

# KANSAS FARMER

For the improvement  of the Farm and Home

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The time draws near the birth of Christ;  
The moon is hid; the night is still;  
The Christmas bells from hill to hill  
Answer each other in the mist.

—Alfred Tennyson





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# FARM POWER

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

**S**HORT courses in traction engines, gas engines, blacksmithing, machine shop work, and other subjects in rural engineering are expected to bring more than 300 students to the Kansas Agricultural College January 8 to March 21. Last winter more than 200 persons were enrolled in the rural engineering courses as compared with less than 100 in 1915. Of those who completed short courses in 1915 and 1916 some have increased the yield of their farms by the use of traction engines, while others have increased their earning capacity by working as experts for farm machinery concerns, in automobile repair shops, or as contractors.

That the tractor will entirely supplant horses is a false alarm, says Tractor Farming. The use of tractors does mean that horses will be relieved of the heavy grueling work on the farm, and will have only to do the lighter tasks. As a successful farmer said the other day, as he laid several photographs before a manufacturer of tractors, and pointed out several heavy jobs, such as plowing, disking and harvesting, "I want a tractor which will do that heavy killing work."

## Renew Auto Crank Case Oil

In using the low grade gasoline now being sold, it is absolutely necessary that engines be completely drained and refilled with clean, fresh oil of medium grade at least once every 1,000 miles (preferably every 500 miles in cold weather) says the college of agriculture. Unless this is attended to at regular intervals, quantities of kerosene and water accumulate in the crank case and lead to burnt-out bearings, worn cylinders and pistons, fouled spark plugs, and carbonized motors. No doubt a great deal of engine trouble to be found now is due to the above difficulties.

## Evolution of Motor Car

The first record we have of a vehicle traveling without animal power is found in the ancient Chinese records, which give an account of the kite carriages. These vehicles were driven by the wind blowing against a sail attached to the carriage. In the early reign of King James I of England, a patent was issued to Hugo Upton, reading as follows: "For the sole making of an instrument which shall be driven by the wind for the transportation or carriage of anything by land." Some believe that Upton secured his idea from kite carriages in old China.

However, the history of mechanically-driven carriages dates back to 1680, when Sir Isaac Newton proposed a steam carriage to be driven by the reactive effect of a jet of steam issuing from the nozzle at the rear of the vehicle. Some years later a crude carriage was built, an early record of which reads as follows: "Mr. Pinchbeck has recently built a curious steam machine that has traveled without horses for forty minutes and has covered a considerable distance." In 1759 there appeared an English advertisement reading as follows: "Mr. Ladd's patent four-wheel carriage, that goes without horses and will carry four or five persons at the rate of six miles an hour, is built on solid mechanical principles." In 1802 Richard Trevithick built a steam carriage which was exhibited at London, having driven itself ninety miles. In 1830 a horseless carriage named "The Automaton" was built by Walter Hancock. This was really the first steam carriage that proved at all practical. It covered 4,200 miles during its life and carried a total of 12,761 passengers.

The first internal combustion engine was invented by Abbe d'Hautefeuille in 1678, in which the explosive power of gunpowder was employed to drive a piston in a cylinder. This was the forerunner of the modern gasoline engine. Some years later John Street developed an engine operated by liquid air ignited by a flame. The first internal combustion motor which used gas was invented in 1884 by Gottlieb Daimler. In 1885 he successfully applied this engine to a bicycle, and in 1886 Carl Benz invented

his single horizontal cylinder, water-jacketed engine, which he applied to a three-wheeled carriage. The first practical gasoline automobile built in America was constructed by C. E. Duryea in 1892, but it was found to be underpowered.

In 1894 he built a new four-cylinder car which proved quite successful in the Chicago Times-Herald race. The first automobile endurance race of international importance was held in France in 1894. Two Panhard machines contested. Both claimed a 3.5 horse power and were driven by Messrs. Panhard and Peugeot. In 1895 the second automobile endurance race was held in France and covered a distance of 1,730 miles at the then remarkable average speed of fifteen miles per hour. Six years later, however, the same course was covered at the rate of fifty miles an hour. In 1897, at the Paris-Trouville road race, a speed of twenty-nine miles an hour was developed in a gasoline automobile. What a difference today! Not long ago a 300-horsepower car raced at a terrific speed of 143 miles an hour. Even pleasure cars easily run off fifty miles an hour.

The above history is very interesting, to say the least, and gives the reader a brief conception of the early struggles and development from the one-cylinder loud-puffing machines to the beautiful, easy and quiet-running touring cars of today.—C. S. RIEMAN.

## Earth Road Maintenance

Earth road maintenance now is and will continue for some years to be the real road problem of Kansas, since it is not likely that more than a very small per cent of the highways will be paved in this generation.

Practically all the work done on an earth road, except reduction of grades, correction of horizontal alignment, building of drainage structures, and elimination of railway grade crossings, is temporary and should properly be considered maintenance.

Doing permanent work is a comparatively easy matter, for when once it is done correctly it will last for a number of years. The maintenance of an earth road, however, is a never-ending job. It is like milking the cows and doing other chores, for the builder knows that the work of maintenance will have to be done over and over again and can never feel that it is in any sense permanent.

For this reason the earth road has a bad reputation. The trouble is not so much with the material of which the road is composed as with our system or lack of system of management. Other types of roads when treated as we treat the earth roads are much more expensive and serve the traveling public little if any better. The vast improvement that can be made on our present earth roads by intelligent direction in their construction and maintenance is little realized by the public, and the serviceability of a properly maintained earth road is not appreciated when compared with other types of roads as to cost of construction.

Successful construction and maintenance of any kind of a road depends upon the recognition by the public and the builders of a few fixed and fundamental requirements.

One practical, well-paid road builder should be made responsible for the upkeep of a certain section of road and should be employed throughout the year, his tenure of office being made dependent entirely upon the character of services rendered. The graded portion of the road should be elevated and crowned so that the water from every section of the road surface will flow into the side ditches.—W. S. GEARHART, State Highway Engineer.

During 1915 the total road and bridge expenditures in the United States amounted to about \$282,000,000, of which probably not over \$15,000,000 represented the value of the statute and convict labor.

Farmers will find flaxseed the most profitable crop. More money in it than wheat. Booklet from Fredonia Linseed Oil Works, Fredonia, Kan.—(Adv.)



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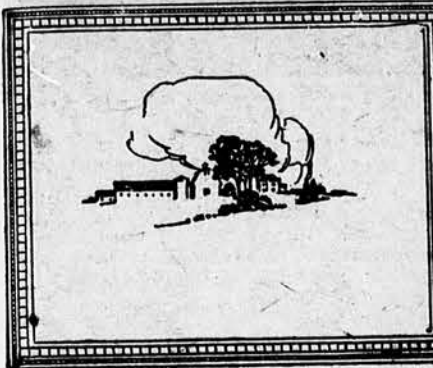
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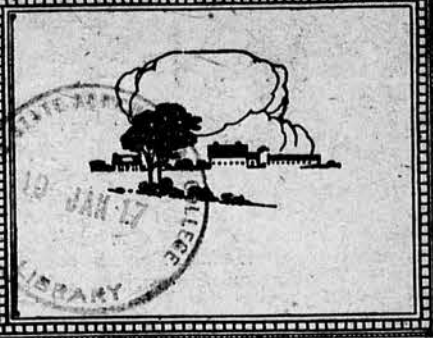
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### EMBARGO WOULD BE ROBBERY

An embargo on grain and other food-stuffs would be a most unwise policy for this government to adopt. It would not only be deeply resented by foreign nations whose needs are great, but would be considered by the producers of this country as most unfair to their interests. The agitation for an embargo is based on the theory that with short crops the world over our home needs must be thus protected. At the Marketing and Farm Credits Congress in Chicago, recently held, Julius H. Barnes, of Duluth, said that there are no signs in our present crop supplies of any curtailment of our own needs, and even if some curtailment should be necessary it would be international immorality to withhold from foreign nations food supplies that we could spare by making some sacrifices at home. He called attention to the fact that we have at times found it necessary to call on Canada for grain, and that it would be most unwise in the time of the great need of other countries to lay the foundation for a resentment that would result in commercial retaliation in the future.

In support of his statement that it would be unfair to the producers, Mr. Barnes said:

"The daily press reports day after day the advanced scale of wages which is being granted to labor out of the present commercial activity of the country, yet industrial workers, who are profiting by a higher wage scale than ever before, now propose to ask the grower to give up his share of the prosperity and accept the normal price for the product of his farm, and skill, and labor, although for everything he buys he must pay a higher price occasioned by the higher labor cost of producing it. It is unfair, it is unwise, and it is immoral, and I do not believe that the bulk of the industrial workers who are the great consumers of the product of the farm would want an unfair advantage of the grower in that way if the factors of the world-wide situation could be plainly put before him, and if his mind could be disabused of the impression created partly by demagogues that the higher prices of farm products are the result of manipulation for private profit and not the result of world-wide play of legitimate commercial factors."

The industrial interests of the country have always profited at the expense of the farmer. His work is not confined to eight hours daily. However great may be the hardships due to the high prices of foodstuffs, placing an embargo on them would be simply sacrificing the interests of the producer for those of the consumer—or, in other words, robbing the farmer for their benefit. Placing an embargo on the export of iron and steel and manufactured articles would, through the decrease in employment, bring about a condition that would lower prices, but this would be getting lower prices by the creation of a panic and universal business depression. Such an embargo would be no more unfair than one on the products of the farm.

### SHELTER BROOD SOWS

No other farm animals suffer more from extremes of cold and heat than do hogs. It is especially important to furnish the right kind of shelter for the brood sows. They can be made comfortable without building elaborate and expensive hog hotels. The important points are that their shelter be warm, dry, well ventilated, and planned so as to let in as much sunshine as possible. Sprinkling lime on the floors will help to keep them in a sanitary condition.

At farrowing time the individual houses supply the best conditions for the sow and litter. Many breeders prefer them to all other types of farrowing houses.

Be prepared to save the pigs. The cost of maintaining brood sows is high because feeds of all kinds are expensive.

Every pig lost reduces the chance for making a profit. The winter cost of maintaining a brood sow that saves only three or four pigs is as great as the maintenance of one saving eight or nine. It is not at all unusual for sows to lose a whole litter where proper provision has not been made for them at farrowing time. With market prices as high as they are likely to be for some months to come, it is more important than ever to save every pig possible.

### STOCK SHIPPERS' RESOLUTIONS

The executive committee of the National Live Stock Shippers' Protective League, which held a meeting in Chicago November 14, is opposing the passing by Congress of legislation that will prescribe rates on railroad shipments wholly within a state. The following resolution was passed by the committee at this meeting:

"We oppose any law or laws which shall take away from the state railroad commissions, corporation commissions or other rate-making bodies of the several states the right and power to regulate the rates and transportation of intrastate traffic, or otherwise to deprive the states of control over the same; and

"We urge upon Congress the passage of an act so amending the act to regulate commerce, as to define and limit the powers of the Interstate Commerce Commission so as not to interfere with the rates on intrastate commerce as prescribed by railroad commissions or other authorized authority of the several states to prescribe and regulate rates and transportation of intrastate traffic within such states; and that the Interstate Commerce Commission shall not interfere with such rates, regulations and practices of such state unless the same shall have first been found to be unjust and unreasonable and to place an undue burden upon interstate commerce, by a court of competent jurisdiction provided for law, and then only to the extent that may be necessary to remove a discrimination specifically alleged and clearly proven to be unjust and unreasonable."

### KANSAS BREEDERS WIN

Among the Kansas breeders at the International were Robert Hazlett, who won first on his aged Hereford bull, Publican 4th, and first and grand championship on the two-year-old bull, Bocaldo 6th; Achenbach Bros., breeders of Poll Durhams, who won first on the aged cow Sultana, first and second on produce of cow, and several other prizes; H. and G. Croft, who won several first prizes on their Galloway herd; and Sutton & Porteous, who showed Angus cattle.

In the carlot classes for the central district, Springer & Johnson, of Riley County, won second on a load of two-year-old Hereford steers that were first at Denver. These cattle were shown on the cover page of KANSAS FARMER of December 9 issue. Dan Casement, also of Riley County, won third on a load of yearlings.

### STOCK BREEDERS TO MANHATTAN

The Kansas Improved Stock Breeders' Association will hold its twenty-seventh annual meeting in Manhattan during Farm and Home Week at the agricultural college, the first week in February. This annual convention has heretofore always been held in Topeka the week of the State Board of Agriculture meeting. This year, after consulting with as many of the members as possible, the officers and directors decided to hold the 1917 session in Manhattan. Many of the breeders of pure-bred stock in the state are desirous of visiting the agricultural college at this time in order to look over the flocks and herds of the Animal Husbandry Department and meet the many people who gather there during this week.

February 8 will be the day given over to the program of the Improved Stock

Breeders' Association. "The Product of the Grade Herd" is the subject of the address that will be given by Dan D. Casement, a farmer and stockman of Riley County. Prof. R. K. Nabours will give an illustrated lecture on "The Bovine Family and Its Domesticated Forms." E. N. Wentworth, professor of animal breeding at the college, will give an address, "Some Problems in Cattle Breeding." "From Range to Feed Lot" is the subject that will be presented by John Clay, of Clay, Robinson & Company, Chicago, Illinois. He will also give a second talk on "The Outlook for the Live Stock Breeder." R. H. Hazlett, of El Dorado, will tell of "The Breeding of the Grand Champion." Prof. W. A. Cochel, head of the Animal Husbandry Department of the college, will speak in the judging pavilion on the "Breeding of Pure-Bred Cattle," illustrating his address with examples from the college breeding herd. The day will close with a grand parade through the judging pavilion of the breeding and show animals of the different kinds owned by the college.

This opportunity to see the animals owned by the state, many of them bred on the college farm, will add to the interest of this meeting of the Improved Stock Breeders' Association. The work being done in live stock improvement in Manhattan is of the greatest importance to every breeder in Kansas, and the coming meeting should be a most profitable one. There will be opportunity for holding a business session, and the headquarters for visiting stockmen will be maintained in Room 10 of the agricultural building.

### NITROGEN FROM THE AIR

A project for establishing an air-nitrate plant is now under way in the United States. While it is under the direction of the war department of our government, our agricultural interests are directly concerned because nitrates for fertilizing purposes are now being imported at great cost from Chile in South America. The National Grange and the Farmers' Educational and Co-operative Union were largely responsible for the act of Congress authorizing this project. It is expected that the plant will be located at Muscle Shoals on the Tennessee River in Alabama.

The process consists in taking nitrogen directly from the air by the use of electricity and of course requires a location where there is plenty of cheap power. Coke and limestone are also required in the process.

Nitrogen is an important factor in the making of war materials, but it is as a plant food that it is of greatest importance to mankind. The government is now definitely committed to the plan involving the domestic manufacture of nitric acid. This process of taking the nitrogen directly from the air by the use of electricity, is being practiced in Germany, France, Norway, Italy, and other European countries. It is claimed that the cost of nitrogen for fertilizer can be reduced one-half by this process.

National Grange Lecturer Edward E. Chapman suggests the following "headliners" for grange discussion this winter. Of course a great many topics may be secured from each of the things suggested. All the following are important things to discuss in the grange meeting, and the community where these are well discussed will be a better informed community than otherwise: Agricultural co-operation, agricultural pests, plant diseases, labor supply and wages of farm labor, influence of farm machinery on production and labor, agricultural laws and legislation, handy farm devices and how to make them, farm machinery, agricultural education in the public schools, farm water supply and sanitation.

The destruction of grasshopper eggs by fall or winter plowing, disking, and harrowing is recommended when practicable.

### BOARD OF AGRICULTURE PROGRAM

Speakers not previously announced who have been engaged for the annual meeting of the Kansas Board of Agriculture, January 10-12, next, at Topeka, are: W. R. Mellor, secretary of the Nebraska Board of Agriculture; George Marble, of Fort Scott; A. L. Stockwell, of Larned; Z. G. Hopkins, of St. Louis, and Charles M. Sawyer, of Kansas City. Mr. Mellor is a recognized authority on the agricultural fair, and he will speak on that subject, with a view to assisting in the upbuilding of these useful institutions in Kansas. George Marble has made an extensive investigation into the methods of successful dairying in Wisconsin with special reference to their application to Kansas. He will tell of his findings and also describe recent activities of his community in promoting cow culture, where results have been marked. The message of A. L. Stockwell will be on behalf of more sheep for Kansas. He is eminently practical, having handled sheep with profit in Kansas for years. He believes sheep should take a large place in husbandry, and he is going to tell the meeting why. Mr. Hopkins is a representative of the Katy Railroad. His topic, "Relation of Transportation to Agriculture," is one of general interest and will involve a discussion of this year's car shortage, and cause and remedy. Charles M. Sawyer, who is governor of the Federal Reserve Bank, at Kansas City, believes that farmers do not understand properly the value of that institution to agricultural interests, and it is his mission to make plain the functions of the Federal Reserve Banks and how they are helpful to the farming industry.

This year the customary Friday night session ending the meeting has been eliminated. Instead at 6:30 that evening the Topeka Chamber of Commerce will tender a complimentary banquet to those attending the convention. This will close the program. Opportunity will thus be given to get acquainted with one another, under enjoyable conditions. It will promote good fellowship and fraternity.

### MORE DAIRYING IN KANSAS

That the Kansas farmers are coming to a better appreciation of the milk cow is indicated by the increased number of dairy animals in the state, as reported to the State Board of Agriculture by assessors.

The enumeration this year, which has just been compiled, shows that Kansas has for the first time more than one million milk cows. The exact number is 1,077,067, a gain of 115,786 over the count of 1915. Since 1910 the increase is 435,497, or 67 per cent. Butler leads all other counties with 19,623, followed by Barber, Dickinson and Reno with more than 18,000 head each.

