

SECOND ANNUAL TRACTOR SHOW—KANSAS CITY—FEBRUARY 12th to 17th

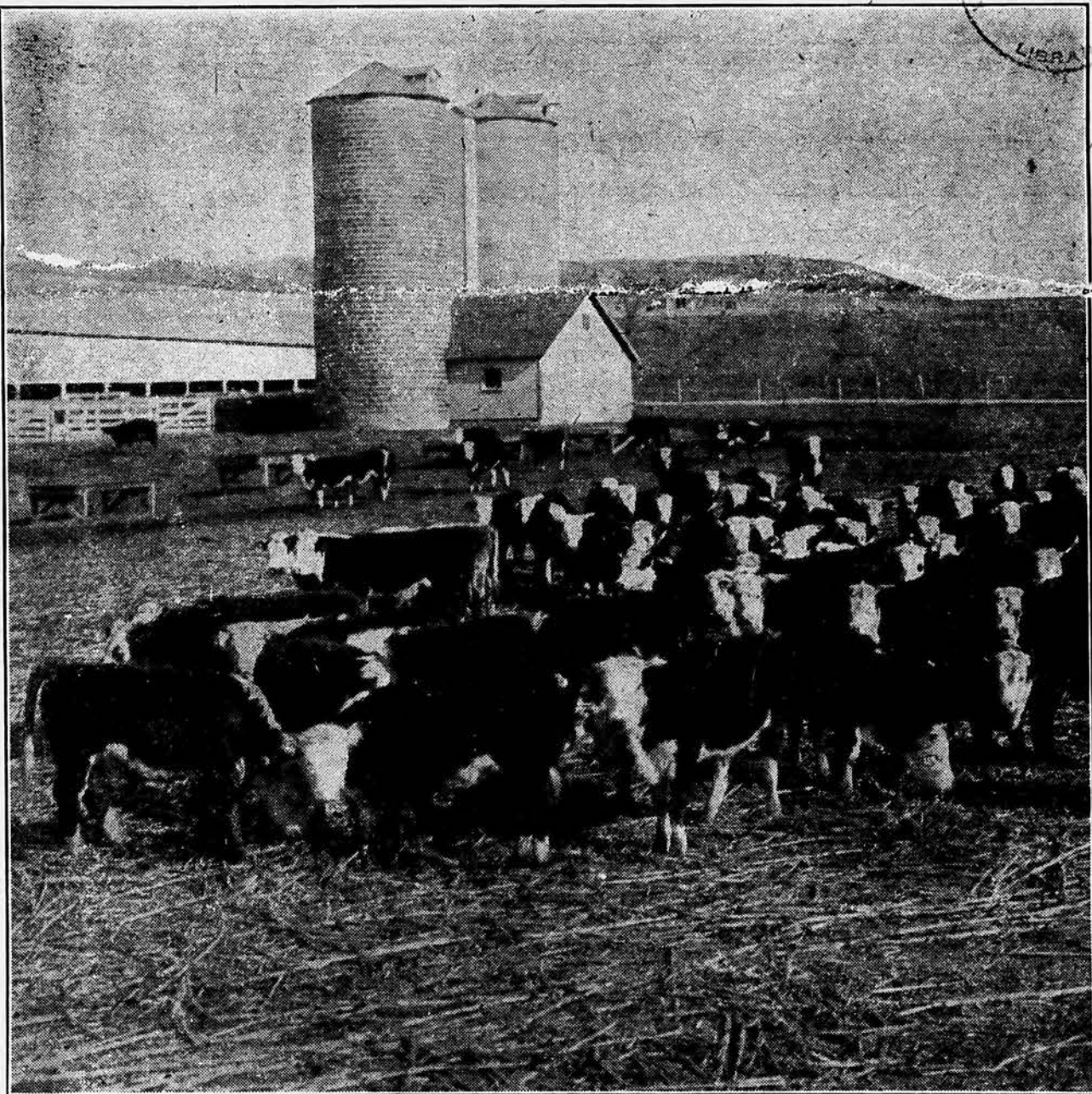
KANSAS FARMER

For the improvement



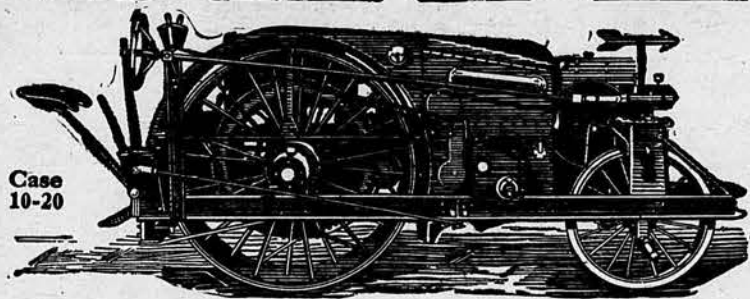
of the Farm and Home

Volume 55, Number 6. TOPEKA, KANSAS, FEBRUARY 10, 1917. Established 1863. \$1 a Year



Kansas Experiment Station Calves in Winter Quarters—Valuable Studies are Being Made in Cost of Producing Beef

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(486)

FARM POWER

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

THE farm tractor is generally a profitable implement if enough land is cultivated to use it economically. This is the opinion expressed by three fourths of the two hundred tractor users in Illinois to investigators for the United States Department of Agriculture. About one-third of the men in this list increased the acreage, on an average 120 acres to the farm, after buying the tractors and finding that they did not have room to use them to the best advantage.

The average size of the farm on which the two-plow tractor is used is 270 acres. The average size of the farms that make room for the five-plow tractor is 420 acres.

Here is the minimum size of the farm on which the Illinois tractor owners think their machines could be used profitably: Two-plow tractor, 140 acres; three-plow tractor, 200 acres; four-plow tractor, 250 acres; five-plow tractor, 320 acres.

The Illinois figures indicate that the large tractor is going out of use on farms. Thirty-nine per cent of the tractor owners estimate that a four-plow tractor is the best size for use on a 750-acre farm, while only 22 per cent of the men using tractors favored the eight-plow machine. None recommended one as large as ten-plow.

Storage Battery May Freeze

The care of the storage battery in a car is a matter of a great deal of importance. During cold weather it requires more attention than in the summer. The Studebaker Service for November calls attention to the fact that the man who keeps his car in commission during the severe winter months must give close attention to the condition of his storage battery. It should receive, if anything, closer attention during this period than it does at other times of the year.

Particular attention should be given to the specific gravity, and in this way determine that it is always fully charged.

As you appreciate, cold weather makes the work of the battery considerably harder than during the warmer months, for the reason that the motor is very often cold and hard to start and requires more effort for cranking. In a condition like this many owners will not assist the starting of the motor by priming the cylinders, but will continue to use the energy of the battery to turn the motor over until the motor fires. As a consequence the battery assumes a discharged condition and the gravity becomes low very quickly. There is then an excellent opportunity for the electrolyte in the battery to freeze.

Electrolyte will freeze at 20 degrees above zero in an empty battery which is indicated by a specific gravity of 1.12. A specific gravity of 1.16 indicates a battery three-fourths discharged. It will then freeze at zero.

In a full battery the electrolyte has a specific gravity of 1.28. By frequent use of the hydrometer during cold weather it is possible to know the condition of the battery and by keeping it charged there will be no danger of injury through freezing.

Electricity from Wind Power

Electricity generated by wind power in sufficient amount to supply a large farm has been found to be possible as a result of some experimental work done by Prof. C. E. Reed of the electrical engineering school of the Kansas Agricultural College.

