P.
" Big 4	20-25	G.T.
" Big 4	20-25	G.T.
" Reeves	40-45	G.T.
Fairmont	24	G.T.
Farm Horse	15-25	S.G.E.
Farmer Boy	25	Pol.
Farmobile	12-20	Pol.
Farquahr	4-20	G.T.
	4-40	G.T.
Fitch	25	G.T.
Gray	20-25	S.G.E.
	15-25	S.G.E.
Hackney Auto		
Plows	20-25	S.G.E.
	15-20	S.G.E.
Happy Farmer	8-16	S.G.E.
Hart-Parr—		
Little Devil	23	G.T.
Crop Maker	27	G.T.
Oil King	25	H.P.
Steel King	40	H.P.
Old Reliable	60	H.P.
Hoosier	8-16	Pol.
Huber	20-40	G.T.
	25-70	G.T.
Hume	20-30	Pol.
Hume Jr.	12-18	Pol.
I. H. C.—		
Mogul	8-16	G.T.
	12-25	G.T.
Titan	10-20	G.T.
"	15-30	G.T.
"	20-30	G.T.
Imperial	40	G.T.
Ingeco	10-20	G.T.
Iron Horse	15-25	Pol.
K-C	20	Pol.
Kinnard	15-25	G.T.
Knox	40	Pol.
K-T	12-25	Pol.
Lausen	15-25	H.P.
	20-25	H.P.
Lawter	40	S.G.E.
Leader	12-18	S.G.E.
Leader Jr.	8-18	S.G.E.
Leades	25-40	S.G.E.
Lion		S.G.E.
Little Oak		H.P.
Louisville Avery	10-20	G.T.
Maytag	25	Pol.
Minneapolis	15	S.G.E.
"	20	G.T.
"	25	G.T.
"	40	G.T.
Moline Universal	6-12	G.T.
Morton	60	Pol.
New Age	10-18	Pol.
Neverslip	12-20	S.G.E.
Nilson	40	H.P.
Olin	12-25	G.T.
Paramount		Pol.
Parrett All Pur.	10-20	Pol.
Peoria	8-20	S.G.E.
Phoenix		S.G.E.
Pioneer "50"	20-60	E.H.P.
" Jr.	20-45	E.H.P.
" Pony	15-30	G.T.
Plow Boy	10-20	S.G.E.
Prairie Dog	25	Pol.
Rock Island		
Heider	10-20	G.T.
Russell	12-24	S.G.E.
"	20-40	S.G.E.
"	80-60	G.T.
Sandusky	28	S.G.E.
Simplex	15-30	S.G.E.
Simplicity	25	G.T.
Smith	10-20	S.G.E.
Standard-Detroit	10-20	Pol.
Stewart	40-60	H.P.
Straddle Row		
Universal	85	Pol.
Strait, Model 8		Pol.
		Pol.
Strite		S.G.E.
Sullivan	8-10	G.T.
Tom Thumb	20-12	G.T.
Twin City	15	H.P.
"	25	H.P.
"	40	H.P.
"	60	H.P.
Walte	8-10	G.T.
Wallis (Cub)		G.T.
Waterloo Boy	12-24	H.P.
Wolverine		G.T.
Yuba		G.T.