Commenting on this showing, J. C. Mohler, secretary of the Board, said:

"This is a most encouraging sign. It means more farmers are engaging in this high type of husbandry. Dairying is one of the marks of enlightened progressive and prosperous agriculture. The dairy method of farming more nearly eliminates chance as a factor in the farmer's income. The dairyman is a soil builder, rather than soil robber. He is conducting a farm factory, converting the raw materials of his farm into finished products, without seriously depleting its resources.

"It is my belief that the inclination of our farmers to take up dairying, as indicated by the returns, is the reflection of a tendency to place the business of farming on a safer, sounder basis, and should insure a more permanently prosperous agriculture in the future. It appears, in the evolution of Kansas, that we have arrived at that stage when the milk cow is to be relied upon more extensively. In the new order of things she fits admirably. And nowhere, perhaps, are natural advantages more favorable for successful dairying than in the Sunflower State."



# KANSAS PEDIGREED WHEAT

*Work of Years Has Developed Higher-Yielding Strain Than Yet Grown*

**F**IFTEEN years is a short time in agricultural history, but it is a long time in the life of a man. Fifteen years ago, Prof. H. F. Roberts came from the Washington University in St. Louis, to the Kansas State Agricultural College as head of the Department of Botany, and at the request of the board of regents of the college, immediately entered upon the work of improving wheat by breeding.

Today the results of Professor Roberts' labors are seen in the first pure-bred wheat of his origination, and which is being recommended by the Kansas Experiment Station for planting all over Kansas, because of the fact that it yields four bushels more per acre than any other wheat known or grown in the state. The statement is made by L. E. Call, Professor of Agronomy of the Kansas Agricultural College, that if this wheat known as "P-762" had been generally grown in Kansas for the past three years and if its yields had corresponded to the averages obtained on the station farm, and in fifty-nine co-operative tests on twenty-nine different farms over the state, it would have added \$62,845,000 to the income of the farmers of Kansas.

#### REAL BREEDING WORK BEGINS

There was no cereal breeding work being conducted at the Kansas Experiment Station in 1901, when Professor Roberts took charge of the Department of Botany. There was some variety testing, but no breeding. During the years 1901 to 1905, Professor Roberts gathered from all parts of the world, hundreds of com-



H. F. ROBERTS, HEAD OF DEPARTMENT OF BOTANY, KANSAS AGRICULTURAL COLLEGE

mercial varieties of wheat, and these were planted in trial plots. A great deal of painstaking work was also done in attempting to produce new varieties of wheat by crossing. By 1905, however, Professor Roberts had become convinced, from his survey of the wheat situation, that at that time the most promising and practical way to improve the wheat crop by breeding, lay in the selection of pure-bred races of wheat, and by beginning with a single head in each case, so as to insure absolute purity of each strain. To Professor Roberts, every field of wheat is like a great population, in which there are many individuals and many families—some good, some mediocre, and some bad. The problem in breeding by selection is to find these good individuals or families and save them.

#### MISTAKES OF EARLIER BREEDERS

Some of the early breeders of wheat, such as Patrick Shirreff in Scotland, and Professor Hays in Minnesota, had sought to improve wheat by selection, but the limited success attained by them was not particularly encouraging. There was something wrong with their method of operation. Professor Roberts felt that the key to the situation was not only in beginning with a single head of wheat in every case, but in taking a very large



GENERAL VIEW OF WHEAT-BREEDING PLOTS IN 1907 WHERE P-762 WAS GROWN FOR THE FIRST TIME

number of different heads from a very great number of different wheat varieties at the outset, and then in keeping all these different selected strains absolutely pure, until, by the most rigid nursery and field tests, the best should show itself.

#### MANY HEADS SELECTED IN START

It is plain that in undertaking such work, to begin with large numbers gives the best chance for success. Professor Roberts foresaw the necessity for starting with a very large number of pure-bred wheat strains selected from a very wide variety of sources, and consequently he succeeded. Others who had not taken this precaution had failed.

In the spring of 1906 there were nearly 200 varieties of wheat growing in the plant-breeding grounds—varieties which had come from almost every wheat-growing country in the world. From 181 of these varieties, Professor Roberts, during the week July 13 to 20, inclusive, selected no less than 537 different heads of wheat, to each of which as selected, a number was given, and this was entered in his field book with a brief description.

It was on June 15, 1906, that Professor Roberts selected the particular head of wheat that he numbered 762, prefixing the letter "P" afterwards, to indicate the "pure-bred" or "pure-line" series of wheats. This one head, bearing twenty-six grains, was the progenitor of the now famous experiment station wheat of that number, and for which the Department of Agronomy is now in search of a name.

It might be mentioned that the old wheat series of the Department of Botany ended with No. 628, so that the new "pedigreed" or "pure-line" wheats of 1906 began with No. 629, and so Professor Roberts had already from June 13 to June 15, selected, numbered and described 133 wheats before he came to the head which he selected under the number "762." The value of following out the policy of selecting large numbers now becomes apparent. Suppose he had selected only 132 wheat heads! As it was, however, he went on selecting until the last number in his field book for that year was 1185.

#### SELECTION NOT HIT OR MISS

It should be stated that Professor Roberts selected his wheat with a definite character in view in the case of each plant selected. His idea was not to get

representative heads from each variety, and to endeavor thus to preserve each variety pure. Paying no regard to the matter of varieties, and seeing that there were usually several different types of wheat in each variety, he selected the heads of those plants which seemed to show desirable characteristics, without regard to whether they corresponded in type to the standard of the variety from which they came or not, taking care, however, not to be misled by temporary thriftiness due to accidental conditions in the plot. The process of selection, when followed out in this way, is slow, tedious and careful work, calling for much judgment, weighing of probabilities, and considerable knowledge of wheat. Of course, not all such selections will come true. Professor Roberts knew that. There are scientific reasons for this that cannot be taken up here. However, he did know that there were also scientific reasons for believing that probably, on the average, about half of them ought to come true. Therefore the necessity for the careful selection of large numbers to begin with.

#### ACCURATE RECORDS NECESSARY

In selecting so many heads of wheat, it was impossible to go into many details of their description in the field. That had to be reserved until the heads were brought into the laboratory. Professor Roberts consequently decided to limit the field notes to the following: A general description of the type of each wheat head, to be indicated by a code letter; a statement as to whether the plant from which the head was selected, was early, medium, or late, as compared with the rest of the plants of the variety from which it was taken; and a measurement of the average width of the leaves of the plant from which the head was taken, for the reason that narrower leaves often go with hardier wheats.

Accordingly, we find, opposite "762" in Professor Roberts' field book, the following entry: "ex. 256 E. ey. 8," which means "from variety No. 256. Turkey type, early, leaves eight millimeters wide."

#### EARLY FROM THE START

It is interesting in this connection to know that it is said of "P-762" today that it is from three to five days earlier than ordinary Turkey, and to note further that in Professor Roberts' original record, made when he selected this wheat

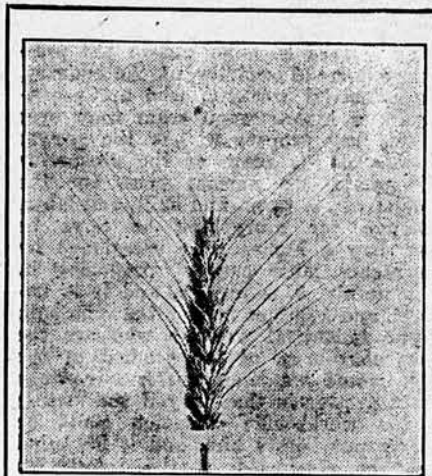
on June 15, 1906, that it was early, as compared with the rest of the plants of the variety. What was this variety, bearing the number "256" and from which "P-762" came? It was a plot of Crimean wheat from the Don territory in Russia, introduced into this country by the United States Department of Agriculture, and bearing that department's cereal introduction number "1435." This Crimean variety was what is known as the "Turkey" type of wheat—a bearded wheat with slender heads, smooth white chaff, and hard red grains.

Now this particular Crimean variety was planted September 29, 1905, and was ripe June 19, 1906, whereas Professor Roberts selected the ripe head that he numbered "762" from this same plot on June 15, or four days before the plot as a whole was ripe. In view of the fact that wherever grown, "P-762" is four or five days earlier than ordinary Turkey wheat, this incident in its early history is interesting.

#### MAKING YIELD TESTS

The records show the following yields for this remarkable new wheat: In 1906, the original head selected bore 28 seeds; in 1907, 86 heads harvested bore 1,467 seeds; in 1908, 250 plants in one 33-foot row bore 11.43 ounces or about 13,000 seeds; in 1909, 2,500 plants in ten 33-foot rows bore 10 pounds and 14 ounces, or about 221,000 seeds.

In 1908, all of the pedigreed wheat which had originated from the single heads selected by Professor Roberts, were given their first nursery row yield tests. The rows were 33 feet—one-half



TYPICAL HEAD OF CRIMEAN VARIETY FROM WHICH P-762 WAS SELECTED

chain—long, and 250 kernels spaced equal distances apart, were planted in each row. The rows of the different pedigreed wheats alternated with rows of the Kharkov wheat similarly planted, the Kharkov being at that time the best and purest variety of wheat grown at the station, although not strictly pure-bred. It turned out that the row of "P-762" yielded 30 per cent better than the average of the two adjoining Kharkov rows, 32 per cent more than the average of the 33 Kharkov rows in the same plot, and 25 per cent more than the average of all the rows of other pedigreed wheats in the same field plot.

In 1909 the planting was done in exactly the same manner, except that instead of one row of each of the pedigreed varieties, there were ten, with their corresponding rows of Kharkov. "P-762" gave a yield that was 24 per cent better than the yield of its check rows of Kharkov, and 36.6 per cent better than the average yield of all the 636 Kharkov rows in the field.

There is not room here to tell of the complete and elaborate system of plant breeding records which Professor Roberts devised for his wheats. The records for "P-762" for 1907, alone, cover eighty-six pages. Nor can we tell of the scientific system whereby its hardness and that of all his other wheats, was accurately determined.

When Professor Roberts selected the head of "762" he also selected two other heads from the same plot of Crimean wheat. These he numbered "761" and "763." By 1909, No. 763 had been dis-

761 Ex 256 E med 10  
762 Ex 256 E ey 8  
763 Ex 256 E taller, later, with blue bloom on stem & glumes

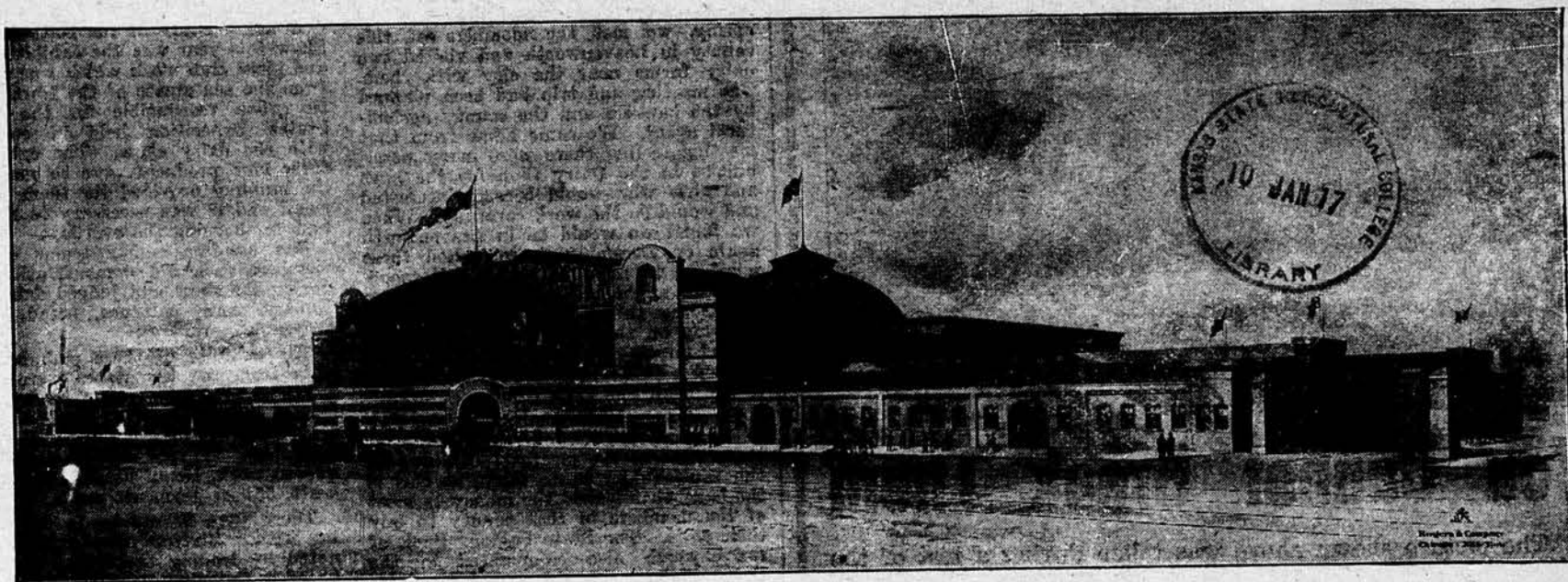
EXTRACT FROM FIELD NOTE BOOK

(Continued on Page Nine)



# INTERNATIONAL BIG SUCCESS

*Greatest Show of Fat Stock and Breeding Animals Ever Made—By R. C. Obrecht*



INTERNATIONAL STOCK SHOW JUST HELD IN THIS BUILDING WAS A RECORD-BREAKER IN NUMBERS AND QUALITY OF EXHIBITS, ATTENDANCE, PRICES, AND GENERAL INTEREST.—GRAND CHAMPION STEER BROUGHT \$1.75 A POUND, CHAMPION CARLOAD 28 CENTS

**A**FTER a lapse of three years, the greatest live stock show ever held was successfully staged in the International Amphitheater at the Union Stock Yards, Chicago, December 2-9, 1916. The holding of this great show is an annual event but owing to the outbreak of foot-and-mouth disease in 1914 and the quarantine against live stock still operative in certain states in 1915, there has not been an International show held since December, 1913. In spite of the recent scare which threatened to tie up the live stock industry again, the show of 1916 caps the climax as the greatest ever held in the history of live stock shows, both from the standpoint of exhibits and attendance. To recount the events of this great show requires a continued use of superlative adjectives.

The show opened on Saturday with a students' live stock judging contest as the principal attraction. Teams of five students each were entered from fifteen different colleges, which is a greater number than ever before participated in this event. The highest honors were carried off by the boys from Purdue University, Lafayette, Indiana; second place went to Iowa State College boys at Ames; third to Ohio, fourth to Texas, and fifth to the Kansas Agricultural College.

There were 1,470 entries in the beef cattle classes and 1,110 draft horses, both of which is the largest number in the history of the show, and these figures do not include the cattle in the carlot entries and those entered in the auction sales of the different breeds, nor the light horses which participated in the horse show events of the evenings' entertainment. The Shorthorns were particularly strong this year and put up a stellar exhibit, as did also the Percheron horses. There were not quite as many sheep and swine entered as at some of the previous shows, but it was generally conceded that the quality of the exhibits was the best ever. So far as is known, none of the Kansas exhibitors were kept away by the fear of foot-and-mouth disease or by the embargo. The special train made up for hauling the Kansas live stock to Chicago made a record run from Manhattan in twenty-seven hours—about one-half the usual time required for live stock trains.

Many of the exhibits of this show were particularly striking because of their educational features. More agricultural colleges than ever before made exhibits of live stock, and many of the animals shown had been bred and fitted by the institution making the exhibit. Because of the increased number of agricultural colleges exhibiting and participating in this great show, and the stellar honors carried off by them, this might be called college year at the International.

It fell to the lot and good fortune of the University of California to carry off perhaps the most coveted prize in the fat bullock classes. They not only won the grand championship ribbon, but also the reserve champion. It rarely happens that one exhibitor is fortunate enough to carry off both of these prizes, as did the university in this instance, winning with "California Favorite," a cross-bred Hereford-Shorthorn yearling steer, defeating his stall mate, "California Jock," an Angus two-year-old that was grand champion at the Panama-Pacific Exposition and reserve champion in this show. Neither of these steers ever tasted a grain of corn, which many feeders think necessary in fitting cattle for show. After winning his laurels the grand champion steer was auctioned off and sold for \$1.75 a pound, netting the University of California \$1,977.50.

To use a slang expression, our own agricultural college at Manhattan made a "killing" in the Shorthorn steer classes, winning all first and second prizes where they had entries and championship with steers of their own breeding. They also won first on herd prize, winning a total of \$1,453 in cash prizes on cattle alone.

The University of Illinois made its debut this year, breeding all of its entries. It carried off a number of first prizes and a few championships, perhaps the most phenomenal being that of a Southdown lamb. Among other institutions making exhibits were the Universities of Nebraska, Missouri, Wisconsin, Indiana, Ohio, Minnesota, and Notre Dame of Indiana; Iowa State College and Pennsylvania State College. The Ohio State University made a very striking exhibit with sheep, demonstrating practical methods of breeding and feeding. They had used grade range ewes for dams mated with an imported Southdown ram, and won first prize on the pen of lambs from this cross. This contest is to extend over a period of three years, terminating in 1920. Each year the ewe lambs are to be retained and used as dams when yearlings for the succeeding crop of lambs.

Another valuable educational feature was a mammoth wool exhibit occupying a floor space of about 1,000 square feet and all available wall space. The purpose of this exhibit was to teach the desirable qualities of wool and improved methods of marketing. The exhibit was made up of tons of wool in bales illustrating all grades and market classes and conditions in which wool is received, from the poorest to the best, and showed undesirable as well as desirable manner of marketing. A half dozen or more sheep were a part of the exhibit, as well as various stages through which the wool passes before it reaches its final end in being woven into cloth. This exhibit alone was of such a magnitude as would easily consume

a whole day's study. The extension department of the University of Illinois made a very interesting exhibit illustrating graphically by means of enlarged photos, charts, drawings, small models, etc., some of the interesting results of experimental work of the agricultural experiment station. They showed in miniature form a model of the principal university buildings and a plat of the grounds with the buildings in place. Also, a model farm with crop rotations and the required number of live stock necessary to consume the crops produced. The Illinois State Entomological Department had a booth showing some of the common insects and birds and kept a tab on the number of people reached through this means. Visitors were passing through this building from 8 A. M. until 11:30 P. M. viewing the exhibits. During eight hours on Wednesday more than 3,100 interested visitors stopped to study this exhibit.