Preliminary tests were made on this proposition three years ago, and enough success was had to make it seem desirable to continue the tests. In these tests the generator was belted to the windmill at the foot of the tower. Friction losses were enormous. It took a nine mile wind to start the mill and the noise was distracting.

With the first series of tests the total cost of the plant was \$775, whereas a gasoline engine plant of the same power and storage capacity would have cost \$500. One-sixteenth of the time lights would be cut off because the wind veloc-

ity was too small to run the mill. To overcome this disadvantage a large battery is necessary to store up enough current to last during the calm spells.

In the tests now being conducted, the generator is mounted on the head and geared direct to the mill. Ball and roller bearings are used throughout so that a six mile wind or less will start the mill. The cost of this plant is estimated at \$750, but improvements in the windmills would reduce this to \$500.

The present objection to the use of windpower for developing electrical energy is the first cost of the outfit. Until it is possible to get windmills which will run on light winds the cost will not be cut down on account of the size of battery necessary to store up current for use when the mill does not run. With a windmill designed for higher speeds than are used in present mills there would be little time during the year that the winds would not be sufficient to operate it, at least a part of the day.

It is probable that one of these plants would not be more than sufficient to take care of one or two small residences or of one large farm plant, although in Europe, large and expensive plants have been developed that successfully light small towns.

Practical Engine Work

Small gas engines designed by W. W. Carlson, superintendent of shops in the Kansas Agricultural College, are being manufactured by students of the division of engineering. This addition to the courses in the shops was planned last year with a view to giving the students practical work that would be both interesting and instructive. Such work will thoroughly familiarize students with the internal combustion engine.

While the engine is not patterned after any small engine on the market, no system has been used that has not proved successful. The construction is so simple that first term students can make every part.

The engine is of the four-cycle type, with jump spark, hit and miss governor, and either a tank or a hopper cooling system. The bore is 3½ inches and the stroke five inches.

The engine complete, when set up on skids, weighs approximately 225 pounds. When running at 600 revolutions a minute it will develop two horsepower. The engine may be used for driving a forge, grindstone, saw, and other shop machinery on the farm.

Anti-Freeze Liquid

Alcohol is the cheapest and one of the best anti-freeze liquids on the market for the automobile. It will not affect the hose connections between the engine and the radiator and because of its low freezing point will lower the freezing point of the cooling solution in the water system of a gas engine to as low a point as desired.

Several anti-freeze solutions are on the market, but the majority of these are composed of glycerine and alcohol, the glycerine being used to stop the excessive evaporation of the alcohol. This addition of glycerine is not imperative, however, as there is little evaporation unless the solution is brought to the boiling point by the overheating of the engine. These solutions may be mixed at home and will be as efficient as those purchased.

For zero weather, three-fourths water and one-fourth alcohol should be used. When the temperature is 10 degrees below zero a solution of 70 per cent water and 30 per cent alcohol should be used.

The radiator should be filled from time to time with a solution of the same strength as the original.

In buying an engine it does not pay to buy a cheap one or one of an unknown make. It is easy enough to build an engine cheaply from cheap materials and then sell it at a low price, but that kind of an engine balks, makes delays and wears out quickly, so that the owner finds he would have been far better off if he had bought a good, reliable, first-class engine to begin with.

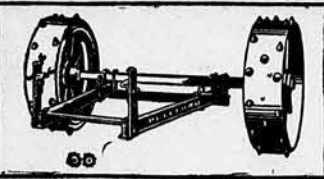
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MORTGAGE TAXATION

An attempt has again been made to pass legislation that would relieve the owner of mortgaged property from paying taxes on its full valuation. This question has long puzzled legislators.

It requires no argument to convince the man having a six- or eight-thousand-dollar mortgage on his farm that there is injustice in making him pay taxes on its full valuation when he is paying 6 or 7 per cent interest on the loan. The kernel of the whole matter is that there is no way to hide the farm or real estate whereas the mortgage can be hid and a large proportion of them are not taxed because their holders do not report them. Our law now provides that notes, bonds, mortgages, and money shall be assessed for taxation, but because this kind of property is hard to find we have gone along compelling the owner of mortgaged real estate to carry the full load and thousands of dollars of securities based on farm values annually escape their just share of the burden.

We are offering no suggestions as to how to overcome this injustice in equalizing the burden of taxation. Various legislatures have wrestled with the problem without success. It all seems to depend on finding some way of compelling the mortgage-holder to accept his tax-paying obligation. The argument is frequently advanced that if the mortgage is taxed the result will be to pass on the tax to the borrower in the form of higher interest charges or else money will be driven from the state. We have moved forward some in Kansas since the days when vast sums of outside capital were essential to the development of our industries. This fact certainly has a bearing on the question of taxing securities.

The thing that must be done is to find some way of compelling people who have farm mortgages and other securities to be honest with the government which protects their property. The present legislature, like previous legislatures, apparently gives the question up as too hard a nut to crack. Reducing the assessed valuation of our real estate to the amount of the equity of the owner meant too big a reduction in the taxable property, and as a result the proposed bill was voted down.

MONEY FOR STATE SCHOOLS

An illustrated lecture on the work of the Kansas Experiment Station and its various branches was given in Representative Hall one evening last week, by Director W. M. Jardine. We do not see how a member of the legislature could listen to such an address and then go on record as favoring smaller appropriations to carry on the great work being done.

It is hard for those who have farmed during the past thirty or forty years to realize the situation confronting the young man who starts farming now. Director Jardine made the statement that no young man could go on a farm valued at \$100 to \$150 an acre, make a living and pay for the farm if he followed the same methods his father before him had followed. Almost 40 per cent of our Kansas farms are now operated by tenants and the number is increasing and will continue to increase unless a type of farming can be developed that will bring larger returns, and this involves marketing and distribution as well as production.

The encouraging feature is that all over the state there are conspicuous examples of young men who are demonstrating that it is not an impossibility to make good at farming under present-day conditions.

The work of the experiment station is fundamental to the teaching of up-to-date farming practice. Without research laboratories there could be no progress in medicine, engineering, or any of the great professions or industries, and it is fully as true of farming. The experiment station has justified its existence over and over again. The development of the wheat "P-782" is an illustration of the great work an experiment station can accomplish. There is no guess work about this new wheat. It has been tried all over the state in direct comparison with the best local varieties

grown. During the past three years there have been fifty-nine different tests on twenty-nine farms of the state. If this new variety had been planted on all the wheat fields of Kansas during this period and had produced the same increase over the best local varieties that it did in the co-operative tests, it would have meant almost sixty-three million dollars additional money for Kansas wheat growers.

Every year there is quite a large acreage of wheat that winter-kills and the ground must be planted to spring crops. Valuable seed is wasted and time thrown away. During a period of ten years an average of over 9 per cent of all the winter wheat sown has been winter-killed. The station has been conducting some experiments in methods of planting wheat which point to the possibility of overcoming almost entirely this danger from winter-killing.

But greater even than its immediate effect on farming methods, is the possibility the station work offers for making of agriculture a really scientific subject that can be taught to students on a plane with university courses in engineering, medicine, or law. As a result of the large amount of research work done by stations all over the country, this is now possible.

The support of all this work seems to require an immense sum of money and our representatives and senators always come to Topeka with the feeling that the folks at home are going to expect them to pare down to the limit the appropriations they make for the work of the station and the big state schools. We believe our people should demand a dollar's worth of service for every dollar appropriated, but in thinking of this matter of holding down taxes let us get things in their true proportions. Our big taxes are not state taxes. The big burden comes from what we spend right at home. During 1916 a thousand-dollar valuation called for only \$1.30 in taxes to the state and less than 65 cents of this was spent on all the state schools. Fully nine-tenths of our taxes are other than those imposed by the state.