The Domestic Science Department of the Iowa State College made an exhibit and gave a series of lectures and demonstrations in the proper selection and preparation of food. The United States Department of Agriculture furnished a free moving picture show which was well patronized. The pictures shown were on subjects pertaining to rural life and were very instructive.

Last but not least in this connection should be mentioned the boys' and girls' beef feeding contest. It is doubtful if there is any feature of this great show that will result in more far-reaching influence for the upbuilding and improvement of live stock husbandry than this contest. The enthusiasm gained and the lessons taught in approved husbandry and care of live stock will make impressions that will remain through life.

The judging of the live stock for the most part was done on schedule time, though there were some classes where the numbers were so large that this was impossible. It was a tremendous task assigned to Senor Pedro T. Pages of Buenos Aires, Argentine, S. A., judge of the breeding classes of Shorthorns, to select the best animals out of some of the younger classes. There were eighty-four entries in the senior bull calf class, and sixty-one were presented in the ring in the senior heifer class. It is hardly necessary to state that many good ones were sent to the barn without getting into the short list from which the best ten were selected as ribbon bearers. The work of the foreign judges, Mr. Pages and Mr. Carlos M. Duggan, who judged the grade, cross-bred and champion steers, was done in a quick, decisive and satisfactory manner. These Argentine gentlemen worked rapidly through the classes, using their hands freely, selecting animals that suited their sense of touch. Perhaps the thing that appealed

to an onlooker most as he watched them work, was the large use they made of their hands and also of their canes as straight-edges in selecting animals of straight lines and correct form. Both of these gentlemen were sticklers for straight backs, full crops, well sprung ribs, wide level rumps and with as much depth of flesh, quality and finish as possible. In addition to the above they did not overlook the value of deep compact bodies upon short legs.

The carlot exhibits in beef cattle were unusual this year for their quality and finish. Great rolls of fat are no longer tolerated and such exhibits did not even get a "look in." Ed P. Hall, of Mechanicsville, Ill., captured the championship again for the third time in the carlot contest with a load of Angus yearlings that looked like so many peas in a pod and sold at the record price of 28 cents per pound, 11 cents higher than any previous load of cattle. The Ohio University produced the champion steer in the carcass contest, an Angus, which sold dressed for 40 cents per pound.

While there had been a few more hogs at some of the previous shows, the quality had never been better and many thought not equalled. A Poland China barrow bred and exhibited by H. B. Francis of New Lenox, Ill., carried off the individual honors, winning the grand championship ribbon over all breeds, while the Berkshires won the championship in the carlot classes and sold for \$11.75 per hundred. The champion pen of fat barrows was won by Francis with his big Poland Chinas, which defeated a very choice pen of Chester Whites. The champion fat barrow carcass was won by the University of Illinois with a Berkshire. In all there were loads of fat hogs shown in the carlot classes that sold for an average of \$10.94. The range in price was from \$10.60 to \$11.75. In the lot there were two loads of Berkshires, three loads of Poland Chinas, two loads of Chester Whites and one load of Duroc Jerseys.

One of the outstanding features of the draft horse show was the large number of exhibitors, many of them new to this show, which is as it should be, indicating that it was more of a breeders' show than an importers' display, which in times past many small breeders have feared to meet. There were more draft horses than at any previous show and particularly was this true of the Percherons with over 430 entries from fifty-seven different exhibitors. While the number of imported animals was smaller, no one could say but that the quality was fully up to the previous high standard, and in some classes excelled anything ever before shown. The Clydesdales were next strongest in numbers with 210 head; 175 Shires, 165 Belgians, 48 Suffolks, and 82 grade drafters.



# Kansas Farmer Dairy Club

## Leavenworth County Meeting

**W**E ARE more enthusiastic over the Dairy Club than ever, since meeting the Leavenworth County members for the second time. At the very beginning of the club, last spring, we met the members of this county in Leavenworth and visited two dairy farms near the city with them. The meeting and trip had been planned by the bankers and the county agricultural agent. We came home from that meeting feeling there were many possibilities in the Dairy Club for the boys and girls who would become interested and would do the work carefully. When we found we would be in Leavenworth again on December 8, we asked these members to meet us in the afternoon, that we might talk with them a little about the things they were doing in carrying on the club work. From this second meeting we came home more than pleased with the interest they have taken in the work and their results.

There are eight members of the club in Leavenworth County, and seven of these were at the meeting. We met at the Wulfekuhler State Bank, as this is the bank that loaned the money to most of the members in that county to buy their cows. The State Savings Bank of Leavenworth also co-operated in the Dairy Club work, and one of the boys obtained his loan from this bank.

Although it was only the eighth day of the month, the members had completed their records for November and brought the bank's copies in and made their monthly payments on the notes. It was worth the trip from Topeka to see these businesslike transactions between the banker and his young customers. The records were handed in, payments made, and all questions asked by Mr. Wulfekuhler were answered promptly and intelligently.

Business with the banker was soon completed, and we all went to the Chamber of Commerce rooms for the meeting. Here the associate editor of KANSAS FARMER talked about feeding and caring for milk cows and asked the club members questions about their cows. It is so much easier and more satisfactory to talk about these things than it is to write about them, and we wish we might meet all of you in this way. It would be better than many letters. And after you have met people it is easier to write to them, too, for while you are writing you can imagine you are talking to them if you know just how they look. If you are planning to be in Manhattan during Farm and Home Week, which will be February 5 to 10, be sure to let us know, so we can plan to see you there and get acquainted with each other.

Among the Leavenworth County members of the Dairy Club are seven boys and one girl, and every one of them is alive and doing good work. They had to be excused from school in order to meet us. We are going to show you their pictures next week so you can feel you know them better.

After we had our little talk about Dairy Club matters, all but two of the members went with us to the meeting of the Glenwood Mother-Daughter Canning Club in the Young Women's Christian Association building. There we heard talks by President Waters of the Kansas Agricultural College, and O. H. Benson of the U. S. Department of Agriculture. At the close of the talks we went up to the platform, where we shook hands with President Waters and he talked to the members for a few minutes before we all went to the Lyceum Theater, where we saw a moving picture of the Glenwood Canning Club. After that, we saw them take some more moving pictures of the canning club exhibit and members.

There is only one thing we would like better than meeting the Dairy Club boys and girls in this way, and that is to meet you at home where we could go with you to milk and feed your cows and see just how you do your work. We hope we may be able to visit at least some of you before the year is out. If we do, have an extra pail ready and we will run a race with you in milking and see which can do the better job.

Maybe you can visit us before we have a chance to visit you. If you come to Topeka, be sure to call on us at the KANSAS FARMER office and spend as much time as you can with us. We

shall always be glad to see you and talk with you.

### Boys and Girls at Dairy Show

A new feature of the National Dairy Show this year was the exhibit of boys' and girls' club work which was collected from the ten states of the North Atlantic group responsible for the Eastern States Exposition held in connection with the dairy show. The exhibits of these club products were so many that the building provided for them was too small and it was necessary to supply a tent for housing the overflow.

One hundred eighty teams of three members each did demonstration work during the show and judged dairy cows, poultry, corn, potatoes, bread, sewing, vegetables, etc.

The exhibits of these club boys and girls from the ten states were as follows: 3,547 glass jars of food products canned by the cold-pack method, 168 entries of corn, 236 of potatoes, 39 of pure-bred pigs, 111 poultry entries, 724 of garden work, 172 of bread, 100 of handicraft, 551 of garments made.

There were 97 entries in dairy judging work. Sixteen pure-bred bulls, donated by leading breeders, were distributed to the winning teams in this work.

The demonstration work during the exposition consisted of demonstrations in butter making, cheese making, Babcock milk test, seed corn testing, stringing and drying, formalin treatment of potatoes for scab, cutting for seed; demonstrations in home canning of fruits, vegetables, meats and soups; canning of fowls, killing and dry-picking of chickens, daily demonstrations in a small home garden with special reference to intensive management, and handicraft demonstrations showing the utilization of the odds and ends of lumber, wood and forest material; demonstrations in use of trap nests, feeding and management of pigs, carving of a pork carcass, and other demonstrations illustrative of the boys' and girls' club work.

The cow demonstration, model dairy barn, model milk house and silo, together with the exhibit work illustrating how to prevent contagious abortion, was put on by the National Dairy Show as a part of the program of co-operative exhibits provided by the special appropriation. This was an education out of the ordinary and very much worth while.

The boys' and girls' club work, or junior extension work as it is called by some, is quietly taking an important place among the worthy projects of today, and already much good can be traced to the influence of the local club that serves to develop and round out its members.

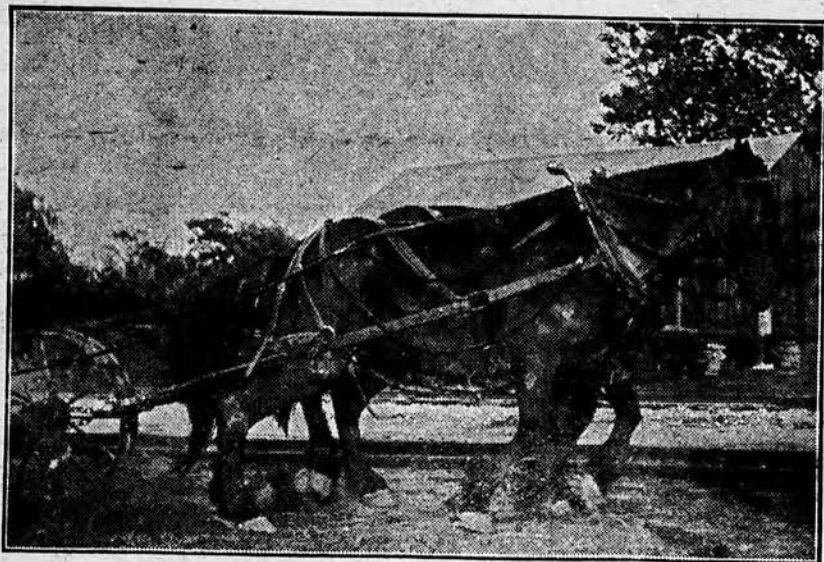
Because she converts a larger percentage of her feed into a form suitable for human consumption, the dairy cow is considered a more efficient producer of food than any other animal. Animals slaughtered for beef return only about one-fourth as much of the energy in their feed as milk cows. Calves fed at the Ohio Experiment Station until two years old produced meat equal to 18 per cent of the protein and 5 per cent of the sugars, starches and fat in their feed. Dairy cows produced milk containing 46 per cent as much protein, and 24 per cent as much of the fat, sugars and starches as they consumed in their feed. These cows in milk returned nearly 27 per cent of the total energy contained in their feed, but as beef producers during their growing period returned less than 7 per cent of the energy value in their feed.

As we said in the start, we are proud of the way you are sending in your records. They are coming this month better than ever before. If you have not sent yours and you have a good reason for the delay, write us about it.

As long as a cow uses the feed for milk, the more of it she can eat and turn into milk, the better she is as a dairy cow.

### Raise Calves at Half Cost!

By using "Brooks' Best" Calf Meal. 100 pounds, \$3.25; 500 pounds, \$15. Brooks Wholesale Co., Ft. Scott, Kansas.—Adv.



## You Cannot Break Them

The picture shown above was taken during a test of the celebrated Anderson Doubletree, made by Mr. J. F. Ellis, of Osage City, Kansas. Read what he has to say:

### TO WHOM IT MAY CONCERN:

Osage City, Kansas.

This is to certify that I own a team of horses weighing 2,640 pounds with harness on. They have been on heavy work for a number of years and are well used to pulling, and I will put them against anything their weight for a pull. I had the pleasure of testing a pair of doubletrees for the Anderson Manufacturing Company of Osage City, Kansas. The doubletrees in question weighed ten pounds, completely ironed. I hitched them to a traction engine, and the brake was set unknown to me. The horses made as hard a pull and repeated pulls on this doubletree as I ever saw them make. I made at least a dozen hard pulls and at a few times the team lunged, but could not break it.

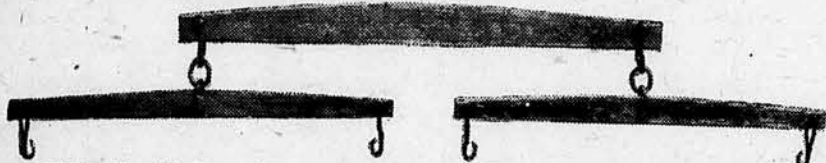
(Signed) J. F. ELLIS.

We, the undersigned, employees of the Anderson Manufacturing Company, witnessed the above when Mr. Ellis of this city tested the doubletrees, and will say that every word in the above statement is true.

(Signed) OSCAR JOHNSON  
(Signed) CARL GREENQUIST  
(Signed) FRED ANDERSON  
(Signed) CHARLES C. ANDERSON  
(Signed) J. D. RAMZY.

Here is one of the most practical doubletrees ever made for all ordinary work on the farm: Plowing, harrowing, lead team work, road work—in fact any work requiring a doubletree of medium weight and extra strength.

Fred Anderson, the inventor of the new celebrated Anderson Manure Loader and Scraper, has personally designed the Anderson Doubletree along scientific lines to develop the greatest amount of pulling strength possible, without excessive weight, and Mr. Anderson personally guarantees these doubletrees to stand the terrible strain of a steady pull of a team weighing up to 3,000 pounds.



This doubletree is constructed from carefully selected hardwood, thoroughly seasoned, painted with two coats of hard paint. It measures 38 inches long, 3½ inches wide, and 1½ inches thick. The hooks and center irons are of a special design, and will never slip off the end or center of singletrees. All iron parts are made of ¾-inch round forged mild steel and strong enough to stand the strain of every use.

KANSAS FARMER takes pleasure in offering its readers a doubletree which cannot be equalled for less than \$1.35, absolutely free. For a short time, and while our supply lasts, we will send one pair of doubletrees complete, all charges prepaid, to anyone sending us only \$2.00 for a three-years' subscription to KANSAS FARMER. This offer is open to all, new or renewal. If you are already paid in advance, we will extend your subscription. Don't delay, but order now, for this offer may not appear again.

**Kansas Farmer**  
Circulation Dept. Topeka, Kansas





## Finishing Hogs For Market.

I HAVE on hand at present about 200 bushels corn, 400 speltz, and have 108 spring and summer shoats that will weigh from 100 to 140 pounds apiece—all in good flesh and good bone. I also have plenty of alfalfa hay of which I am feeding all they will eat—and they eat lots of it. I am feeding four bushel baskets of ear corn to 90 of the largest ones and two baskets of speltz morning and evening. It is not grain enough to fatten them as fast as they should be fattened. I have been feeding them about three weeks since I took them off pasture.

These feeders and grinders combined that the hogs work themselves, the makers claim, will accommodate 30 hogs. I thought of getting one of them, putting 30 of the best ones in a well protected pen, give them warm water where they can get all they want, shell the corn and mix speltz with it and let them eat all they want to grind. Then when they are ready for market put in another bunch of the best and finish them the same way. By the time I got the spring shoats off my hands I would have some fall pigs that would do to fatten.

Would it pay me to do as I have outlined? I would have to buy some corn, which at present is 75 to 80 cents. I have the speltz of my own, which is worth on the market one cent a pound. I thought by feeding this way I would have an even chance on the market which would be safer than to sell all together, as I might strike a low market to sell all at the same time. In this way they might be fitted better, too. We are under Sioux City market 75 cents.

Now what I want to know is this: Will it pay better to feed as I have outlined, with the feed grinder—about 30 hogs at a time? If so, about how much grain of each kind would they require to put them in good shape for market and about what should they weigh when finished? They average 130 to 150 when put in feed pen. How long should they be fed and about how much grain would 30 hogs require per day? Would it pay to feed tankage or meat meal, which would cost about \$60 per ton or \$3 per 100 pounds laid down at station? I have feed enough to run until grass comes and keep them in good shape and I will have plenty of sweet clover and alfalfa pasture in the spring for them to run on. Which do you think would be the better way—use the grinder and feeder, or feed them as I am doing and increase the feed till I get them on full feed and feed them that way till they will be in fair shape for market, sell them or stock them till grass comes then buy corn to fatten them on grass? I want to get the most profit out of them and as feed is so very high-priced would appreciate advice by someone who has had more experience and knows about what gain that grain should make per bushel or pound.

My shoats are good, high grade Chester Whites and all, sleek and healthy.

I would like to have your opinion on which way you would handle them for the most profit. Corn is now 75 to 80 cents, and I don't look for it to be much less and it will probably be higher-priced. Would it be advisable to feed corn without the speltz and feed the speltz to the fall pigs? Would it pay to feed the fattening shoats all the alfalfa hay they will eat while on full feed, as I have plenty of it?—M. ROUSH, South Dakota.

We believe it would pay our correspondent to finish the heavier shoats for market as quickly as possible. While hogs can be finished on corn and alfalfa hay, we believe that with the present high price of grain it will be more profitable to purchase some tankage and shorts if the price of shorts is not higher than \$1.75 or \$1.80 a hundred. We would suggest that a mixture be made of 100 pounds of shorts and 25 pounds of tankage. Feed about one and one-half pounds of this mixture daily to each hundred-weight of hogs in

the lot and give them all the shelled corn they will eat.

The matter of labor is sometimes quite an item, and while our correspondent may have plenty of time to feed these hogs, there are farms where there is not time enough to feed hogs by hand. For such conditions, a home-made feeder can be used, placing shelled corn in one compartment and the shorts and tankage mixture in the other. Experience has shown that hogs can be safely trusted to balance their own rations satisfactorily when fed in this way. To feed sixty head of the heaviest of these shoats will take on an average about six bushels of corn daily and 130 to 140 pounds of the shorts-tankage mixture. Of course, they will not eat this much at present but will consume more as they get larger. Feeding these hogs as suggested should make them gain 100 pounds in weight at a cost of about 500 pounds of feed consumed, of which 350 would be corn and 150 the shorts-tankage mixture. It should not require over two months to make this amount of gain and the cost at prices quoted would be about \$7.80.

These suggestions are not based on theoretical figures, as we have fed a good many hogs with the feeds given with even better results. The hogs must of course be kept healthy and free from vermin, have good sleeping quarters, be provided with charcoal, wood ashes, and coal slack, and since there is plenty of alfalfa hay, all of this they will eat should be given them.

We tried one of the hog motor grinders once but came to the conclusion that for fattening hogs rapidly it was not satisfactory. If you wish to push a hog for market you cannot expect him to work as hard for his grain as is necessary with these grinders. The hog will get lazy and not grind out enough to put on the rapid gain desired. For stock hogs and brood sows the grinder which the hog has to work himself, may be all right, or for fattening hogs where there is no special reason for wanting to get them fat quickly.

It will take longer to put the lighter fall shoats in market condition and, since our correspondent will have plenty of good pasture next season, we believe it will be a good plan to carry them through on speltz and alfalfa hay, run them on pasture with a grain ration of about 2 per cent of their live weight, and finally finish them early in the fall with a short feed of corn. He has the speltz on hand and this will be a good way to feed it out profitably. Handled in this way these fall pigs will go on the market next fall in advance of next spring's crop of pigs and will carry considerable weight and the gains will have been made largely on alfalfa and other pasture. The indications now are that the price for pork will remain high for some months or until another crop of pigs can be grown.

We have not advised feeding speltz to the bunch that is to be pushed for market, because it has been our experience that this grain has too much hull and is not relished well enough by hogs to be satisfactory. You have enough speltz to carry through forty or fifty of these fall pigs. Speltz grains are hard and should be ground. Perhaps the grinder which the pigs have to work themselves is as good a way as any. By giving them all the alfalfa they will eat it will not be necessary to feed any protein supplement.

### Worm Remedy

A good remedy for preventing worms in hogs is: Three pounds glauher salts, three pounds common salt, four pounds charcoal, one pound sulphur, three pounds copperas and three pounds sodium bicarbonate. Mix and keep in a self-feeder or trough in a dry place where the hogs can have access to it at all times. Hogs that are practically free from worms are much harder than hogs that are badly infested with worms. Being harder they are more resistant to other diseases common to the hog. So hogs should be kept free from worms if they are to be the most profitable.



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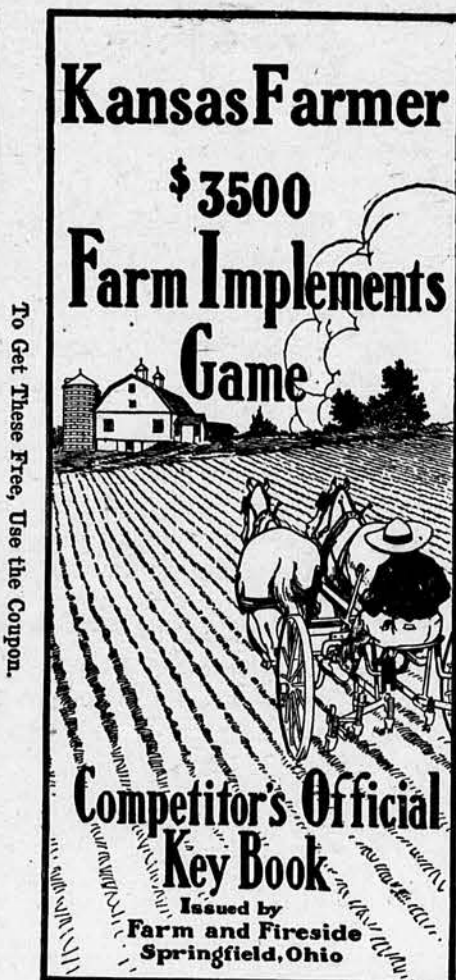


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The sum of \$3,500 is going to be divided among 400 persons who submit the best sets of titles to pictures being published by KANSAS FARMER and associate publications. These fifty pictures are drawn to represent farm implements, parts, or terms. The pictures have no titles now, and we offer our readers the prizes for suggestions for titles, every reader being invited to study the pictures, and submit his or her ideas. We have published three installments of pictures, and in our January 6 issue will publish pictures 36 to 40. Pictures 1 to 35 will be sent free to any reader requesting them, and by filing your request right away, you can be studying the thirty-five pictures while waiting for the next installment to appear in these columns. No sets of suggestions can be filed before January 20, 1917, and you will have until midnight of February 20, 1917, in which to prepare and submit suggestions. With pictures we will send all necessary information and instructions so you can begin preparing a set of suggestions at once and have ample time in which to prepare a set which will be thoroughly satisfactory to you.



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## These Two Books Are Ready For You

The two illustrations above show the covers of two books issued in connection with the Farm Implements Puzzle Game. The one on the left is a list of about 3,000 implements, parts, or terms, from which the pictures were drawn, and to which all suggestions will be checked. All sets of suggestions will be passed upon by a committee of prominent men, who will act as judges, and they will not consider any title which is not listed in the Key Book. So, in preparing sets of suggestions you should make sure every suggestion you submit is in the list, and you will see that the titles of the fifty pictures must be found in the Key Book. The book shown on the right contains the fifty pictures with spaces for as many as six suggestions for any picture. You will be allowed to make as many as six suggestions for any picture when you use the Reprint and Reply Book. These two books have been prepared for the guidance and convenience of participants, but it is not a requirement that you use them; i. e., you can prepare and submit suggestions without referring to the Key Book or without using the Reprint and Reply Book. The Key Book will be placed on public file in

any city where arrangements are made for this (a copy will be sent to your public library, for instance), and if you do not care to use the Reprint and Reply Book, you can clip or copy pictures from this publication, and pasting or copying one picture on one sheet of paper, submit one suggestion (only one) for that picture beneath it. In such sets you must have no more and no less than fifty pictures (Nos. 1 to 50). Sheets must be arranged in numerical order and each must have your name and address written upon it. These two books are offered those who desire their own private copies, at 25 cents each, or free as is explained by the coupon below. Whether you use the books or not, every set of suggestions filed will receive the same consideration, the purpose of the books being to simplify the game, give it boundaries, and provide labor-saving methods for participants who desire to reduce the work of preparing suggestions to a minimum. If you want information or pictures only, send your name and address on a postal card. If you want all information, and pictures, and either book, or both, send the coupon below.

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## RAISE MORE FLAX-SEED

THE production of flaxseed in the United States has gradually decreased during recent years, notwithstanding the fact that our annual consumption increases about 10 per cent each year, and that flaxseed, with its products, is an absolute necessity. This country was for many years a large exporter of flaxseed, but now our manufacturers are compelled to import at least half of their requirements. This seed has usually come from South America, and in the past it has always been available in sufficient quantities to supply our requirements, and consequently the shortage in this country has not heretofore been extremely serious. However, a succession of partial crop failures in South America, followed by practically a complete failure this year and by a greatly reduced crop in North America, has caused a severe shortage in this country at the present time, which threatens to result in a flaxseed famine before conditions can greatly improve.

This situation presents an opportunity for growing a crop that is sure to be in strong demand next year. Flaxseed is easy to raise and, under present conditions, promises to be a more profitable crop than wheat or corn. In making plans for next year's crops it would be well to consider raising some flax.

It is important to formulate a system of crop rotation that builds up the fertility of the soil and that is practicable under Kansas weather and climatic conditions. The tendency has been to run too extensively to the production of wheat and corn, and this policy has been followed so continuously in some sections of the state that the soil is rapidly losing its fertility. Flaxseed is now being used in portions of the state, in rotation with other grain crops. It fits in perfectly with any system of rotation. It is not attacked by chinch bugs, and for this reason many farmers raise some flax year after year as a sort of insurance against a total crop failure. It is a ninety-day crop that is sown during March and April, just as soon as it can reasonably be assumed that there will not be any more heavy freezes. It is harvested in June usually before the dry hot weather begins.

It is easy to handle and requires no special knowledge excepting that the seed-bed must be compact, smooth and free from clods. This can be most satisfactorily accomplished by fall plowing or by disking corn ground in the spring, and then thoroughly dragging and cross-dragging with a heavy log. This dragging smooths the surface, packs it, and fills in the small depressions. The roots of flax are fine and delicate and require just such a seedbed. If the ground is properly prepared in this manner the growing crop quickly establishes itself and reaches a full and early maturity.

The average yield, even under unfavorable weather conditions, when other crops have been practically total failures, has been from eight to twelve bushels an acre. Many Kansas farmers raise fifteen bushels an acre every year, and some have raised from twenty to twenty-five bushels an acre. These heavy yields can only be obtained by properly preparing the soil as suggested above, and too much importance cannot be attached to the careful, thorough and painstaking preparation of the seed-bed.

This year the bulk of the crop was marketed at \$1.75 to \$2 per bushel, but during the past thirty days many farmers have received as much as \$2.50 per bushel. The average price, one year with another, is probably from \$1.25 to \$1.75 per bushel, and present indications are that the latter figure will prevail for years to come.

One noteworthy thing about flaxseed is that the farmers who are familiar with it and who have raised it, continue to raise it and are enthusiastic about it. Various agricultural colleges have conducted experiments in the culture of flax and they all recommend it as being a profitable crop worthy of more general attention. The Kansas Experiment Station Bulletin No. 144 states:

"Flaxseed is a crop that is worthy of general trial and more extensive growing throughout the state."

Bulletin No. 47 of the Minnesota Experiment Station states:

"Flaxseed does not remove an excessive amount of fertility from the soil. An average yield of fifteen bushels of flax per acre will remove less fertility from the soil than 150 bushels of potatoes, forty-five bushels of corn or thirty bushels of wheat."

Flax straw is a valuable feed for stock. The straw and chaff always contain considerable quantities of immature seed and this has high feed value.

By growing some flax we can increase the earning capacity of our land, and eliminate the danger of total crop failures. It provides a cash income at a season of the year when the farm is not otherwise productive. It helps to conserve and build up the fertility of the soil and more evenly distributes the labor, as flax does not conflict with other crops. It is the best nurse crop for timothy, alfalfa or clover, as it is removed at exactly the proper time to permit the full development of these crops under most favorable conditions.

It is a crop that is well worthy of the most careful consideration, and every farmer will find it profitable to sow more or less flax every year. Farmers are beginning to realize these facts and they are clubbing together in many localities of the state where flaxseed has not been raised in the past, thereby securing community acreages of five hundred to a thousand acres, which insures competent threshing services and highest market prices for their grain.—S. H. WILEY.

### Pasture for Allen County

N. G. Allen County, writes us for advice about the seeding of tame grasses for pasture. He gave no particulars as to soil conditions on his farm. We referred his question to W. E. Watkins, agricultural agent of that county. Mr. Watkins answers as follows:

"The methods of use and the kind of grass to seed will depend upon soil types to a considerable extent. For bottom lands that may overflow, alsike clover, timothy and red top have been found satisfactory. If there is no trouble with drainage, sweet clover can not be surpassed for pasture on valley land.

"On limestone upland sweet clover will give more grazing than anything else that can be seeded. For best results, though, a field should be seeded every year, as sweet clover will give no pasture after July of the second year's growth.

"For shale land or our 'white ash' soil type, a mixture of alsike and red clovers with red top and English bluegrass will probably be the best to use.

"Good results may be secured by seeding with oats or flax as a nurse crop, but the better farmers of the county prefer to seed grasses alone."

### How Much Silage to Feed

L. O. M., Rooks County, is having his first experience in feeding silage. He writes that he has sixteen feet of settled silage in a silo 14 feet 4 inches in diameter. He wants to know how many tons he has and how much to feed daily to twelve head of grown cattle and sixteen calves from nine to fourteen months old. For additional roughage he has corn fodder, cane forage, some millet, and plenty of straw. He also has on hand 3,000 pounds of cottonseed meal. Corn is \$1.07 a bushel and alfalfa hay \$17 a ton. He asks if he should feed the calves separate from the older cattle.

According to the only figures we have on the weight of settled silage, the mean weight of the silage where it stands sixteen feet deep in the silo is thirty pounds to the cubic foot. Of course, if there was more in the silo to begin with and part of it has already been fed, the sixteen feet of remaining silage will be heavier since it is packed more solidly. In calculating the number of cubic feet of silage it is necessary to find the area of the circle. To find this, square the diameter, which is 14 feet 4 inches, and multiply the result by the factor .7854. This gives 162 square feet. Multiplying this by 16 feet, the depth of the silage,



gives 2,592 cubic feet. If the mean weight is 30 pounds to the cubic foot, there should be about 39 tons of silage. Silage, however, is apt to be quite variable in weight because a crop that is immature and contains little grain will not make as heavy silage as the fully matured crop. We do not believe our correspondent should figure on more than 35 tons. Of course, there will be some spoiled on top, which will not be fit to feed.

In feeding silage when the amount is limited, it should be so fed as to last until grass. If the silage should run out a month before the pasture season comes, it will be difficult to get the cattle through this last month in good shape. They do not take kindly to dry feed after having had a ration of silage for some time. It will be necessary to count on feeding for about four months or 120 days. In order to have the silage last through it will be necessary to limit the daily allowance to about 580 pounds.

The calves should by all means be fed separately. Give them 15 to 18 pounds of silage apiece each day and all the fodder, straw, and other roughage they will eat. If there is any choice in the dry roughage, give the calves the best. Since there is no alfalfa or other leguminous roughage to feed, it will be necessary to give them some feed rich in protein so they can make proper growth. There is not enough growing material in such feeds as silage, corn fodder, millet and cane to keep the calf growing. About a pound daily of the cottonseed meal to each calf will supply the necessary protein.

The grown cattle can be fed about 25 pounds of silage a head daily, with a pound of cottonseed meal and all the dry forage they will eat.

In feeding from a silo, those who have had no previous experience will become alarmed after they have fed for awhile, fearing that the silage will run out long before they had calculated it would. It should be remembered that the silage at the bottom is much more solid than that at the top. When you first begin feeding from the top, the silage taken out will weigh at the rate of about 10 to 20 pounds to the cubic foot. At a depth of 16 feet a cubic foot of silage will weigh on an average 40 to 41 pounds. The last end of it thus goes much more slowly than the top.

It is almost necessary for the beginner to do a little weighing of silage in order to get some idea as to how much he is feeding. Ordinarily a heaping bushel basket of silage will weigh from 30 to 35 pounds. If it is carried out in baskets it will be easy to keep track of the quantity fed after a few basketfuls have been weighed. If it is hauled out in wagons to feed bunks in the yard, it will be almost necessary to weigh a few loads.

### Defends Johnson Grass

Johnson grass has been classed as a dangerous weed, the reason being that it spreads rapidly by underground root stalks and cannot be killed by ordinary methods of cultivation. There are places in Kansas where it has persisted for twenty-five or thirty years in spite of the efforts put forth to kill it. There is now a law against seeding it in Kansas.

Edgar B. Corse, of Kiowa County, Kansas, believes it has been wrongfully condemned. He says:

"I have noticed considerable adverse comment from time to time about Johnson grass and I think most of it comes from people who are ignorant of its value as a forage crop and how to control it."

"The best authorities admit that it has a feeding value equal to cane or sorghum and that Sudan grass is merely an annual Johnson grass. South of the freezing line, Johnson grass is a pest except for hay and forage. Even in the South it has a host of friends, as I learned while in Texas last year."

"An old Texan told me a number of years ago that Johnson grass could be killed nine years out of ten, by plowing either in December or January, five inches deep, provided it froze that deep after it was plowed, but if plowed and worked in the spring the stand would be doubled. Several years ago a friend of mine plowed a patch of Johnson grass nearly every month in the year except those two months and it increased the stand. The following year, upon my recommendation he plowed it in December, and never a spear showed afterwards."

"A good stand of Johnson grass will

produce from three to five tons a year of the very best kind of hay, with a feeding value better than the timothy and equal to the best cane forage. It is drouth resistant and does fairly well on sandy soils."

I think it has a place and will fill a long unfilled want where sufficient forage and pasture is hard to get."

It is not safe to feed moldy silage to horses. We have frequently called attention to this danger. The Illinois Experiment Station has tried feeding moldy silage to horses in an experiment. On the fourth day the horses showed symptoms of poisoning. On the fifth day, one died. In three weeks, three more horses died, and the remaining horses will undoubtedly die. Moldy silage should not be fed to any stock. Moldy silage is usually caused by the corn being put in the silo too dry, by being poorly packed, or by the silo not being air-tight.

### KANSAS PEDIGREED WHEAT

(Continued from Page Four)

carded as inferior, and only No. 761 and No. 762 were grown. In the harvest of that year "P-762" outyielded 761 by 38.8 per cent and was six days earlier in ripening.

#### GETTING NEW STRAIN TO FARMERS

Out of the 613 pure-bred or pure-line wheats which Professor Roberts selected in the years 1906 and 1907, only 115 held through to the harvest of 1909, the rest having been discarded by that time as inferior.

Finally, in 1910, Professor Roberts turned over the bulk lots of seed of his pure-bred wheats to the Department of Agronomy to increase, as the cereal testing work—after the first critical and scientific stage of the work is past—has to be handled with machinery on large acreages.