The great work carried on by our experiment station and the big state schools should certainly not be hampered for lack of funds. Every citizen of the state is interested in what they do and receives more benefit than the amount he has to pay for their support.

COMMUNITY CENTER

We were impressed with the truth of a recent statement made by Walter Burr of the Rural Service department of our agricultural college, that a community center is not a place or a building, but the spirit of community service. A building in the center of a neighborhood is by no means an assurance that the neighborhood will center its social and other community activities. The people of the community must first be filled with a zeal to work out together plans that will make the home neighborhood a better place to live. They must take up together practical questions having to do with the community as a whole. When such feeling and spirit exists a center will be found or created through which it can work. It may be a school house. No better place can be found for centering community interest than a thoroughly modern, well equipped school building. Sometimes a church can be maintained as a community center. In other places the community hall built for the purpose is the outgrowth of the development of the real community spirit which must first of all exist among the people of a neighborhood before anything as a community can be accomplished. But even a community hall can most fully serve its purpose by being located so it can be of use to the school. The school is really the institution in a neighborhood around which the spirit of community co-operation most easily centers.

FIRE EXTINGUISHERS ON THE FARM

The average farm house and other buildings on the farm are as a rule absolutely without fire protection. If a fire starts, the building goes. The chemical fire extinguisher does its work by throwing a stream over

a fire, putting it out before it has gained headway. The material discharged quickly volatilizes into a non-combustible gas that settles down over the fire and smothers it. All fires have small beginnings and the quickly available chemical extinguisher will put out many before they have gained headway. Public buildings are compelled by law to have the extinguishers in the various rooms. Hand chemical extinguishers ranging in price from \$5 to \$20 are now on the market. They are light enough to be carried from one room to another and can easily be operated by a woman.

The wide use of kerosene and gasoline stoves and lamps, gasoline engines and automobiles on the farm increase the fire danger. Water should not be used in putting out fires involving oil or gasoline. It simply spreads the flames. The stream from the chemical extinguisher producing its gas blanket, quickly smothers a fire of this kind.

Some types of extinguishers are quite as good in twenty years as when new. If used they must of course be re-charged, which can be done at a comparatively small cost.

We believe farm people should by all means take all the precautions possible against fires. In many cases it is not merely a matter of property—lives are lost that might be saved by having a hand extinguisher near.

DIARIES FOR FARM ACCOUNTS

There are two kinds of records in which farmers are particularly interested—receipts and expenses, and records of the daily work such as dates of planting and harvesting, yields of various crops, feed consumed by stock, and numerous items. Many farmers keep such records in a diary and find it a great help although not as valuable as a more elaborate system of farm accounts.

Farmers who feel that the diary is the only form of record they can keep will find valuable suggestions in Farmers' Bulletin 782, recently published by the Federal Department of Agriculture. This bulletin suggests a number of ways in which the diary can be made especially helpful. It contains also a number of blank forms and other information in connection with using the diary on the farm. Write to Division of Publications, Department of Agriculture, Washington, D. C., for a copy of this bulletin.

KANSAS CITY TRACTOR SHOW

Next week the Kansas City Tractor Club will hold its second tractor show. The one held last year was the biggest indoor exhibition of its kind ever held.

Field demonstrations of tractors have been popular, but the indoor exhibition permits the examination of working parts in a way that is impossible in the field. Prospective tractor purchasers are wise in requiring the field test, but they have had enough experience with machinery to know that it pays to study the mechanical details of such equipment as a tractor.

The Kansas City show will be a technical show and every facility possible will be offered to make it easy to learn the details of construction and the kind of material used in the different tractors on exhibition. Fully fifty different manufacturers will be represented at the big show next week. Two or three days spent in studying the different models will give the visitors complete information regarding the types of tractors now being made. Companies from New York to California have entered. The two-wheel, three-wheel, four-wheel, drum, and caterpillar types will all be represented. There will also be a complete exhibition of power machinery of all kinds. The show will be held in a mammoth double-wall tent almost 500 feet long. This tent will be floored and heated by forty-five salamander stoves.

An admission fee of 25 cents will be charged, which will keep out mere curiosity seekers. This will insure the visitor ample opportunity to study the exhibits without being annoyed by the crowds always in attendance at such shows when they are free.

SAVE CALVES FROM BLACKLEG

New and Reliable Method of Prevention Worked Out at Experiment Station

By Dr. F. S. Schoenleber, Head of Veterinary Dept., K. S. A. C.

ASERUM has been produced from the horse which stops immediately losses in a herd where calves are dying from blackleg. A germ-free vaccine or aggrassin also has been produced from calves, which when used upon healthy calves will give permanent immunity from the disease.

Little publicity has been put on the experiments at the college, because of existing skepticism on the part of the part of the United States Department of Agriculture and individuals interested. It was thought wise to wait until enough had been made to make the evidence conclusive. A bulletin giving the results of the laboratory tests of the vaccines and the results obtained from their use on more than 30,000 cattle under farm and range conditions is now in course of preparation and will be published for general distribution in the near future.

In herds where the disease is present it is necessary to make two applications of the college vaccines which means that the calves must be handled at two different times. This means, also, that before the owner knows his herd is infected, he has lost some calves. Putting the value of these calves in dollars and cents into the germ-free fluid vaccine, which requires but one handling of the animal, and giving to healthy animals, means there will be no losses.

This single vaccination with this germ-free fluid cannot transmit any disease to vaccinated calves or to those calves in a herd that have not been vaccinated—in fact there is absolutely no danger of infecting other animals. Another important consideration is the fact that the vaccine will not throw the calves off their feed.

It costs from 35 to 40 cents to vaccinate a 50-pound pig, valued at approximately \$5, against cholera, while it costs but 50 cents to immunize a \$40 calf against blackleg. The veterinary department is experimenting with other animals to see if a cheaper product can be put out. The process of making the vaccine on a small scale is at present comparatively expensive. No commercial concern is now putting out this fluid, but applications have been made to do so by firms in Muscatine, Iowa, and Wichita, Kansas.

In the spring of 1905 when I took charge of the veterinary department, I found that the department was sending to cattle raisers several hundred thousand cubic centimeters of blackleg vaccine annually. At this time occasional reports would come to the office complaining of the inefficiency of the vaccine. Upon investigation it was found that at times the vaccine killed a certain percentage of the calves vaccinated while at others it did not protect them for any length of time. Further investigation showed that all the blackleg vaccine used, no matter from what source, acted in the same way. From year to year these complaints increased in number, showing that the disease was becoming more and more virulent. Some cattle raisers complained that they vaccinated three, four, and even five times, and still lost calves, the losses running up in some cases to more than 10 per cent.

These conditions prompted the department to look into the situation critically and see what could be done. In 1912 the work of analyzing the testing vaccine of the different makes was begun. Samples of vaccine were bought in this country and in Europe—including samples from the government. These were all tested in the bacteriology laboratory, under the microscope, upon guinea pigs and upon calves.

After a number of years of experimentation a serum was perfected which has never failed to effectually stop the disease, and in some instances has cured animals apparently beginning to show signs of the disease. A few well advanced cases have been cured with special treatment with large doses of the serum. This procedure, however, is only recommended in exceptional cases, as the expense is considerable and the chances of success are small even in the hands of a person experienced in the work. In practically all cases, animals which are apparently well and show no symptoms of blackleg at the time of injection will remain well, and if symptoms develop

AHIGHLY potent blackleg serum can be produced from the horse.

This serum exerts a curative action upon calves in the early stages of blackleg.

A fair degree of active immunity may be produced by administering virus to calves a few days after the serum has been administered.

Filtered oedematous fluid from blackleg lesions possesses great immunizing properties.

In the field both serum and the filtered fluid—germ-free vaccine—have permanently protected calves upon premises where spore containing vaccines have failed.

Attenuated spore vaccines commonly used do not insure permanent immunity.

It pays to insure calves by using germ-free fluid vaccine. The new method of blackleg prevention is expected to revolutionize the cattle-raising industry in Kansas.

shortly after using the serum another application undoubtedly will save the animal.

In June, 1916, the method of producing and administering these vaccines had been sufficiently developed to warrant the Kansas Experiment station in making a preliminary announcement concerning them to the agricultural colleges of the country, and to the cattlemen of Kansas and others who attended the Feeders' convention at Manhattan June 9, 1916. Later, representatives of the veterinary departments of the state colleges of Texas, Kentucky, Nebraska, and California visited the institution and received full information regarding the technique of this process. Since that time the College has furnished cultures of the blackleg organisms to the institutions of Kentucky and Texas, presumably for the production of these serums.

METHOD OF PREPARING SERUM

In the preparation of the anti-blackleg serum, horses are injected with gradually increasing doses of blackleg culture. Usually about six doses at intervals of about ten days are necessary to produce a potent serum. The initial dose is fifty cubic centimeters and the maximum dose 700 cubic centimeters, when the point is reached in the administration of the culture at which it is assumed wise to test the serum for potency. Ten days after the last treatment, a sample of blood is drawn from the jugular vein and allowed to clot spontaneously. The clear serum is drawn off and three guinea pigs are inoculated subcutaneously with .55 cc. of the same.

Twelve hours later these pigs receive one gram of a very virulent unattenuated blackleg virus. If the serum is fully potent the guinea pigs will not develop serious symptoms. The virulence of the virus used in serum testing should be determined before each test. Fully virulent virus should kill guinea pigs, weighing from 12 to 14 ounces in doses of from two to 2.5 milligrams.

The protective action of the serum upon calves is tested by administering

from 15 to 20 cc. of serum and three days later giving the calves an injection of fully virulent blackleg virus. The virus had been previously tested for virulence on guinea pigs and calves and had been found to be fully virulent. These doses of virus, therefore, would have produced death in a large majority of these calves had they not been protected by this serum.

Since the susceptibility of calves to blackleg varies so greatly it is reasonable to suppose that the amount of serum necessary to protect against such large doses of virus likewise will vary. It is not anticipated that 15 cc. of serum would in every instance protect a very susceptible calf against a gram of very virulent virus.

HOW TO USE BLACKLEG SERUM

The virus is usually made into small pellets and administered with the ordinary pellet injector.

Experience gained from the vaccination of more than 30,000 calves has demonstrated that 15 to 40 cc. of serum is sufficient to protect calves against one or two pellets made from slightly attenuated or pure virus.

When serum is administered to calves showing the first symptoms of blackleg the symptoms, as a rule, improve or disappear and recovery takes place. Treatment of calves in the advanced stages of blackleg is unsatisfactory. For curative purposes doses of 300 to 500 cc. of serum are administered intra-muscularly in affected region. If the symptoms persist, a second dose is administered from 12 to 24 hours later. If the disease is in the incubation period only and the symptoms have not yet appeared, it seems probable, from our observation, that a dose of from 15 to 40 cc. of serum will prevent the further development of the disease. This is a point that is difficult to determine by direct experiment.

It is generally recognized that the losses occurring from 12 to 48 hours after vaccination are limited to calves having the disease in the incubation stage when they were vaccinated. The absence of such losses in the serum treated herds

is probably due to the curative action of the serum.

IMMUNIZATION BY SERUM AND VIRUS

The passive immunity produced by the serum is of short duration. To produce active immunity of a certain degree from one to two four-milligram virus pellets are administered three days after the injection of the serum. The degree of immunity produced by this pellet has in most instances been sufficient to protect calves from natural infection even on very badly infected premises and where the ordinary spore containing vaccines had failed to produce protection. Of more than 30,000 head of cattle receiving this treatment, there have been reported only five instances where a calf subsequently developed blackleg.

While the immunity produced by this method has been sufficient to protect the animals against natural infection, it has been found that this immunity is not sufficient to protect against the effect of the injection of a gram of virus.

IMMUNIZATION WITH GERM-FREE FLUID

Schobl has shown that the oedematous fluid derived from blackleg lesions when freed from living organism possesses marked immunizing properties.

The oedematous fluid was collected from the tissues of calves artificially infected with blackleg. This fluid was sterilized by filtration. The immunizing properties of this germ-free fluid or aggrassin are shown by the fact that doses of from 8 to 15 cc. were sufficient to protect calves against doses of virus which promptly killed the non-vaccinated animal used as a check.

In the field this germ-free vaccine has given excellent results. Doses of 5 cc. have produced in calves six months of age or older sufficient immunity to protect them for the remainder of their susceptible period. No losses have occurred in vaccinated herds except that occasionally a calf succumbed within 12 to 24 hours after the treatment. These calves were doubtless affected with blackleg in the incubation period when vaccinated and such losses are to be expected after vaccination with any agent not producing a passive immunity.

WHEN TO USE SERUM

Blackleg serum is to be used when the disease has appeared in the herd—it will immediately check its progress—and on calves which have access to badly infected premises, or where blackleg recently has appeared in the immediate vicinity or in the same pastures. This serum will protect for a short time—10 days to two weeks—but for a long period of immunity it must be followed in three days with a very strong specially prepared dose of vaccine. This vaccine is much stronger than could be used safely on calves without the serum, as it would likely produce blackleg in some of the calves that had not first received the serum three days previous. It is perfectly safe, however, when given according to directions, as has been demonstrated by using it on more than 30,000 animals.

The serum should be used also on particularly valuable calves, as it protects the animal against latent or undeveloped cases of blackleg which frequently show up in apparently healthy animals after an ordinarily safe dose of vaccine has been used.

The well-fed cow is almost sure to return more profit than the poorly fed one. A poorly fed cow will often be found to give no profit. At the Ohio Experiment Station, a cow increased her milk production 80 per cent through better feeding. This increased quantity of milk cost seventy-seven cents less per hundred pounds than what she produced on the small quantity of feed and the butterfat cost twenty-three cents less per pound. This extra feed would not have been sufficient to feed another cow. By feeding the one cow well about as much milk was secured as by feeding two cows poorly. Feeding the one cow well required less work, less barn room, less feed and less pasture, than feeding two cows poorly. In many cases the quickest way to increase the profits from a herd is to feed and care for them better rather than by increasing the number.

Chicks should not receive feed until they are 36 hours old.



GATHERING INDIAN RUNNER DUCK EGGS.—THEY ARE GREAT LAYERS OF FINE QUALITY EGGS

GENERAL FARM INQUIRIES

Something For Every Farm—Overflow Items From Other Departments

A WESTERN Kansas reader asks what would be a fair arrangement between land owner and renter where the owner furnishes the land and buildings, has a half interest in all stock, and pays for half the feed if any has to be purchased. This includes pasture land as well as farm land. The renter has a half interest in all live stock, furnishes all machinery and labor, also provides upkeep of machinery and harness, furnishes all seed and pays all expenses of threshing and silo filling. He also scatters all the straw and keeps up fences and improvements.