Professor Roberts was the first to introduce pure line breeding of the cereals at the Kansas Experiment Station. The fact should be further emphasized, so far as P-762 is concerned, that not only is it an early wheat today—from three to five days earlier than Turkey—but that it was just such an early wheat when he originally selected it, that he recognized it as such, and that he selected it for the very reason that it was actually four days earlier than the Crimean variety (a wheat of the Turkey type), from which it came. It should be further emphasized that P-762 not only is a high yielder today, but that it was also shown to be an outstanding yielder in all the early years of Professor Roberts' nursery tests—not only in comparison with the other pedigree wheats, but also in comparison with Kharkov wheat, then the standard variety of the experiment station. There is nothing accidental about all this. It shows careful and intelligent selection followed by equally careful testing and conscientious attention to details.

Through his work in the improvement of wheat by selection, the experiment station is now able to put out into Kansas fields a strain of pure-bred wheat that outyields by four bushels to the acre the best wheat that has been grown by the experiment station heretofore, and that precisely at the most critical time in the world's history as regards the food supply.

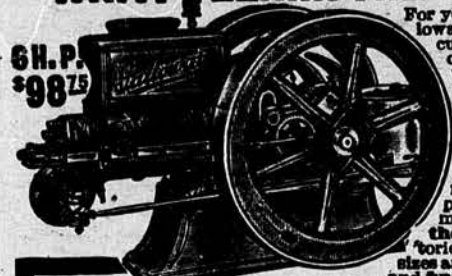
#### FIND RUST-PROOF WHEAT

Work with the remarkable P-762 is still going on in the Department of Botany. L. E. Melchers, plant pathologist, has been conducting a series of experiments with some seventy-five of Professor Roberts' pure line wheats, to determine their relative resistance to the destructive stem rust. Last season, when he succeeded in establishing, by ingenious methods, a severe rust epidemic that swept over the pure-bred wheat plots, damaging them all the way up to 90 per cent with rust, it was found that P-762 was nearly rust-proof, being affected but 10 per cent. Another of Professor Roberts' 1906 selections, P-1066, to which he has devoted considerable attention, because of the fact that it has the most perfect type of wheat berry he has ever found, is reported by Mr. Melchers, in the same rust experiments, to have demonstrated itself to be absolutely rust-proof. If these experiments are confirmed by later ones, this P-1066, also originated by Professor Roberts, will be the first rust-proof winter wheat ever reported.

Farmers will find flaxseed the most profitable crop. More money in it than wheat. Booklet from Fredonia Linseed Oil Works, Fredonia, Kan.—(Adv.)

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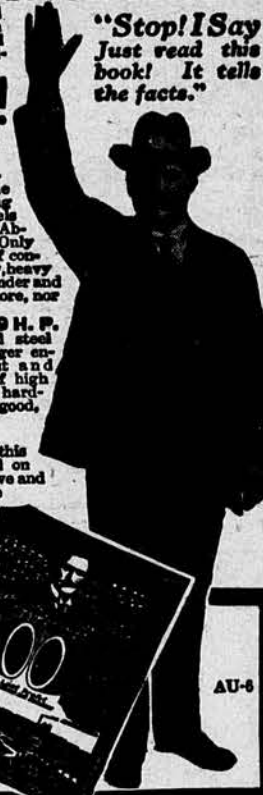
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Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war. The Government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

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**CAN SPARE SOME NICELY MARKED** well bred springing two-year-old grade Holstein heifers; also a few fresh cows. Glenn C. Smith, Sedgwick, Kansas.

**FOR SALE—AN EXCELLENT REGIS-** tered Shorthorn bull, of serviceable age. Red in color. C. W. Merriam, Columbian Building, Topeka, Kansas.

**HIGHLY BRED HOLSTEIN CALVES,** either sex 15-16th pure, crated and delivered to any station by express, charges all paid, for \$20 apiece. Frank M. Hawes, Whitewater, Wis.

### REAL ESTATE.

**TRADES EVERYWHERE—EXCHANGE** book free. Bersie Agency, El Dorado, Kan.

**640 ACRES, EASTERN KANSAS IMP.,** 200 acres in wheat, 100 in alfalfa. Price, \$75 per acre. Can take in 160. Write P. O. Box 125, St. Marys, Kansas.

**FARM LANDS THAT WILL SOON DOUB-** le in value and raise from fifteen to forty bushels of wheat to the acre while doing so, is the proposition I have to offer. Your investigation will prove my statement. J. H. Morison, Sterling, Colorado.

**FARMING OUR FERTILE FLORIDA** lands means growing crops the year round. Sandy loam with clay subsoil, ideal for early vegetables, oranges and grapefruit, live stock and staple field crops. Tract in prosperous community, close to transportation and Dixie Highway. Our book, "Farming in Florida," points way for right man to make big profits. Write for free copy today. O. P. Swope Land Company, Oviedo, Seminole County, Florida.

### FARMS WANTED.

**FARMS WANTED—HAVE 7,000 BUYERS.** Describe your unsold property. 514 Farmers Exchange, Denver, Colo.

### SHEEP

**100 NATIVE BRED EWES FOR SALE.** B. E. Miller, Newton, Kansas.

### THE STRAY LIST.

**TAKEN UP, BY MARSHALL RIFE,** Union Township, Rice County, Kansas, one red bull calf, about one year old, appraised value \$20. L. W. Pulliam, County Clerk, Rice County, Lyons, Kansas.

**TAKEN UP, BY EARL SOUTHER,** FOUR miles north and two miles east of Parsons, Neosho County, Kansas, one red milk cow, weight about 700 pounds, November, 1916. W. L. Craig, County Clerk, Erie, Kansas.

**TAKEN UP, BY O. L. FREY,** ABOUT eight miles northwest of Elmdale in Diamond Creek Township, Chase County, Kansas, one red yearling heifer; no marks or brands; valued at \$30. November, 1916. J. A. Mann, County Clerk, Chase County, Cottonwood Falls, Kansas.

### HORSES AND MULES.

**FOR SALE OR TRADE—ONE REGIS-** tered black jack with white points, 14½ hands high; extra quality and breeder, quick server, lots of colts to show; nine years old and guaranteed every way. Also one three-year-old. Would trade on car in good condition or other personal property. Harvey Beeler, St. Marys, Kansas.

**FOR SALE AT A SACRIFICE OR WILL** trade for western land, two good registered jacks, extra good breeders; a yearling jack, two jennets in foal. E. J. Devon, Parnell, Missouri.

### HOGS.

**100-POUND POLAND CHINA BOARS,** \$15. Six weaned pigs, \$35. Four gilts (sows), \$50. Quick. Frank Barrington, Sedan, Kan.

### SHETLAND PONIES

**SHETLAND PONIES FOR CHRISTMAS—** Charles Clemmons, Coffeyville, Kansas.

### SEEDS

**FIFTY CENTS WILL BRING YOU 12** large roots of Mammoth Rhubarb that will give you at least one dollar in value first season. Catalog free. Arkansas Nursery Company, Dept. KF, Fayetteville, Ark.

**LENHARDT'S SELECTED EARLY PRO-** lific seed corn. Every ear inspected by us. You get best results by using this corn. Lenhardt Bros., Gainesville, Ga.

### HONEY.

**ONE 60-POUND CAN CLOVER,** \$6.25; case of two cans, \$12.00; two, \$11.75; five, \$11.50. Light amber, one 60-pound can, \$5.25; two, \$10.00, f. o. b. Center Junction, Iowa. Cash with order. Satisfaction guaranteed. W. S. Pangburn.

### ALFALFA.

**I CAN SHOW YOU RAW LANDS THAT** I sold less than two years ago at \$85 per acre that are now renting by the year at fifteen dollars per acre. Why not get some of this wonderful alfalfa bottom land now? I have several choice pieces at \$100 on long time payments. Under best irrigation system in America. For names of farmers from your own state now here and printed matter, write H. H. Clark, 100 Main, Calipatria, Imperial Valley, California.

### DOGS.

**COLLIE PUPS—U. A. GORE, SEWARD,** Kansas.

**WOLF AND COON HOUNDS. RICE &** Tindall, Garnett, Kansas.

**AIRDALE—THE GREAT TWENTIETH** century dog. Collies that are bred workers. We breed the best. Send for list. W. R. Watson, Box 125, Oakland, Iowa.

### MISCELLANEOUS.

**FERRITS FOR SALE—PRICE LIST** free. Also ferret muzzles, 25c each. Bert Ewell, Wellington, Ohio.

**YOU CAN MAKE A GOOD LIVING IN** your back yard raising Belgian hares. Full particulars and price list of all breeds, 10c. W. G. Thomson, Aurora, Colo.

**THREE DOLLARS BUYS DANDY PAIR** Belgian hares, Angora rabbits, trio white rabbits, or pair guinea pigs full grown; best stock. Christmas presents. Page's Pet Place, Salina, Kansas.

**FOR SALE—16-HORSEPOWER GASO-** line engine on steel trucks; good as new. Double seated carriage, rubber tires, good as new, cost \$480, or will trade either of the above. Make me an offer. H. W. McAfee, Route 8, Topeka, Kansas.

**FOR SALE—LATEST PLAT BOOK OF** Shawnee County, 44 pages, size 14 x 19 inches. Shows each township in the county, with name of each property owner on his land, also rural routes, school houses, railroads and complete alphabetical list of taxpayers in county outside Topeka and Oakland. Satisfaction guaranteed. Cloth binding, \$5.00. To close out remaining Bristol board binding will sell a year's subscription to Kansas Farmer and Plat Book for only \$1.50. Last previous county map sold for \$10. Send all orders to Kansas Farmer, Topeka, Kan.

### SITUATION WANTED.

**WANTED—WORK ON A FARM. WILL** work for reasonable wages. J. C. Campbell, Albuquerque, New Mexico.

### WANTED—TO BUY.

**WANTED, SEEDS—CLOVER, CANE,** millet, kafir, milo, English blue grass, Sudan grass, pop corn. Send samples. Mitchellhill Seed Co., St. Joseph, Missouri.

### SILOS.

**FOR SALE—TWO CONCRETE SILOS,** 220 tons each. One has 200 tons of corn silage in it. Barn 40 by 44, 12 lots, the edge Yates Center. Good location for a dairy. C. H. Weide, Yates Center, Kansas.

The financial report of the American Aberdeen Angus Association for the year ending October 31, 1916, shows the financial affairs of the Association in a flourishing condition. The excess of receipts over disbursements in 1916 over 1915 shows an increase of 155 per cent. In 1916 the receipts in excess of disbursements were \$11,709.63, while in 1915 the disbursements were \$1,032.50 in excess of receipts. The number of transfers recorded in 1916 shows an increase of 50 per cent over 1915 and 122½ per cent over five years ago. The number of registration entries made in 1916 shows an increase of 24 per cent over 1915 and 101 per cent over five years ago. Iowa is the banner state for new members, furnishing 114; Missouri, 53; Illinois, 47; Indiana, 21; Minnesota, 20; Kansas and South Dakota, 15 each; Tennessee, 14; Ohio, 13; Kentucky, 12; Nebraska, 11; Michigan, Mississippi and North Dakota, 10 each; Texas, 7; Arkansas, Louisiana and Oklahoma, 6 each; Alabama, Georgia and North Carolina, 5 each; Wisconsin and Virginia, 4 each; Montana and Pennsylvania, 3 each; Colorado, Utah and West Virginia, 2 each; Canada, Florida, Massachusetts and New York, 1 each. The following officers and directors were elected for the ensuing year: Charles Escher, Jr., president; J. Garrett Tolan, vice-president; John D. Evans, treasurer; Charles Gray, secretary; board of directors, E. F. Caldwell, H. M. Brown, Stanley R. Pierce, Charles Escher, Jr., J. Garrett Tolan, E. L. Hampton, Otto V. Batties, J. C. White, L. R. Kershaw; executive committee, Charles Escher, Jr., E. F. Caldwell, J. Garrett Tolan, H. M. Brown, J. C. White. Rule 13 pertaining to transfers was amended. Heretofore no charge has been made for transfers presented within ninety days of date of sale. Under the rule as amended, after January 1, 1917, a fee of 50 cents will be charged for transfers presented within ninety days of date of sale and the usual fee of \$1 each for transfers that are presented after the ninety-day limit expires.

## RURAL SOCIAL LIFE

By OSCEOLA HALL

**K**ANSAS rural communities are becoming known through their progressive activity along the line of economic and social development. In a number of communities during the last few years the school fair has been responsible for arousing and maintaining community interest and general co-operation.

One of the many progressive districts of the state is that surrounding Strong, School in Riley County. Through the united effort of the people, they have been able to erect a splendid new brick school building which is equipped with all the modern conveniences that are possible for the country neighborhood to obtain.

In planning this building the needs of the community were considered, and arrangements for meeting those needs were made. These people are abreast of the times and realize the educational advantage of surrounding the young people with good books. The library is not for the children exclusively, but is of interest to all. The schoolhouse might well be called a community house.

Aside from the well-planned building, several acres of ground afford ample room for recreation. Naturally, the people are attracted to these arrangements. Therefore, school and neighborhood activity are interwoven and when social affairs are given, the schoolhouse affords an ideal meeting place.

A community fair is held at the school each fall. Both the children and the older ones of the district take an active interest in it. This form of neighborhood life gives opportunity for ideal social expression, as well as educational advantages. All kinds of farm products are brought from the adjoining farms by the men and boys, and canned fruit, vegetables, and handiwork are contributed by the women and girls. Prizes are given those bringing in the best exhibits and this friendly competition adds intense interest. Judging of live stock and pet animals is an important part of the event. Aside from the program arranged, the social advantage of meeting together and visiting is an item not to be overlooked. Misunderstandings between neighbors and community strife are forgotten in this larger vision of community co-operation.

During the school fair, speakers from outside the community are secured to tell them of other communities and the growth of the larger work of state and nation building.

Many neighborhoods are taking up the idea of the school fair and are meeting with similar success, which will result in the rebuilding of many of our smaller communities.

### Organizations for Boys

We have an inquiry from one of our readers stating that there are a number of boys in his neighborhood, and asking what kind of an organization would interest them and help them.

A great deal depends on the conditions in the neighborhood and the interests of the boys themselves. The responsibility for the success of all organizations for directing the activities of boys, depends most of all on the leader. Among the best organizations for boys are the

agricultural clubs of various kinds. The Boy Scout organization is primarily for the town or city boy, but some of its activities can be very successfully combined with the agricultural club work. The Boy Scout Manual which costs thirty cents, can be secured from the national headquarters of the Boy Scouts of America, 200 Fifth Avenue, New York City. A kindred organization called the Farm Boy Cavaliers, has recently been started by Professor D. D. Mayne of the Minnesota College of Agriculture, St. Paul, Minnesota. This movement is specially planned for farm boys and is to them what the Boy Scout work is to the city boy. A good many troops have been organized, among them one in Leavenworth County, Kansas, the story of which appeared in KANSAS FARMER issue of December 16.

Information concerning the agricultural club work can be secured by addressing Otis E. Hall, State Leader of Boys' and Girls' Club Work, at the Kansas Agricultural College, Manhattan.

Write to Professor Mayne for full information about the Farm Boy Cavaliers.

### Reading for Children

"I have two little children in my home," writes a reader, "their mother having died a short time ago. I am not accustomed to little people. What would be appropriate reading for them—something that will entertain and at the same time be helpful?"

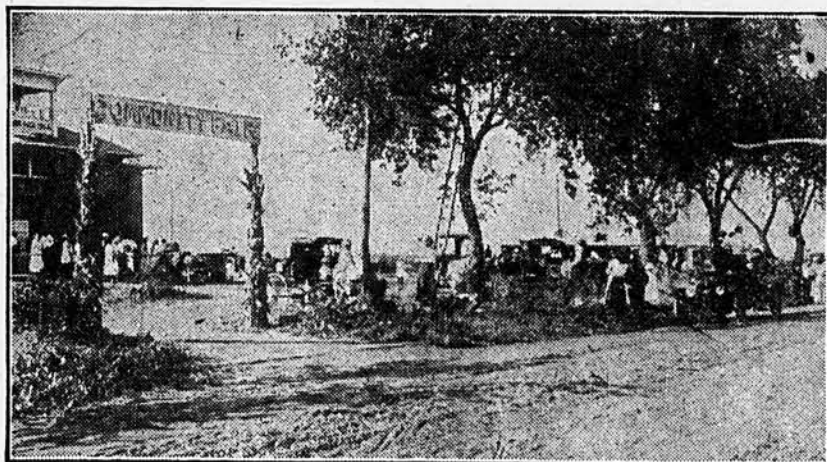
Most small children like the "Mother Goose Rhymes," the "Bed-time Stories," and the "Uncle Remus Stories." Any book dealer will be glad to furnish you full information regarding books especially designed for children. The United States Bureau of Education has published a pamphlet entitled "1,000 Good Books for Children." You should by all means secure a copy of this bulletin, which can be obtained by sending five cents to the Superintendent of Documents, Government Printing Office, Washington, D. C.

You will find it most helpful to consult freely with some good mother in the neighborhood who has had experience with small children.

### Rural Companions

Some people of city training pity the child of the country district. It is true that children of a certain type would be most unhappy taken from their city environments and located on a farm. The child of the city being accustomed to the excitement of that life, and being associated with a large number of children, would at first be lonely on a farm. However, this loneliness would gradually disappear as the child became acquainted with the natural friends of the country. The dog, cat, pony, cows, chickens, and the birds of the air would soon become his friends and companions.

Country children are natural diamonds and when sent away from the home environments to be polished, are often ruined by the process. Surround your child in the country with those things that will develop his finer instincts under the supervision of home folks. Gentleness, and a love of God's creatures can be developed by having a few pets, or by making pets of the farm animals.



THE WHOLE COMMUNITY UNITED IN MAKING THIS FAIR A SUCCESS.—MEMBERS OF MANHATTAN COMMERCIAL CLUB SHOWED THEIR INTEREST BY ATTENDING IN A BODY





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.

Think naught a trifle, though small it appear;  
Small sands, the mountain, moments make the year,  
And trifles life. —Edward Young.

Before putting away the rubber hot water bottle after use, hang it up to drain, then blow a little breath into it before screwing in the plug. There should be just enough air in it to keep the sides from sticking together. When this has been done, lay the bag in the box. This extra care will keep it soft and prolong its period of usefulness.

### Fondant or Foundation Candy

Place in the kettle six cupfuls—three pounds—of granulated sugar, two cupfuls—one pint—of water, and one-fourth teaspoonful of cream of tartar to prevent the syrup becoming sugary. Boil this mixture rapidly until when tested it forms a soft ball. Be sure not to stir the liquid, for this would cause it to grain. Test in this way: Hold the fingers in cold water and roll a drop of the syrup between them; if it forms a soft ball, the syrup is done. Remove from the fire immediately and allow it to become lukewarm. Then stir until it looks creamy and begins to harden on top, remove paddle and knead with the hands until it becomes smooth and creamy. It may be kept in this condition several days by throwing a damp napkin over it. Should the fondant, by reason of too long cooking, become hard and crusty instead of creamy, it may be reduced to a syrup again by the addition of water. Boil again and test as before, using greater care to remove it from the fire at the proper moment.

#### CHOCOLATE DIP

One cup fondant, enough melted bitter chocolate to color the desired shade, and just a few drops of hot water. This should be heated in a bowl set in hot water or fitted into the top of the boiling teakettle. The creams can be dipped in this mixture while it is quite warm.

Another good dip is made by melting what is known as "dot" chocolate, in a bowl set in hot water and allowing it to cool before dipping the creams. Nothing need be added to this chocolate, as it is specially prepared for dipping. This should be used quite cool.

Delicious mints can be made by melting the fondant in a sauce pan placed in hot water, flavoring with peppermint, and dropping from a teaspoon onto oiled paper.

Another way to vary the fondant is to melt it as described above, add chopped nuts and flavoring and pour into an oiled pan. Cut in slices when cool.

### Old-Fashioned Christmas

We wish we knew how many community Christmas trees there will be in Kansas this year. If we did know this, we would know in how many communities the Christmas season will be a joyous one. Nothing in the line of Christmas entertainments will ever bring more pleasure than the old-fashioned one in the schoolhouse or church, with the tree big enough to hide a present for everyone. Was there ever a thrill that equaled the one we felt when in his clear, steady tone old Santa called our name and we proudly walked up to him and received at his hands the mysterious package? And wasn't our joy almost as great, as in turn every other name was called and those other packages were delivered?

Was it not really the spirit of the occasion that made us so happy rather than the presents we received? Of course, we can almost remember each present too, but that is not because they were big or expensive, for none of them were. They were mostly things that we needed or would need soon—mittens, caps, handkerchiefs, hair ribbons, shoes and stockings, with an occasional book or doll. But we were always happy at Christmas time for all members of the family and the neighbors' families were planning for and talking about the Christmas entertainment. How eagerly

we helped with the chores and the housework, fitting in wherever we could, so that all the work would be done in plenty of time to get an early start for the schoolhouse or church. We can remember the nights—some calm and bright with moonlight, others wintry with snow and wind—but no matter what the weather that one night, it did not keep us at home.

This is one of the many old customs that might well be revived, for it meant wholesome fun for all. And was not a part of that fun seeing to it that those poorly-dressed children belonging to the family that had recently moved into the tumble-down house over the hill, were invited and urged to be at the Christmas tree? So it was not all selfish fun, after all.

The more of such gatherings we have, the better will our community be as a place to live.

### Farm and Home Week

If you have never attended the annual farmers' meeting at the Kansas Agricultural College, you have missed one of the greatest helps to you in your business of home-making and house-keeping.

This year this meeting will be held later than usual, the dates being February 5 to 10, and it is not too early to begin planning for the trip. If you can be away from home the whole week, you will find that from the opening session to the closing one your interests have been considered in making up the program and the more time you can spend at the meeting the more help you will take home with you. If you can leave your home duties for only a day or two, select the days and sessions of most interest to you.

The programs for the meeting have not yet been distributed, but if you will write the Extension Division, Kansas Agricultural College, Manhattan, asking that your name be placed on the list, you will receive a program when they are ready for mailing.

This is a meeting full of interest for all members of the family. The children's sessions are planned for as thoughtfully as are all others, and these center around the boys' and girls' agricultural club work in the state. We have heard of one result of last year's meeting which shows its value to the young folks. A 12-year-old poultry club boy from Western Kansas attended the meeting because of local honors he had won in his poultry work. He evidently did not confine himself to the poultry part of the meeting, but noted things generally, and when he returned home he talked constantly of the dairy department at the agricultural college and the things he had learned there about dairying. This boy lives in a small town and his family did not have a cow. He wished to learn more about dairying and working with cows and made arrangements with a neighbor to care for his two cows. A little later when the Kansas Farmer Dairy Club was announced, this boy was one of the first to apply for membership. He is milking a good grade cow of dairy type and his records and letters show he is working in earnest. He is as enthusiastic over dairying as when he came home from the meeting. This instance serves to show the value of the meeting to the boys and girls.

The best way to learn the real worth of Farm and Home Week is to attend it.

#### Popcorn Balls

3 cupfuls sugar  
1/4 cupful vinegar  
1/2 cupful water  
2 tablespoonfuls butter

Boil until brittle in cold water, stir in one-half teaspoonful soda dissolved in one-half tablespoonful boiling water. Pour this over four quarts of popcorn.

Typhoid is a disgrace to a community. It is a sign of lack of cleanliness and want of sanitation. Keep your community typhoid-free.

### The Biggest Help on the Farm

—the farmer's family is robust, healthy, strong. They want the best of everything to eat. The farmer's wife is an expert cook. She'll use only the best—that's why so many country housewives use Calumet Baking Powder. They insist on absolute purity—they know Calumet is pure in the can and pure in the baking—the most economical to buy and use. Try Calumet—if it isn't by far the best Baking Powder you have ever used, your grocer will refund your money. Received Highest Awards—New Cook Book Free—See Slip in Found Can.

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The Crosby Fur Company,  
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## TRAPPERS

Send for our special price list before making shipments to any one. Our prices will increase your fur income this season. You don't guess about your prices when getting ours, but get the highest always. When shipping to us you save the middleman's profit. We guarantee entire satisfaction and quick returns, pay express charges, and when so requested hold shipments separate for approval of returns. Wanted at once, 50,000 Kansas Skunk Skins.

FRED WHITE, The Kansas Fur Man,  
Beloit, Kansas.

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While corn culture under droughty conditions is largely a matter of taking chances with seasonal conditions, certain controllable conditions of soil and seed often determine the success or failure of the crop.

WHEN WRITING TO ADVERTISERS PLEASE MENTION KANSAS FARMER

## DO NOT SELL TOO CLOSELY

DESPITE the high prices of grain, it is an unwise move poultry breeders and farmers generally are making in selling off their poultry too closely this fall. The tendency during the past two months, we have noticed, is that breeders seem to want to get rid of their birds and convert as much surplus stock as possible into cash. All breeders are culling closely, while hundreds of breeders, we are informed, are sending not only their culled, but birds that would bring a fair price as breeding stock, to the butcher. Presumably this may be on account of the high price of grain, but nevertheless we believe it is a mistake and an unwise move.

Even if the prices of grain are high, breeders are receiving more for their poultry products than ever. Isn't it true, too, that when grain prices advance, the price of market eggs goes up proportionately, as well as all poultry products? There is a small chicken crop any way this fall, with a shortage of young stock especially, all over the country, which makes conditions and the outlook that much worse. There has been an unprecedented demand for breeding stock this season, and hundreds of poultrymen could, within the next month, receive three to five dollars each for birds which they have just now sold to the butcher or commission man for 50 to 80 cents each.

From various reports we find that one buyer, who gathers from house to house, using an auto truck, states that at many farms he is buying all the poultry the farmer has. He further states that very seldom this is stock the farmer is selling off preparatory to leaving the country or to take up other business, but that the farmer feels it is more profitable for him to sell than feed the birds at the present price of grain. We also understand that the commission men and packing houses have been able to buy more poultry this fall than ever before. Commission men frankly state they are getting more poultry during the years grain is high than when the feed prices are low.

At the most chickens are not heavy feeders, and the few dollars saved in the price of grain by selling off the birds will not near be equal to the cash received, if the birds are kept for eggs or sold as breeders.

Furthermore, we contend that the poultry raiser cannot afford to disorganize his poultry plans for the coming season for the little saved in the price of grain. To the poultryman or farmer who is selling off too closely with the expectation of buying hatching eggs and raising chicks in the spring, there is the possibility that he will be badly disappointed, even if eggs should not continue to be so high priced.

A scarcity of poultry means a scarcity of eggs, and from all indications, eggs will be mighty high this winter. One shipper informed me that his New York commission firm was expecting that eggs would be bringing 60 cents per dozen in a couple of weeks. That is, 60 cents net to the shipper, and what the consumer will then pay will be a caution. Of course, opposed to those that are selling off their birds, there are hundreds of other breeders who have the high winter egg prices in anticipation, and who are holding every available pullet, and the majority of their hens, too, for winter eggs, despite the high grain prices.

Consider carefully what you do, for the egg money is big money, in addition to what you can realize from your birds by selling them as breeding stock.—CAMPBELL L. CORY, in Poultry Success.

### Milk Makes Hens Lay

Hens should have all the milk they can readily drink; no kind of food is better adapted to egg production. Some milk mixed with bran will not fatten them, but if given freely the vessels in which it is fed will need frequent cleansing to prevent them from becoming offensive. With milk to drink, fowls having free range will do well enough on one meal a day, as this will encourage activity in scratching and picking up what they can find. This meal should

be given very early in the morning, and should be steamed clover or alfalfa, with a little corn and oat chop mixed with it and a little salt to make it palatable. The birds will have a ravenous appetite and they can eat all of this feed that they want without injury. Fresh milk is preferable for chicks but the sour milk may be used for mixing ground grain food for the adult fowls. There is 12 per cent of solid matter in milk, before it is skimmed, and from 6 to 8 per cent after skimming. Fresh milk does not contain any more egg-producing material than skim milk, except carbon, which is easily obtained from other foods. Give the hens all the skim milk and buttermilk they can drink. For chicks the milk should not be sour, as it may cause bowel trouble, but adult fowls may drink all kinds without injury. Curds are excellent for hens and they may be used with profit in mixing their mash.

### Do Not Mix Breeds

Pedigree and uniformity are as important in poultry as in other farm stock. Nothing is to be gained by crossing the different breeds. The result is always a mongrel bird, which has little to recommend it but a splash of color. This might appeal to some poultrymen who have a taste for variety, but it is not showing good poultry sense.

A flock of chickens in which no special breed predominates, rarely has the market value of a uniform flock, especially when the poultryman desires to sell his chickens for breeding purposes. There will be no demand for either the chickens or the eggs, aside from the general market requirements. He himself, although he may favor the mongrel stock, could hardly be induced to pay a fancy price for a setting of eggs, when he is not positive that two eggs in the setting will hatch the same kind of a chick.—T. S. TOWNSLEY, K. S. A. C.

### To Destroy Lice

Entomologists of the U. S. Department of Agriculture have demonstrated that all species of lice which infest poultry may be quickly destroyed by the application of a very small quantity of sodium fluorid, according to the annual report of the chief of the bureau of entomology just issued. Entire flocks of poultry were cleared of the parasites in this way and were found to remain free when ordinary precautions were taken against reinfestation by contact with infested fowls.

In connection with this work the entomologists of the department made the first complete studies of the chicken mite and determined that it depends exclusively upon the fowl for its food and will not develop in any stage on filth or similar substances. In tests of a large series of insecticides it was found that a few thorough applications of crude petroleum to the interior of poultry houses will completely destroy the mites.

As an egg is more than nine-tenths water, the importance of supplying the hens with all the water they require cannot be too strongly urged. Water not only enters into the composition of an egg as the leading substance, but it fulfills other purposes. It is as essential to the bird as a solvent to the food when hard grains are fed, as the gizzard that grinds the grain to powder, but the water is thus necessary to assist the digestion and to convert the food into blood. It is generally supposed that birds are not partial to clean water and will drink from filthy pools in preference to pure water. But the fact is, the hen is rather fastidious and will always prefer pure water and clean food when they are accessible to her. If there is no clean water in sight she is compelled to drink what is in sight. A laying hen requires more water than food.

Charcoal has an important place in the feeding of poultry, and granulated charcoal should be within the reach of fowls at all times. While charcoal has no strict nourishing properties, it is a powerful absorbent and will correct many disorders of the digestion and induce the fowls to eat more than they otherwise would.

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# OVERLAND RED

A Romance of The Moonstone Canon Trail

(Chapter XXVII, "The Riders"—Continued)

"Thirty miles," said Overland.  
"That's easy," said Bud Light.  
"What's easy?" questioned Williams.  
"Walkin' backwards," replied the face-tious Bud.  
"If you don't step on your neck," said Pars Long.  
"I'm gettin' cold feet," asserted Bud Light after a silence.  
"That disease is ketchin'," asserted Billy Dime.  
"I know it. I been sleepin' next to you," retorted Bud.

Brand Williams glanced across the fire at Overland, who smiled inscrutably. The undercurrent was unfathomable to Williams, though he guessed its main drift.

Suddenly Pars Long glanced at the foreman. "Brand," he said quietly, "we expect you didn't read all of that letter from your friend here. You said Collie was shot. You didn't say how, which ain't natural. We been talkin' about it. Where was he hit?"  
Overland saw his chance and grasped it with both hands. "In the back," he said slowly, and with great intensity.

Followed a silence in which the stamping of the tethered horses and the whisper of the fire were the only sounds.

Presently Miguel ran his fingers through his glossy black hair. "In the back!" he exclaimed. "And you needn't tell that he was run away, neither."

"In the back?" echoed Billy Dime.  
Overland and Williams exchanged glances. "You done it now," said Williams.

"Cordin' to agreement," said Overland.  
"Make it a wireless," said Billy Dime.  
"We ain't listenin', anyhow."

"Only thirty miles. What do you say, Brand?"  
"Nothin'."

"As usual," ejaculated Dime.  
"I say about three tomorrow morning," ventured Pars Long. "Light will be good about nine. We can do the thirty by nine. A fella would be able to ride round town then without fallin' over anything."

"What you fellas gettin' at?" queried Williams.

"Gophertown," replied Dime. "You want to come along?"

"Is it settled?" asked the foreman.

The group nodded.

"Well, boys, it would 'a' been my way of evenin' up for a pal."

"Then you're comin', too?"

"Do you think I'm packin' these here two guns and this belt jest to reduce my shape?" queried Williams in a rather hurt tone.

"Whoop-ee for Brand!" they chorused, and the tethered ponies shied and circled.

"I never rode out lookin' for trouble," said Williams. "And I never shied from lookin' at it when it come my way."

"Who said anything about trouble?" queried Billy Dime innocently. "I'm dry. I want a drink. I'm goin' over to Gophertown to get it. I'll treat the bunch."

"Which bunch?"

"Any and all—come stand up and down it."

"We'll be there when you call our numbers, sister. You comin'?" asked Pars Long, nodding toward Overland.

"Me? Nope. . . . I'm goin'. I'm goin' to ask you boys to kindly allow me the privilege of gettin' my drink first and by my lonesome. There will be a gent there with sore eyes. He got sore eyes waitin' and watchin' for me to call. I expect to cure him of his eye trouble. After that you will be as welcome as Mary's little lamb—fried."

"Bur-rie me not on the lo-o-ne pral-ree," sang Bud Light.

"Not while you got the fastest hoss in the outfit," said Williams.

"Collie's hoss is here," said Overland. "I'm ridin' her this trip. I kind of like the idea of usin' his hoss on this here errand of mercy."

Three—to-morrow mornin'!" called Billy Dime, as Overland disappeared in the shadows.

Brand Williams, the taciturn, the silent, stepped from the fire and strode across the meadow. He paused opposite the Yuma colt and gazed at her in the moonlight. He jerked up his chin and laughed noiselessly.

"Two-gun Jack Summers on that red Yuma hoss, ridin' into Gophertown with both hands filled and lookin' for trouble....God! He was bad enough when he was doggin' trouble. Well, I'm glad I'm livin' to see it. I was commencin' to think they wasn't any more men left in the country. I'm forty-seven year old. To-morrow I'll be twenty again....or nothin'."

## CHAPTER XXVIII

### GOPHERTOWN

Some towns "nestle" on the plain. Others, more aspiring, "roost" in the hills. Gophertown squatted on the desert at the very edge of a range of barren foothills. Its principle street was not much more than a bridge-path that led past the eleven ramshackle cabins, derelicts of the old mining days when Gophertown knew gold.

The population of Gophertown was of an itinerant order. This was not always due to internecine disputes. Frequently a citizen became overbold and visited his old haunts instead of remaining safely even if monotonously, at home. Train robbery was a sure passport to Gophertown's protection. Man-killing lent an added distinction to an applicant for hurried admission. Cattle and horse-theft were mere industries not to be confounded with these higher professions.

Overland Red had once wintered in Gophertown. Immediately previous to his arrival in Gophertown he had been obliged to maintain, in an unofficial capacity, his former prestige as sheriff of Abilene. The town of Abilene had sympathized with him heartily, but had advised him to absent himself indefinitely and within the hour.

The general store and saloon of the old mining camp still stood at the corner of the town facing the desert. A bleached and faded sign once read, "Palace Emporium." The letters now seemed to be shrinking from public gaze—vanishing into the wood as

though ashamed of themselves. The wording of the sign had been frequently and indifferently punctuated. Each succeeding marksman had exploded his own theory, and passed on.

Liquor was still to be obtained at the general store. Provisions were occasionally teamed in and were made up of peculiarly conglomerate lots. There were no women in Gophertown. There was little local gossip. There was no regular watch kept on the outlands. Gophertown felt secure in itself. Each man was his own argus. He was expected to know his enemies by instinct. He was expected, as a usual thing, to settle his disputes single-handed.