In a lease of this kind the two parties are really partners in the business and each should receive compensation in proportion to what he invests in the business. The simplest method is to divide the obligations of each so that they can share equally in the profits. In a partnership farming proposition of this kind, a fair division of the obligations is as follows: The lessor or landlord to furnish the farm, including all improvements, and pay all taxes and insurance. He should furnish material for all repairs and needed improvements such as new fences, barns, sheds, or granaries. The lessee or renter should furnish all work horses, harness, implements and machinery and the labor necessary to operate the farm in accordance with the stipulated agreements. He ought to make all repairs and improvements not requiring skilled labor. In the interest of the maintenance of soil fertility there should be stipulations relative to hauling out manure, scattering straw, and prohibiting the burning of any straw or stalks.

The two parties should jointly furnish all seed grain, grass seed, clover or alfalfa seed sown during the period of the lease. They should also jointly own the livestock other than work horses and share equally in the cost of purchased feed for live stock, including any hired pasture. They should furnish jointly binder twine and fuel for threshing, silage cutting, fodder shredding, hay baling, etc., and the machine bills for the same. Each should pay one-half the taxes on personal property owned in common. In the sale of live stock and other products they should share equally. Such details as the place of delivery and the manner of selling, should be stipulated in the contract.

In order to be successful there should be a complete understanding between the parties on all points and it is always a good plan to go over in detail the various items and have them reduced to writing and placed in the lease. A very satisfactory form of stock-share lease embodying the essential points, was adopted at a landlord-tenant conference held in Winnebago County, Illinois, about a year ago. The terms of this lease had been given careful consideration by both landlords and tenants and with some slight modifications it could be very satisfactorily used in setting forth the agreements between Kansas landlords and tenants who desire to enter into a stock-share farming arrangement.

If any of our readers would like to have a copy of this stock-share lease to which we have referred, we will be glad to furnish it.

Repairing Stave Silo

C. P. F., Osage county, asks about repairing a two-piece stave silo which is not absolutely tight. He bought this silo five years ago last fall. The following spring after it was emptied it blew down during a storm. Some of the staves were broken and quite a number had part of the tongued edges split off. After getting a few new staves he put the silo up again but has had considerable trouble in keeping it tight. He has carefully tightened the hoops, used roofing cement and other similar materials to point up the cracks, but still has spoiled silage, especially where the staves are spliced. He has thought of several methods of repairing his silo, such as putting iron siding or cypress drop-siding on the outside under the hoops, sealing up the inside with four-inch flooring, running boards up and down, and putting metal lath or patent wood lath on the inside and plastering with cement plaster.

The two-piece stave silos are not as

a rule satisfactory for Kansas conditions and nearly always make trouble. It might be possible to make this silo tight by putting on a few more hoops and drawing it up tighter, but since the tongues and grooves of a good many of the staves are injured it is probable it could not be made tight without putting on another layer of material. Sealing up the inside with the flooring is the most practical plan to follow. The silo should be straightened up and put in as good condition as possible before nailing on the flooring. It would be a good plan to use tar roofing paper under the flooring boards. This will be almost sure to make the silo air-tight. It might not be necessary to use the paper anywhere except where the staves are spliced. If these splices all come close together as they probably do, a single strip of paper will perhaps cover them all. Nail the flooring solidly to the staves. This method of repairing a leaky stave silo will put it in good shape without much expense. Of course it should be protected against possible wind damage when empty as before, by keeping the guy wires tight.

Plan for Cistern Filter

L. H., Wyandotte County, writes that he needs a large cistern to furnish water for supplying the house. He expects to use a pressure tank system. He asks of what material to make the cistern wall, whether brick or concrete, and what kind of a filter is best to use. The water may be used for drinking as well as other household purposes.

Either brick or concrete can be used for the walls of a cistern. If of brick, the walls must of course be plastered with a cement mortar to make them hold water. In making a cistern of concrete, the following mixture should be used: One part cement, two parts sand, and four parts gravel or coarse stone. The concrete may be made more nearly water-proof by adding petroleum residuum oil to the amount of ten per cent of the cement used, or by replacing about fifteen per cent of the concrete with hydrated lime. It is not usually necessary to reinforce the walls of a cistern, although it may be necessary to do so if the soil is very loose.

Whatever the material used for the walls, one or two coats of rich cement plaster, preferably containing about three per cent of the residuum oil, will aid in making the cistern absolutely water-tight. The cover should be made tight to keep out surface water or dirt.

Provision should be made for turning the water out of the cistern, while the roof is being washed of the dust and dirt which always gathers between rains.

The use of a filter is absolutely necessary if the water is to be used for drinking purposes, for in spite of all efforts to keep the gutters clean and keep dirty water from running in, it will not be fit for drinking without filtering.

A filter can be made by placing alternate layers of gravel, sand, and charcoal in a good barrel, or a brick or concrete

tank made for the purpose. The rain-water from the roof should be directed over the surface of this filter bed, passing through it and finally into the cistern through a pipe leading from the bottom of the filter. Another method is to partition the cistern into two compartments, making a double wall of brick eight to ten inches apart, with coarse sand and gravel between. Only the vertical joints of the brick should be cemented. A few bricks at the base of this wall should be left loose so the sand and gravel can be cleaned out if it becomes clogged. This wall should be built in a curved form to resist the pressure of the water, and the compartment containing the unfiltered water should be much larger than the other, in order that as much dirt as possible may settle in this compartment.

Having the filter separate from the cistern is more expensive but is the most efficient plan. The cut on this page shows the plan for a cistern filter in which the water passes upward in going through it. By this arrangement the sediment collects in the lowest part of the water compartment and does not tend to clog the filter bed. This illustration is from a Federal Department of Agriculture bulletin, entitled, "Clean Water and How to Get it on the Farm". In addition to discussing the source of water supply, it takes up the different plans of getting it into the house where wanted.

Profit from Dairy Cow

F. R. E., Chase county, asks what profit can be expected from dairy cows for butter fat alone. He wants the information for grade cows as well as for pure-breds. He asks if it pays to milk a cow for forty cents clear gain each day.

An average clear profit of forty cents a day for nine months would mean a profit of \$108. This is more than some of our very successful dairymen get. In our issue of November 25, 1916, we published some figures on the results secured in the Dickinson County Cow Testing Association. In 1913 there were 134 cows in this association that finished twelve-months feed records. Their feed for the year cost \$35.59 per cow, and the average profit per cow was \$54.89. In this calculation butter fat was figured at twenty-eight cents a pound and skimmilk at forty cents a hundred. The next year 151 cows finished twelve-months feed records and the average profit for the year was \$46.94. In 1915, 164 cows finished twelve-months records and the profit was \$53.01 per cow. In 1913 the ten best cows made an average profit of \$145.21. In 1915 the ten best cows made an average profit of \$164.24. Most of the high producing cows were pure-breds or grades of dairy breeds.

If our correspondent has any doubt as to whether it pays to milk cows or not, a careful study of the records of this cow testing association should convince him of its profitability. There is good money in milking quite ordinary cows

if members of the family can do the work. The ten poorest cows in this association averaged 119 pounds of butter fat for the year in 1913, and even with this low production the profit was \$15.23 a cow. No account is taken in these figures of the labor, it being assumed that the calf and the manure produced by a cow will more than pay for the labor of milking and caring for her. The cows, however, are charged good prices for all the feed eaten, these being high enough to allow a little profit on growing the feed.

There are a number of boys and girls in the Kansas Farmer Dairy Club who will have their cows paid for in one year from the net profits of selling their milk or butter fat. By the rules of the club they are required to make a monthly payment at the bank, the amount of which is the total receipts for their product less the cost of the feed for the month. One boy in the club has already seen that he can easily pay for his cow before the end of the year, and has bought another cow. Of course this second cow has nothing to do with his dairy club work. The result of his work in the club has taught him the profitability of dairying and he is ambitious to do more work and thus secure a larger income. He thinks he can take care of two cows almost as easily as he can look after one.