Silent Saunders was in the general store and saloon. He was disgusted in that he had been unable to induce the citizens to ride out with him and clean up Overland Red's claim. Overland had once been of them, even if briefly. He had been popular, especially as he was then the quickest man with a gun they had ever honored with their patronage. Also, the Gophertown folk had recently received a warning letter from the superintendent of a transcontinental railroad. They were not interested in Saunders' proposal.

Saunders, coming from the saloon, was not a little surprised to see a band of horsemen far out on the desert. He felt that their presence in his vicinity had something to do with himself. He counted the horses. There were six of them. He knew instantly that the riders were cowmen, although he could not distinguish one from another. He beckoned to the saloon-keeper.

"We could 'a' stopped that," he said, pointing toward the desert.

"Big bunch. One—two—three—six of 'em. Big bunch to come visitin' here."

Saunders gestured toward the canon behind Gophertown.

The saloon-keeper shook his head. "Don't think most of our boys will be back this week. Brandin' that bunch of new stock. Takes time to do it right."

"Well, here comes Parks and Santa Fe Smith," said Saunders. "That makes four of us."

"Mebby—and mebbly not," said the saloon-keeper. "That depends. Depends on the party that's callin' and who they're callin' on."

"There's Sago—just ridin' the ledge trail. That's five."

"Lige and Joe Kennedy are up at the corral," said the saloon-keeper. "They would hate to miss anything like this."

"Mebby they won't, if that bunch gets past us," said Saunders.

"Seen the time when you could handle them alone, didn't you, Si?"

"Yes, and I can now."

"Nix, Si. Your gun arms ain't what they was sence Overland Red winged you."

"How in hell do you know he did?"

"I could tell you more. But come on in and have one on the house. If I was you, I'd set with my back to the door and be taking a drink. Red Summers never shot a man in the back yet. If he's playin' for you, that gives you a chance to pull a gun."

"How about you?" queried Saunders.

"Me? None of my business. I'm here to push the booze."

"And you'll do your collectin' with a gun, or go broke, if it's Red Summers and his friends."

"Tryin' to scare me because you are?" asked the bartender.

"Red helped Kennedy out of a mix once. Kennedy is his friend."

"But Joe ain't here. What's gettin' into you? How do you know it is Red, anyway? You act queer."

"I got a hunch," said Saunders.

"Then you want to go into action quick, for when a gunman gets a hunch that he knows who is trailin' him, it's a bad sign."

Saunders drummed on the table with his fingers. Perhaps the riders were not coming to visit him, after all. He rose and stepped to the door. The oncoming horses were near enough for him to distinguish the roan outlaw Yuma—Collie's horse. Her rider's figure was only too familiar. Saunders fingered his belt. Unbuckling it, he stepped back into the barroom and laid the two-holstered guns and the belt on the table.

Parks, from up in the canon, rode up, tied his pony, and strolled to the bar, nodding to Saunders. Following him came Santa Fe Smith, a bow-legged individual in a sweater and blue jeans. He nodded to Saunders. Presently Sago, the Inyo County outlaw, came in, wheezing and perspiring. Saunders stepped to the bar and called for "one all around."

As they drank two more ponies clattered up and "Lige and Joe Kennedy joined the group at the bar. "Hutch and Simpson are comin' afoot," said Joe Kennedy.

"That leaves Wagner and the Chink to hear from," said the saloon-keeper.

"Wagner's sick. I don't know where the Chink is. Everybody seems to 'a' got up in time for dinner, this mornin', eh?" And big Joe Kennedy laughed. "This here bar is right popular jest now."

"Goin' to be more popular," said the saloon-keeper.

"That so?" exclaimed several, facetiously.

"Ask Saunders there," said the saloon-keeper.

"Friends of yours, Silent?"

"Yes. Friends of mine."

"Whole six of 'em, eh?"

"Whole six of 'em."

"Well, we won't butt in. We'll give you lots of room."

Saunders said nothing. He paid for the liquor, and, stepping to the table, sat with his back to the doorway. In front of him lay his guns, placed handily, but with studied carelessness. He leaned naturally on one elbow, as though half asleep. His hat was tilted over his brows.

From outside came the jingle of spurs and rein-chains and the distant sound of voices. Saunders began leisurely to roll a cigaret. He laid a few matches on the table. Several of the men at the bar grinned knowingly.

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**Jacks and Jennets.**  
Feb. 22, 1917—W. H. Roller & Son, Circleville, Kan., and Bruce Saunders, Holton, Kan. Sale at Holton.

**Jersey Cattle.**  
March 8—F. J. Scherman, Topeka, Kansas.

**Holsteins.**  
Feb. 6—H. C. Glissman, Omaha, Neb.

**Shorthorn Cattle.**  
March 30, 1917—Combination Sale, South Omaha, Neb. H. C. McKelvie, Lincoln, Neb., Manager.  
April 4-5, 1917—Central Shorthorn Association at Stock Yards Pavilion, Kansas City, Mo.

**Hereford Cattle.**  
March 6—Moses Bros. & Clayton, Great Bend, Kansas. Combination sale.

**Polled Durhams.**  
March 29, 1917—Combination sale, South Omaha, Neb. H. C. McKelvie, Lincoln, Neb., Manager.

**Poland Chinas.**  
Feb. 1—P. M. Anderson, Lathrop, Mo.  
Feb. 20—Fred B. Caldwell, Howard, Kan.  
Feb. 22—A. J. Erhart & Son, Ness City, Kan. Sale at Hutchinson, Kan.  
Feb. 23—P. Oliver & Sons, Danville, Kan.  
Feb. 28—Clarence Dean, Weston, Mo. Sale at Dearborn, Mo.

**Durocs.**  
Feb. 10—W. W. Jones, Clay Center, Kan.

**O. I. C. Hogs.**  
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**Holsteins.**

**Registered Horses.**  
Jan. 30-31, Feb. 1-2, 1917—Breeders' sale, Bloomington, Ill. C. W. Hurt, Manager, Arrowsmith, Ill.

**Durocs.**  
March 15—W. T. McBride, Parker, Kan.

Announcement is made from Steybrae Farm, San Mateo, California, that they have just completed the sale of twenty head of Ayrshires, the purchaser being William Rice, Lihue, Kauai, Territory of Hawaii. The purchase consists of nineteen females and one bull and will be shipped shortly. This is the second Ayrshire consignment to Kauai within the past few months. J. W. Clise having shipped two Willowmoor bred Ayrshires to H. P. Paye, Kekaha, Kauai, but recently. There is a world demand for Ayrshire cattle. South Africa, China, Australia, New Zealand, South America and Hawaii are at present the foreign countries seeking stock of Ayrshire breeding. This augurs well for the future of the breed and the prevailing high prices in America at present point to a big importation of Ayrshire cattle to the United States for breeding purposes at the conclusion of the war.

Phil H. Jones, of Nashotah, Wis., owner of the famous "Bryn-Cood" herd of Brown Swiss cattle, writes that his herd is doing well and that is a growing demand for Brown Swiss breeding stock. A feature of the herd at this time is the very fine lot of richly-bred young stock including young bulls that are herd header prospects by noted Brown Swiss sires.

J. S. Kennedy, of Blockton, Iowa, owner of the famous Cedarvale herd of Chester White hogs, writes that his herd is doing well. Mr. Kennedy keeps his herd immune at all times. He keeps all feed lots and houses in a sanitary condition and the result is that his hogs are always in a healthy,

## KANSAS FARMER

## HORSES AND MULES.



## Percherons and Belgians

SIXTY-FOUR HEAD REGISTERED STALLIONS AND MARES.  
THIRTY STALLIONS AND THIRTY-FOUR MARES AND COLTS.

To close up a partnership, the thirty-four mares and colts must be sold by March 1, 1917. I mean business. Come and see me.

**J. M. NOLAN, Paola, Kansas**

**FOR SALE THREE STANDARD-BRED COLTS:** One brown filley 4 years old, 16 hands high, weighs 1,200 pounds, sire Pactolus Ellwood 50246 by Pactolus 2:09, No. 9102; has been tracked a little and shows lots of speed. One black stud, 3 years old, stands 15.3, weighs 1,135 pounds, broken single and double, has been tracked some with success; is a full brother to the above filley. One black filley, name Luta Miller, 3 years old, broken to drive and quite clever, same sire and dam is Estan Selotta by Black-leer No. 46643 by Symboleer 2:09 No. 19869. Six head of Hereford males, 2 years old; 60 head of well-bred stock cows, 3 to 4 years old; 15 Poll Angus; 45 head Shorthorn males bred to the Hereford males; six head of high-grade Holstein heifers, two milking, two springing, bred to my Holstein male; one Holstein male, 2 years old next April, weight 1,200 pounds; four head of registered female Jerseys. **O. L. THISLER, CHAPMAN, KAN.**

## PIONEER STUD FARM

Established 1870

## FIFTY REGISTERED STALLIONS AND MARES

**JUST ARRIVED**—A new shipment of stallions and mares. If you are in the market for a good Percheron stallion or mare, now is the time. We can show you more bone, size, action and conformation than you will find elsewhere. Write or come today.

**C. W. LAMER & SON - SALINA, KANSAS**

Home-Bred Draft Stallions, your choice \$500 with the exception of two. Also mares for sale. **A. Latimer Wilson, Creston, Iowa**



**REGISTERED PERCHERONS**, 39 heavy 3 and 4 yr. stallions, 58 rugged 2 yr. olds, 41 yearlings. Can spare 25 reg. mares. 24 reg. Belgian stallions. Sires and dams from France and Belgium.

**FRED CHANDLER, R. 7, Chariton, Iowa**  
Above Kansas City.

## PERCHERONS FOR SALE

Five head pure-bred Percherons—Two mares, one 2-year-old stallion, two last spring colts. All good ones. Low price to the man that takes all.

**J. W. BARNHART, BUTLER, MISSOURI**

**DISPERSION SALE OF CLYDESDALES**  
One span of brood mares, regular breeders, in foal by imported stallion. One coming 3-year-old filley, one weanling, one coming 2-year-old stud colt. All show stuff. The thick, blocky kind, sound and best of breeding. **C. H. Wempe, Seneca, Ks.**



## JACKS AND JENNETS

**15 Large Mammoth Black Jacks** for sale, ages from 2 to 6 years; large, heavy-boned. Special prices for fall and winter sales. Fifteen good jennets for sale. Come and see me.

**PHIL WALKER, Moline, Elk County, Kansas**

**SIX BREEDS DRAFT STALLIONS**  
Pedigree and guarantee with each, \$450 and up. Time given.

**R. I. LITTLE, Good Block, Des Moines, Ia.**  
Barn Full of Percheron Stallions and Mares. Twenty-five mature and aged Jacks. Priced to sell. **AL. E. SMITH, Lawrence, Kansas.**

## AUCTIONEERS.

## Live Stock and Farm Auctioneer

Write or wire for date. I can please you. **LAKE BURGER, WELLINGTON, KANSAS**

**FRANK J. ZAUN** Live Stock Auctioneer.  
Write or wire for date. Independence, Missouri

**JOHN D. SNYDER**  
Experienced Auctioneer, wants your sale. Write or wire. Hutchinson, Kansas.

growthy condition. A feature of his herd just now is the outstanding lot of April boars sired by such sires as Wonder Chief 35467 and W P Sweepstakes 35067, two great sires of prize winners and out of prize winning sows. Mr. Kennedy reports a good demand for high class Chester White breeding stock.

M. E. Gideon, of Emmett, Kansas, the well known breeder of Percheron horses and Hereford cattle, recently purchased from the J. O. Southard herd at a long price, the very fine young bull, Dominier by Domino. This young bull is an outstanding prospect and Mr. Gideon will use him in his herd. The herds of Percherons and Herefords on Mr. Gideon's farm are among the best in the state. A feature of both herds at this time is the choice lot of young stock, including a very fine lot of young bulls, among them a May calf of Anxiety that now weighs 600 pounds. This calf is an outstanding prospect for a herd header. The young Percherons include some outstanding yearling stallions.

Some records were broken at the Aberdeen Angus cattle sale held at Chicago, December 6, during the International Stock Show. The top price for bulls was \$4,500, the highest price ever paid for an American-bred Angus bull at public auction. The top price for females was \$1,500.

D. J. White, of Clements, Kansas, has succeeded in building up one of the very high class herds of pure-bred Aberdeen-Angus cattle in this state. The breeding of his herd is the best of the breed. Mr. White has found Angus cattle very profitable and this year raised a choice lot of youngsters. A feature of his herd at this time is the choice lot of young bulls, cows and heifers, the kind that make good herd material.

James Arkell, one of the successful Poland China breeders of this state, reports his herd doing well. This year Mr. Arkell has bred a choice lot of sows and gilts by

## HORSES AND MULES.

## SHORTHORN CATTLE.

## Shorthorn Bulls

## For Sale, Ten Shorthorns

Eight months to two years old. Reds and roans. Large rugged fellows from heavy milking families of Shorthorn cows. Will offer these bulls at farmer prices. Come and see them. They are priced to sell.

**H. W. Estes, Sitka, Kan.**

## Barber Shorthorns

Villager Junior and Curley Dals Head Herd.

For Sale—Twenty coming yearling bulls, 20 yearling bulls, 40 cows and heifers, Scotch and Scotch topped. We have what you want. Come and see our cattle. Three hundred head in herd.

## F. C. Barber &amp; Sons

SKIDMORE - MISSOURI

## PEARL SHORTHORN HERD

Pearl, Dickinson County, Kans.

For Sale—Twenty bulls, 8 to 10 months old, red, white and roan. Can ship over Rock Island, Union Pacific, Missouri Pacific or Santa Fe. Come and see my herd.

Address **C. W. TAYLOR - ABILENE, KANSAS**

## OUR HERD BULL

Abbotsford Lad 2d 395841, pure Scotch, deep red and a good breeder, three years old, priced to sell quick. We are keeping every heifer calf sired by him, also some young bulls six to ten months.

**CHESTER A. CHAPMAN, Ellsworth, Kan.**

## CEDAR HEIGHTS SHORTHORNS

For Sale—Ten herd bulls from seven to eighteen months old. Scotch and Scotch topped. Priced reasonable. Come and see my herd. **HARRY T. FORBES, Bell Phone 59-N-1, Route 8, Topeka, Kansas.**

## Sycamore Springs Shorthorns

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

**H. M. HILL - LAFONTAINE, KANSAS**

## RIVERSIDE SHORTHORNS

Headed by Prince Valentine 4th 342179. Families represented, Orange Blossoms, Butterflies, Queen of Beauty and Violets.

**H. H. HOLMES, Route 1, Great Bend, Kan.**

## PURE-BRED DAIRY SHORTHORNS

Double Marys (Pure Bates), Rose of Sharon and Craggs. Offer 3-year-old herd bull. A snap. **R. M. ANDERSON, BELLOIT, KAN.**

**LOWMONT SHORTHORNS.**  
Brawith Heir 351808 heads herd. Inspection invited. **E. E. Heacock & Son, Hartford, Kan.**

When Writing to Advertisers,  
Please Mention Kansas Farmer

Longfellow Again and Chief Big Bone to the great boar, Arkell's Big Timm 80309. This boar was one of the prize winners in the future at the Topeka State Fair, 1916. He was sired by the 1,125-pound champion Big Timm and is one of the great young boars now in service.

Geo. M. McAdam, of Holton, Kansas, one of the consistent boosters for improved stock on Kansas farms and owner of choice herds of pure-bred Aberdeen-Angus cattle and Berkshire hogs, reports his herd doing well. The McAdam herds are noted throughout the corn belt for rich breeding and choice individuality and they are drawn upon heavily for herd material. A feature of the herd at this time is the choice lot of young stock, including a lot of outstanding young bulls and cows with calves at side. The cows have all been rebred to Blackcap H, a grandson of Blackcap Judy.

## REDHURST JERSEYS

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

## 120 Jersey Cows and Heifers

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

**J. W. BERRY & SON, Jewell City, Kansas**

## DORNWOOD FARM JERSEYS

Fine young bulls from Register of Merit and imported cows; descendants of Fontaine's Eminent, Pogs 80th of Hood Farm, and Golden Fern's Lad.

**DORNWOOD FARM, Route 1, Topeka, Kan.**

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

## Bargains in Jersey Cows

From one to a carload of good, young, registered Jersey cows, mostly fresh or soon due. Offered at sacrifice prices because short of feed and cannot winter. Also a few open heifers and young bulls. Write your wants or come and see this stock.

**The Ennis Stock & Dairy Farm, Horine, Mo.**  
(Just South of St. Louis.)

## LINS COTT JERSEYS

Kansas First Register of Merit, Estab. 1878. If interested in getting the best blood of the Jersey breed, write me for descriptive list. Most attractive pedigree.

**R. J. LINS COTT - HOLTON, KANSAS**

## AYRSHIRE CATTLE.



The coming breed. Dairymen and shippers who want milk that will pass every test are buying Ayrshires every day. Best milk for invalids and babies. AYRSHIRES are hardy, productive, profitable, prolific. Send for interesting information and list of nearest breeders.

**AYRSHIRE BREEDERS' ASS'N**  
C. M. Winslow, Secy.  
33 Park Street Brandon, Vt.

## AYRSHIRE BULLS

Age two weeks to two years, priced to move quickly at \$40 to \$80. Worth double. Bred for high production. All pure-bred and sure to get high producing heifers. Herd of nearly a hundred, established in 1906, located at Linwood, Kansas, near Kansas City. Tuberculin tested yearly, never found a reactor. Milk test over 4 per cent.

**Dr. F. S. SCHOENLEBER, Manhattan, Kan.**

WHEN WRITING TO ADVERTISERS  
PLEASE MENTION KANSAS FARMER



## POLAND CHINAS



## Faulkner's Famous Spotted Polands

We are not the originator, but the preserver of the old original big-boned Spotted Polands. The oldest and largest herd on earth. Every hog recorded in the recognized records. Bred sow sale February 14, 1917. Breeding stock for sale at all times.