There is no question about its being profitable to milk cows if one is willing to pay careful attention to the details of the work and stay with it. It is not a business to go into for a few weeks, dropping out when it becomes irksome.

Topeka Gets Duroc Futurity

The secretary of the National Duroc Jersey Record Association has written Phil Eastman, secretary of the Kansas State Fair Association, that the association again desires to promote a futurity show at the 1917 Topeka fair. The association offers \$400 in cash prizes for spring pigs not farrowed before March 1, 1917. There are three classifications—boar pigs, sow pigs, and litters of four. The first prize in each class is \$35, and there are eight cash prizes in all. R. L. Hill of Columbia, Missouri, who helped in handling the 1916 Duroc Jersey futurity, has been appointed Duroc Jersey fieldman, a position created at the last annual meeting. One of his duties will be to help in conducting the show this year.

The Duroc Jersey and the Poland China futurity shows were important features of the Topeka fair last year and brought out a fine lot of exhibits. The Poland China futurity prizes will probably be offered by the association if enough breeders in the state want such a show. It is up to the Kansas breeders of Poland China hogs and they will, without doubt, be sufficiently interested to induce the American Poland China Record Association to again put on the futurity show in this state.

Buying Feed for Stock

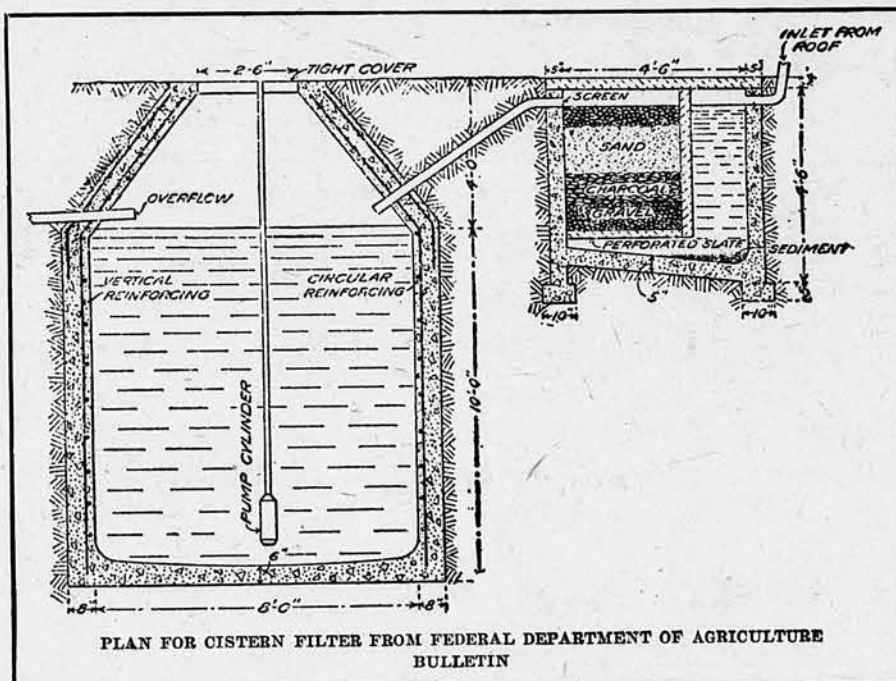
When we buy a beef steer, we need to figure how much meat he will furnish. When we buy feed we should learn how much of the elements needed for our stock that feed will furnish. Practically all of the waste rough forage in the fields now is rich in carbohydrates and poor in protein. So, when we buy feed for our stock, we need to buy feed that is rich in protein.

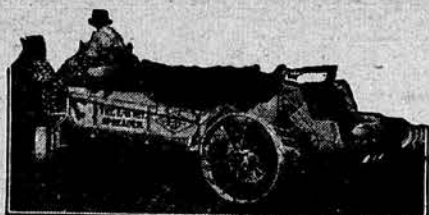
The two feeds which are available to some people are alfalfa hay and cottonseed meal. Good alfalfa hay contains 210 pounds of digestible protein per ton. Cottonseed meal contains 752 pounds of digestible protein per ton.

The above figures are borne out by the fact that practical cattle raisers have been using cottonseed cake to feed their cattle while they are feeding upon buffalo grass in winter. Many of them feed nothing but cottonseed cake; and they get their stock through in good shape.

Considering protein content alone, if alfalfa is worth \$20 per ton, cottonseed meal is worth \$70 a ton.—J. E. PAYNE, Oklahoma.

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Kansas Farmer Dairy Club

How Much Does His Cow Eat?

I RECEIVED your card yesterday in regard to my feed records. I have been trying to study out how much that cow eats in a day. Some days we feed the cows corn fodder, kafir bundles and hay. When the weather is fit they can be turned out in the corn stalks and around a straw stack. The farmers around here who have plenty of feed, "rough" cows through the winter on corn stalks for \$1 a month, so that is what I gave Papa for roughage. But if I have to estimate it, I believe she would eat around 25 pounds of corn fodder and hay out in the lot. She is a small Jersey cow. I have not had a chance to weigh her but I believe she will weigh about 700 or 800 pounds.

I like my little cow very much. She sure is a dandy. I sold my calf. My cow is now giving about three or three and a half quarts at a milking.—**HOWARD WEIS, Neosho County.**

It is difficult to find out just how much the cow eats when she is fed roughage in the lot with the other cows. However, this can be done by putting her to herself for a few days and weighing the roughage given her. I think you will be able to work it out and it will be good practice for you to find out exactly how much rough feed the cow does eat. I note you speak of her eating fodder and hay. On your record you show eight pounds of alfalfa hay daily. Is the hay fed with the fodder in addition to the alfalfa shown on the record? If so, what kind of hay is it? You should state this in your record and estimate just as nearly as possible how much she eats. Hay is higher in price than fodder and your record would not be correct by stating that she eats about twenty-five pounds of fodder and hay out in the lot.

Wishes More Would Write

I have sent in my feed and milk records. My cow gave 1,122 pounds of milk in December. I am feeding her only roughage—silage, alfalfa hay and corn fodder. As she is in the corral with the other cattle, I put her in a pen by herself for a few days to see how much feed she would eat up clean. I gave her 35 pounds silage, 10 pounds alfalfa hay and 20 pounds corn fodder, all weighed separately. She weighs 1,325 pounds.

Little Woodrow is doing fine. I feed him skim milk, some bran and oats and alfalfa hay.

My brother is in the Capper pig club. I like the Dairy Club work. Mamma says it not only teaches us good business methods, but to be kind to dumb animals, as they respond to the treatment we give them.

I will try to send a picture of my cow and calf and myself sometime.

I wish more of the Dairy Club members would write.—**HELEN BUCHENAN, Dickinson County.**

I believe you are making a mistake in not feeding your cow some grain during the early part of her lactation period. When a cow of considerable capacity freshens, she will give quite a large flow of milk for a while even though the ration fed is not extra good.

She will fall down later, however. I presume you are feeding your cow all the roughage she will eat, although it would seem she ought to eat more alfalfa. I would suggest that you make up a grain ration of two parts corn, two parts bran, and one part oil meal or cottonseed meal, and begin feeding her four or five pounds of this mixture daily. I think she is a cow of enough capacity to pay for a larger amount of this grain mixture, but I would not advise starting with more than this amount. If she increases in her milk, try increasing the grain.