H. L. Faulkner, Box K., Jamesport, Mo.

## DEAN'S MASTODON POLANDS

Boars sired by Big Bone Model by Long Big Bone, champion Iowa State Fair; Smooth Black Bone by Smooth Big Bone, also champion Iowa State Fair, and Dean's Tim by Big Tim, a 1,120-pound boar. Dams of offering all by noted big-type sires. All immune. Bred sow sale February 28 at Dearborn, Mo. Write for catalog.

CLARENCE DEAN

WESTON, MISSOURI

## Poland China Boars and Gilts

Twenty-five early spring boars and twenty-five gilts. Sired by I Am King of Wonder and Watt's King.

WM. WATT &amp; SON - GREEN CITY, MO.

## GREENWOOD FARM POLANDS

Bred gilts for sale. The very best of big-type breeding, sired by my 900-pound boar. Price, \$30 each. Send check with order. Satisfaction guaranteed.

M. F. RICKERT - SEWARD, KANSAS

## IOWA KING BRED SOW SALE FEB. 1

Will Sell 40 Head of Tops. Am offering now some choice herd boar prospects, June and July pigs. All immune. Send for catalog of sow sale and price on boars.

P. M. ANDERSON, LATHROP, MISSOURI

## LANGFORD'S SPOTTED POLANDS

Boars - Serviceable age, guaranteed to please. Breeding stock, both sexes.

T. T. LANGFORD &amp; SONS, Jamesport, Mo.

## Lone Cedar Poland China Herd

Good spring boars by Meyer's Orange and out of mature sows, at farmer's prices for thirty days; also fall and spring gilts, bred or open. Weanling pigs cheap. All immune.

A. A. MEYER - McLOUTH, KANSAS

## DEMING RANCH POLANDS

Twenty strictly high class boars, bred the same as our grand champion sow and other prize winners. They are herd headers. Also gilts and bred sows and 150 fall pigs. All immune.

H. O. SHEDDEN, Herdsman - Oswego, Kansas

## HEREFORD CATTLE.

## STAR BREEDING FARM---HEREFORD PLACE

## FOR SALE--100 BULLS

50 EARLY BULL CALVES  
30 COMING 2-YEAR-OLDS  
20 COMING 3-YEAR-OLDS

Herd headers and range bulls. Ten yearling heifers, twenty heifer calves and a carload of good cows. The very best breeding represented. Come and see me.

SAMUEL DRYBREAD, ELK CITY, KANSAS

## HEREFORD CATTLE

35 BULLS, 10 MONTHS TO 2 YEARS OLD.  
20 COWS AND HEIFERS.

Best breeding families. Bred to an Imported Britisher bull. Come and see me. Sale barns right in town.

T. I. WOODDALL, HOWARD, KANSAS

## WALNUT BREEDING FARM

Hereford Cattle, Shropshire and Cotswold Sheep, Berkshire Hogs. Thirty-five grandsons and granddaughters of Beau Brummel 10th for sale. Some extra herd headers at reasonable prices, breeding considered. Come and see my herd. Satisfaction guaranteed.

LEON A. WAITE, WINFIELD, KANSAS

## HEREFORDS AND PERCHERONS

Choice 2-year-old bull, weight 1,600 lbs.; extra good bull calves. One May calf, weight 600 lbs., outstanding herd header prospect. Two choice yearling Percheron stallions. Priced to sell.

M. E. GIDEON - EMMETT, KANSAS

## ANGUS CATTLE

## McAdams Angus Herd

Outstanding herd bulls and richly bred cows with calves at foot for sale. Cows with calves by the great young bull, Senator Blackcap, and rebred to Blackcap H. grandson of Blackcap Judy. Also the show breeding bull Ecuador Ito by Undulata Blackcap Ito. Will also sell some choice Berkshire gilts.

GEO. M. McADAM - HOLTON, KANSAS

## EDGEWOOD FARM

ABERDEEN-ANGUS CATTLE  
Twenty-five young bulls, also some good cows and heifers for sale. All registered.

D. J. WHITE, CLEMENTS, KANSAS

Main line of A. T. &amp; S. F. Ry., 145 Miles West of Kansas City.

## BROWN SWISS CATTLE.

## "BRYN-COED"

Ten choice young bulls by well selected sires and highly-bred heavy-producing dams. Prices reasonable.

PHIL H. JONES - NASHOTAH, WIS.

## POLAND CHINAS.

## HOLSTEIN CATTLE.

## HOLSTEIN CATTLE.

Clyde Girod, At the Farm.

F. W. Robison, Cashier Towanda State Bank

## HOLSTEIN FRIESIAN FARM, Towanda, Kansas

Pure-Bred Holsteins, all ages, strong in the blood of the leading sires of today, headed by Oak De Kol Bessie Ormsby 156789. Special offering of choice young pure-bred bulls, ready for service, from tested dams. Let us furnish you a bull and improve your herd. TWENTY-FIVE pure-bred females, young useful Holsteins with A. R. O. records from 12 to 26 pounds butter in seven days.

## BEFORE YOU BUY, TALK WITH US

We have an especially large, choice selection of extra high grade young cows and heifers due to freshen this fall and early winter, all in calf to pure-bred bulls. These females are large, deep bodied, heavy producers, with large udders, all well marked individuals and the right dairy type. Our offerings are at prices that challenge comparison for Holsteins of their breeding and quality. High grade heifer calves, \$25. Send draft for number wanted. Let us know what you want in Holsteins, and we will be pleased to send you descriptions and prices. Keep us in mind before purchasing. Wire, write or phone us.

GIROD &amp; ROBISON -- TOWANDA, KANSAS

## BRAEBURN HOLSTEINS

John Walker DeKol, 14 months, \$150. His sire had a world record dam and sire's dam; has 30-pound sisters; has a junior-two daughter with 342-14.05 in midsummer.

H. B. COWLES, 608 Kansas Ave., Topeka, Kan.

## REGIER'S HOLSTEINS

Holstein-Friesian A. R. O. bulls ready for service. World's record blood flows in their veins.

G. REGIER &amp; SONS, WHITEWATER, KAN.

## GALLOWAY CATTLE.

## GALLOWAY BULLS

SIXTY yearling and two-year-old bulls, strong and rugged; farmer bulls, have been range-grown. Will price a few cows and heifers.

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

## DUROC JERSEYS.

## Maplewood Durocs

We have a fine lot of pure-bred Duroc boars ready for service, and some choice spring gilts open, ready for December breeding. Price on boars, \$25; gilts, \$30. Send us your order.

Mott &amp; Seaborn, Herington, Kansas

## A HERD BOAR

We offer the splendid herd boar, Gold Medal 176231, also spring boars by him and the great boar, Country Gentleman 132541. All double immune. Prices reasonable.

W. R. HUSTON - AMERICUS, KANSAS

## TWENTY FIVE SPRING BOARS

Sired by Crimson Wonder Again Jr., first prize boar at Topeka Fair, 1916, and G. M.'s Crimson Wonder. Big rugged fellows ready for service. Immunized and priced to sell.

G. M. SHEPHERD - LYONS, KANSAS

## GUARANTEED DUROC BRED GILTS

Immune Duroc gilts with size, bone and stretch. Guaranteed in farrow. Shipped to you before you pay.

F. C. CROCKER, BOX K, FILLEY, NEB.

## DUROC JERSEY BOARS

For Sale—Fifteen spring boars, two fall yearlings, sired by Wonder of Kansas. All are large and smooth. Priced right and satisfaction guaranteed. Write your wants.

K. HAGUE - NEWTON, KANSAS

## DUROC JERSEY HOGS

Ten choice spring boars, real herd headers, the tops from forty head. Thirty-five spring gilts. Priced to sell.

W. A. WOOD &amp; SON, ELMDALE, KANSAS

## CHESTER WHITE HOGS

CEDARDALE CHESTER WHITES  
Extra good April boars, sired by Wonder Chief and W. P. Sweepstakes. Also herd boar, W. P. Sweepstakes, sired by Wildwood Prince, senior champion and grand champion Iowa, 1914. Cholera immune. Priced to sell.

J. S. KENNEDY, Blackton, Iowa.

## OHIO IMPROVED CHESTERS

O. I. C. Serviceable Boars—Yearlings sows and gilts bred for March farrow. Summer and fall pigs. G. P. Andrews, Dansville, Mich.

## SHEEP.

## RAMBOUILLET SHEEP

A lifetime experience proves the Rambouillet is easily the best sheep for Kansas conditions. We offer choice individuals, either sex, with good bone, size, form and fleece. E. D. KING, Burlington, Kansas.

## HAMPSHIRE HOGS

GEO. W. ELA'S HALCYON HERD  
Registered, immune Hampshire boars for sale. Valley Falls, Kansas.

ATTEBERRY'S HAMPSHIRE HOGS

Bred sows, \$25 to \$30 each. July gilts and boars, \$10 each for 30 days. Choice individuals. ATTEBERRY & SONS, Lancaster, Mo.

At the International Shorthorn sale held during the International Stock Show at Chicago, December 7, the top price for bulls was \$6,800, the top for females \$1,625, and the general average for the fifty-six head sold was \$956.

Purebred Registered  
HOLSTEIN CATTLE

The Virginia State College and Polytechnic Institute has developed, from its Holstein herd, seven of the highest record cows in the state, including Dione De Kol, holder of the state record for 7- and 30-days' milk and fat production. They also developed V. P. I. Viney Veeman, holder of the state record for senior two-year-olds. The leading state colleges and public institutions, by all tests, have found the Holsteins to be the best and most profitable of all dairy breeds.

Send for FREE Illustrated Descriptive Booklets.

The Holstein-Friesian Association of America

F. L. Houghton, Sec'y. Box 114, Brattleboro, Vt.

## Wichita Holstein Herd

High grade and registered cows, some heifers and heifer calves at reasonable prices. Bull calves at \$10 and up.

Wichita Holstein Herd, R. 4, Wichita, Kan.

## Bonnie Brae Holsteins

A fine bunch of high grade two-year-old heifers coming fresh. Also a few young cows and one well-bred registered bull old enough for light service.

IRA ROMIG, Station B, TOPEKA, KANSAS

## 23-HOLSTEIN-FRIESIAN BULLS-23

Best of sires. A. R. C. dams, fourteen over 20 pounds. Seven of the others from heifers with records of 14.89 to 19.2 pounds. The kind you want. We have only two cows in the herd with mature records less than 20 pounds.

Breeder for Thirty Years.

McKAY BROS., Waterloo, Iowa

## REGISTERED HOLSTEINS

We want to cut down our herd. Will sell ten or twelve choice cows, most of them young, also a few heifers.

M. E. MOORE &amp; CO. - CAMERON, MO.

## HOLSTEIN COWS

Holstein cows, springers or bred heifers. Very large, good markings, out of best milking strains, bred to pure-bred bulls of the very best blood. Special prices on carload lots. J. C. ROBISON, TOWANDA, KANSAS

CORYDALE FARM HERD

Offers for sale four bull calves two to four months, sired by Jewel Paul Butter Boy 94245. These calves are all nicely marked and from good milkers.

L. F. CORY &amp; SON, BELLEVILLE, KAN.

## Butter Bred Holsteins

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

J. P. MAST - SCRANTON, KANSAS

## The Cedar Lane Holstein Herd

We are now offering some exceptionally good bulls of serviceable ages at very attractive prices. These calves are sired by our 29.4-pound grandson of Pontiac Korndyke.

T. M. EWING, INDEPENDENCE, KANSAS

## HOLSTEIN CALVES

Registered and high grade Holsteins. High grade heifer calves two to four weeks old, \$20, delivered. We can supply you with anything in Holsteins.

CLOVER VALLEY HOLSTEIN FARM

Whitewater - Wisconsin

## GOLDEN BELT HOLSTEIN HERD

Herd headed by Sir Korndyke Bess Hello No. 165946, the long distance sire. His dam, grand dam and dam's two sisters average better than 1,200 pounds butter in one year. Young bulls of serviceable age for sale.

W. E. BENTLEY, MANHATTAN, KANSAS

## HOLSTEIN CALVES—Ten heifers and two bulls,

15-18ths pure, beautifully marked. 5 weeks old, from heavy milkers. \$20 each, crated for shipment anywhere. Write EDGEWOOD FARM, Whitewater, Wis.

## Breeder's Directory

ANGUS CATTLE.

Geo. A. Deitrich, Carbondale, Kan.

D. J. White, Clements, Kan.

SHORTHORNS.

C. H. White, Burlington, Kan.

RED POLLED CATTLE.

Mahlon Greenmiller, Pomona, Kansas.

HOLSTEINS.

C. E. Bean, Garnett, Kansas.

DORSET-HORN SHEEP.

H. C. LaTourette, Route 2, Oberlin, Kan.





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**BUY  
ON YOUR  
OWN  
TERMS**

## WITTE HIGH- GRADE ENGINES

are exclusive in design—easy to understand—easy to operate and proven doubly desirable by thousands of satisfied users. In fact, between 30 and 40 thousand buyers have accepted the above offer which I have repeatedly made in every farm paper and magazine worth while, during the past four years. The WITTE Engine stands on its merits, sells on its merits and is guaranteed to every buyer on its merits. My offer is open to you. If you need an engine I can ship the same day order is received. Wire order through your bank, or send personal check or draft—it's all the same to me. I'll handle it in any way that is fair for both. If you want the engine now, pay later—write me today.

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Tells you how to properly judge engines, and why the WITTE engine is better. It explains why I use 4-ring pistons where others use three; the advantages of cylinder and base separate; full length base to secure solid footing—no overhang of cylinder; vertical valves—no side wear;

safety spark shift for easy starting; automobile style of ignition, and many other distinctive WITTE features that you cannot get in other engines.

Write today for this Free Book—a post card brings it. Learn how and why I can save you \$25 to \$100. Get the whole interesting story of the immense WITTE Factory shown in the picture below.—ED. H. WITTE, Pres.

### WITTE ENGINE WORKS,

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1600 Empire Bldg.,  
Pittsburgh, Pa.

Kansas City, Mo.

# I Have the Largest Exclusive ENGINE Factory in the World, Manufacturing and Selling Kerosene and Gasoline Engines Direct to the User!

Any Worthy, Creditable Man, Anywhere in the U. S.,  
Can Now Own a High-Grade WITTE Engine  
on Practically His Own Terms.

**(No Money Down—Bank Deposit—Easy Payments or Cash.)**  
Select Your Own Engine—Kerosene or Gasoline.

I will ship the size and style engine you want, at once—portable, stationary or saw-rig—2 to 22 H-P. No delay, no waiting for engine to be built or finished. Only a big, successful factory, making thousands of engines yearly, and selling direct

to users, could offer you the engine quality, engine terms, and engine service that I can. If you need an engine for any purpose—pumping, grinding, elevating, wood sawing, spraying, cream separating, or if you have an electric light plant or shop machinery to operate,

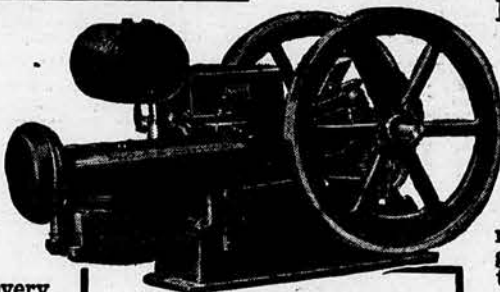
## Try a WITTE 90 Days

Do your work—prove that a WITTE Engine is the biggest engine value on the market—that WITTE prices will save you a lot of money. Your WITTE engine, if taken care of, should be just as good ten or twenty years from now as the day you start it. Some are using WITTE engines built 25 and 30 years ago. I Guarantee any WITTE engine you select for a period of five years from date of purchase. Furthermore, my guarantee has a million dollar factory back of it.

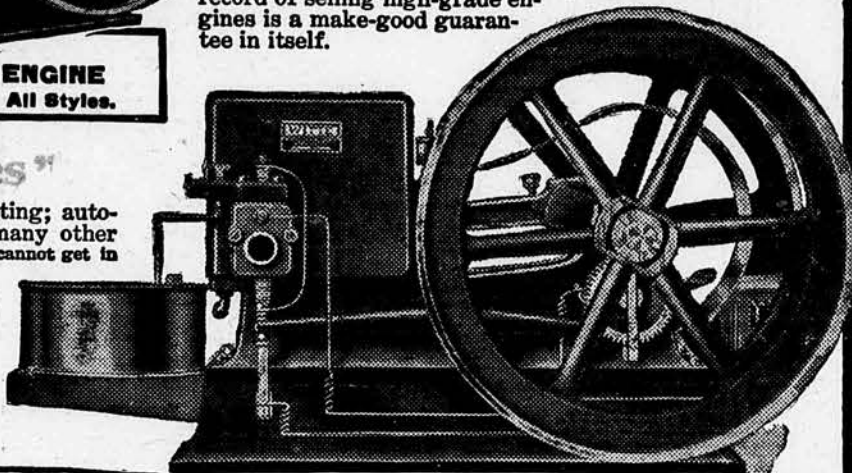
Don't forget that the low prices I am able to quote are possible **only** because of the large number of engines I am able to produce and sell. I make engines exclusively, consequently give my entire thought and time to the business—build into each engine 100 per cent efficiency. You really take no more chances in buying an engine from me than you would to draw money from one bank and deposit it in another. I save you the trouble of "trying out" engines you know nothing about, and my clean 30-year record of selling high-grade engines is a make-good guarantee in itself.



**HAND PORTABLE**  
Either Kerosene or Gasoline  
2, 3 and 4 H-P.



**KEROSENE ENGINE**  
2 to 22 H-P. All Styles.



**WITTE Heavy Duty  
Engine, 2 to 22  
H-P.**