If you had plenty of first quality alfalfa and gave her all she would eat in addition to the silage, some change might be necessary in the grain ration. I suggest this grain ration assuming that you are limited in silage and alfalfa and have to feed some corn fodder. I believe you would get better results if you would give the cow all the silage she would eat and all the alfalfa hay, and not try to make her eat corn fodder. Of course, she would need some grain even with all the alfalfa hay and silage she will eat.

Another Prize Added to List

We have just received word from the Hinman Milking Machine Company that it will supply two units, and all the necessary drive-rod, shafting, pulleys, and hangers required to install the two units, as a prize for the Kansas Farmer Dairy Club. The term "two units" means a milking machine large enough to milk four cows at one time.

This and the prizes listed in last week's paper, surely are worth working for, and you should do your very best work and see that your cow does her best also, by giving her the feed, water, and care necessary.

Glad to Tell of Club Work

I have just gotten through reading the dairy department of KANSAS FARMER.

In regard to your letter I received the other day, the reason I charged my cow with pasture is that she ran in the stalk fields and clover and timothy meadow. My father is charging the neighbors \$1 to pasture cattle in the same pasture.

My cow is not giving much milk now, but I think I will make it all right, for the test is pretty good.

A neighbor boy and I gave Paul Studard a visit not long ago. I read his letter in the January 27 issue, and my letter also.

Do you think my milk will not freeze if I put it in ice to ship it? I will be glad to send some milk to this show and try and get a prize and a good one and a good quality test for the Dairy Club.

I like the Dairy Club work fine. My neighbors and friends ask me about the club and I am always glad to tell them all I can.

When my classmates in school come to a problem in dairying that they cannot get, they ask me if I can work that problem, as I am a dairyman. I find that I have learned a great deal about the dairy business.—**ERNEST S. ASBURY, Leavenworth County.**



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GENERAL FARM NOTES

Feeding Pure-Bred Sow

C. M., Cloud County, writes that he has a pure-bred gilt weighing about two hundred pounds, and wants some suggestions about feeding her. For feed, he has tankage at \$2.70 per hundred pounds, linseed oil meal \$5 per hundred, shorts \$1.85, and corn 85 cents a bushel. He also has plenty of good alfalfa hay. This reader has a pig just weaned and asks how to feed it most profitably from the feeds mentioned. He can feed some skim milk to the pig.

This reader is certainly paying an exorbitant price for oil meal. It can be purchased here in Topeka in hundred-pound lots for \$2.55 and the local freight rate would probably not add more than ten or fifteen cents a hundred.

This young sow must have plenty of mineral matter and protein in her feed. By all means give her all the alfalfa hay she will eat. Keep it before her in a rack all the time. This will supply mineral matter in abundance and alfalfa is also rich in protein. Many very successful hog feeders feed their brood sows nothing but alfalfa hay and corn. If the corn is fed in the ear, allow about three pounds daily or about two and a half pounds of shelled corn. While corn and alfalfa hay make a fine combination for a young brood sow, we would suggest that you feed a little tankage daily—about a quarter of a pound mixed with an equal amount of shorts and fed as a slop. This will make it certain that she gets plenty of protein to make proper growth and to develop the pigs.

You do not want your brood sow to get too fat, but she should make a gain of two-thirds of a pound to a pound daily from now until the time she farrows in the spring. Sows fed plenty of alfalfa and a little tankage and shorts with the corn, as suggested, are almost sure to farrow strong and vigorous pigs. Pigs from sows fed corn alone are smaller at birth and lacking in vigor and vitality.

Skim milk and corn will make a fine ration for the weaned pig. Give him a quart and a half to two quarts of milk to each pound of corn fed. If the skim milk is limited, allow a little shorts in place of part of the corn. Give the pig also all the alfalfa it will eat. It will help make his bones grow good and strong.

Valuable Feeding Experience

In our issue of January 20 we gave some hog feeding figures from a farmer in Eastern Kansas who had purchased a bunch of stock hogs averaging 133 pounds in weight, and fed them out, making a profit on the fifteen head of \$12.98. These figures were not intended to be a record of the pork production business as a farm enterprise. They were given simply to show results of feeding out a bunch of hogs when feeds were unusually high in price. If this man had not kept this close record he probably would have thought he lost money.

We have just received a letter from F. G. Houghton, one of the successful hog men of Morris County, in which he calls attention to the fact that when these hogs were fed the weather was unusually fine and goes on to say that the figures fail to give the profit or loss of the man who raised the hogs up to the 133 pounds weight. Also that no estimate was made of the labor involved or of the alfalfa hay fed, all of which go with the hog business. Mr. Houghton gave some very valuable figures on growing and fattening hogs for market. We quote from his letter as follows:

"In 1916 I fed one thousand bushels of corn to my hogs, valued at \$750; four tons of shorts, \$100; about 200 pounds of salt, \$1; 100 pounds of tankage, as an experiment, \$2.75. I charged the hogs six per cent interest on ten acres of 60-dollar land, \$36; six per cent interest on \$300 invested in hog houses and fence, \$18; repairs, \$2; taxes \$5; making a total of \$914.75 for the year. My total sales were \$1,361.41. I do not count the animals slaughtered for home use, which amounted to about \$100. I allow this to offset the labor. I also breed sows for neighbors at \$1, which I allow on labor. I manage to break even on buying and selling hogs."

"I keep only six brood sows and keep them as long as they produce good litters of strong pigs. I do not keep a sow that farrows less than seven pigs to the litter. I breed gilts only when it is necessary to replace a discarded brood sow, and I pick the best gilt from my largest litter. I try to have my

pigs come in March and September. The six sows I now have all farrow from ten to thirteen pigs. They are of the Duroc Jersey breed. The only breeding stock I buy is herd boars. I confine my business entirely to raising hogs for market purposes, selling sometimes on the home market and sometimes shipping to Kansas."

"I feed soaked corn and slop the year around. During the winter I put my barrels in the manure pile. This keeps the slop warm and is better than a cooker for it saves fuel and does away with the bother of firing up. Fresh manure from the horse stable is added to the pile every week or so. My breeding stock gets ear corn and alfalfa pasture, except at farrowing time when the sows are shut up in separate pens and fed corn and water until the pigs are two or three weeks old. Then I add some shorts slop to the ration and keep this up until the pigs can follow the sows on the pasture."

"The past three years I have fed about the same quantities of feed and my sales have averaged \$1,155 a year. I consider 1916 an exceptionally good year for the hog men. This year will not be so good. I would be glad to have my methods criticized or have suggestions made that might be helpful."

The grange as an organization is opposed to granting the 15-day open season on quail provided for in the fish and game bill now before the legislature. The State Grange, which met last December, passed a resolution urging the continued protection of quail. Farmers generally look upon quails as their friends because of the countless numbers of injurious insects they consume. If the protection they now have is to be continued, letters from farmers to the members of the legislature, expressing their wishes, are in order.

If you have not already purchased the males to head your breeding pens, you will have difficulty in procuring them. The high price of grain caused most breeders to sell short last fall. This has resulted in a shortage of all breeds of cockerels.

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One Man Plows 10 Acres a Day

One Man Cultivates 25 Acres a Day

One Man Harvests 30 Acres a Day

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A Thoroughly Well-built Car at \$845

ELCAR

There are few cars equally beautiful at any price, and few, if any, equally good at as low a price. We put into the ELCAR the style, class and high-grade workmanship that went into our former models selling up to and above \$2,000. Our organization has had long training in the production of quality cars, and both beauty and quality are inherent in the

A Few Elcar Specifications

Wheel Base—As long as some cars selling up to \$2,000 and more—115 in.
Motor—Cylinder; long stroke; high speed; 34.7 h. p. at 1,600 r. p. m.
Fuel Supply—Stewart vacuum system.
Ignition—Delco automatic spark advance with manual control.
Starting and Lighting—Dyneto two-unit; double-bulb headlights; Willard storage battery.
Clutch—Dry multiple disk—seven plates, steel on Raybestos.
Rear Axle—Full-floating with roller bearings at each end of wheel hubs.
Differential—Spiral bevel driving gears, with roller main bearings and ball thrust bearings.
Brakes—Internal and external, two inches wide on 12-inch drum.

Three New Models at \$845

Five-Passenger Touring Car
Four-Passenger Touring-Roadster
Two-Passenger Roadster

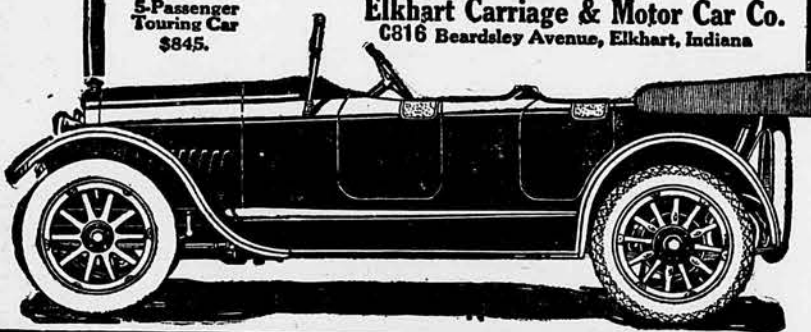
Each model is large and roomy—some would say room to spare, but you want a car that will seat its full load comfortably. Fine in appearance, fine driving and remarkably easy riding qualities, power in excess, economical in upkeep and fuel consumption, a car to give you satisfactory service for years to come—a car that we believe to be as high in quality and as nearly mechanically perfect as any car ever offered at anywhere near as low a price.

Our Illustrated Catalog

will show you views of all the ELCAR models and the more important mechanical parts, and is descriptive even to the minute details of construction. We will gladly mail it to you upon request.

5-Passenger
Touring Car
\$845.

Elkhart Carriage & Motor Car Co.
6816 Beardsley Avenue, Elkhart, Indiana



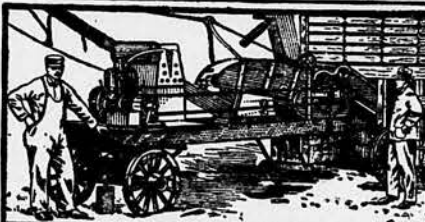
Cushman Light Weight Engines

The all-purpose farm engines, for farmers who want an engine to do many jobs in many places instead of one job in one place. Built light, built right. Weigh only about one-fifth as much per horsepower as ordinary farm engines, but so well built, balanced and governed that they run even more steadily and quietly. No loud explosions, no fast-and-slow speeds, like old-fashioned heavyweights, but steady and quiet like automobile engines.

Before Buying Any Engine Ask These Questions

1. **How much does it weigh?** If it weighs more than 60 lbs. per horsepower, why? The old-time reason for heavy weight was to keep it steady, but if an engine is well balanced, it doesn't need pig iron to hold it down.
2. **Is it Throttle Governed?** A throttle governor insures steady, quiet and economical power.
3. **Does it have a good carburetor?** The Cushman has the Schebler. Many manufacturers of farm engines won't pay the price for a good carburetor, as they think the farmer doesn't know the importance of it.

Below is shown 4 H. P. Cushman on light truck, with water cooling tank and gas tank in front. Engine weighs only 190 lbs. Easy to pull around from job to job. Used on Slinger in harvest to save a team, and in wet harvest to save the crop.



Above is shown 8 H. P. 2-Cylinder Cushman mounted on 4-hole corn sheller. Engine weighs only 320 lbs. 2 cylinders give it very steady power. May also be mounted on hay press or corn picker, besides being used for all other farm work.

Floyd Wilmoth, Crawford, Kans., writes: "I have used your 8 H. P. with my 4-hole Sandwich Sheller and shelled 88,000 bushels—over 2,000 bushels a day. It takes care of wet and tough corn same as dry."

"In your advertising you say the Cushman is built to run without trouble, and it will come nearer doing this than any other engine on the market. It runs cool all the time. The upkeep has been practically nothing and the fuel consumption very small."

"Lots of people talk about it being so small, but why buy an engine that weighs 3,000 to 4,000 lbs. to do the same work a 820 lb. engine will do?"

Cushman engines are not cheap, but they are cheap in the long run. If you want an all-purpose engine, that will run for years without trouble, write for our Light Weight Engine Books. Mailed free.

CUSHMAN MOTOR WORKS
822 No. 21st St. Lincoln, Nebr.

Decay-Proof Fence Posts

"My fencing is up to stay—thanks to Long-Bell Creosoted Yellow Pine Posts—the kind that last a lifetime."

This is the united opinion of farm owners everywhere who are now using Long-Bell Creosoted Posts instead of the ordinary kind that rot and decay after a few years.

CREOSOTED Yellow Pine POSTS

Our posts are cut from selected trees of slow growth, air dried and yard seasoned, and treated by the Long-Bell vacuum creosoting process until pure creosote is forced into every part of the sap wood. The germ of decay is killed, every fibre of the post is protected—there's no decay.

Free Book Send at once for our book, "The Post Everlasting"—learn how to end all your post and fence troubles and save from \$50 up each year now spent in repairs and replacements.

Your lumber dealer sells L-B Creosoted Posts—see him and look for the L-B Trade Mark branded on the end of each post. It means thorough treatment with pure creosote.

The Long-Bell Lumber Co., 122 R. A. Long Bldg. Kansas City, Mo.

Harrell School District Alive

By Osceola Hall, Rural Social Life Editor

THE community about which this story is written is the Kaw Valley School District, more commonly known as the Harrell school. Being about equally distant from Wamego to the northeast and St. George to the northwest, and bounded on the south by the Kaw River, the people of this district are beginning to center their activities around the school, and are obtaining for their community some of the opportunities that come only by united effort.

The school may be made one of the greatest assets of a community as it is the one institution in which all may have a part. Such is the case in the Kaw Valley district. The school building is of stone and is unusually large for a district of that size, there being ample room to accommodate all in the neighborhood. The building is well equipped, including an organ which gives pleasure to both the children and grown-ups.

In choosing the teacher the school board has had in mind the larger interest of the neighborhood with the school as a center. The present teacher, Miss Velma Kastner, is interested and efficient—not only in school teaching, but in social center activities and is recognized by her co-workers in the district as a leader. In short, this teacher lives in the district—she is thoroughly interested and fits into the life of the district in a way that pleases all and accomplishes much. The teacher and school board are working so harmoniously and with such zeal that it is thought by spring District 102 will be listed among those schools of the state that are standardized.

Along with this program for a standard school, other progressive steps are being taken. The teacher and parents are realizing that recreation is really a part of education—that to gain the best results in developing the mind, the body must also have opportunity for growth. Once a real need is discovered, progressive people will not relax their efforts until something is done to supply that need. Miss Kastner thought that recreation was the greatest need of her little flock and began to search for some way in which games could be introduced into the school. She found in the columns of Kansas Farmer a notice of the writer's dramatized play festival, "The Spirit of Play." Arrangements were made at once to secure our services for the week before Christmas to train for this program.

Upon arrival in the community, Miss Kastner greeted us with, "I really don't see how you can do it. Why, my children

don't know any games. All we ever play is "Black Man" or ball. I'm so glad you're going to teach them some games." The little ones were just as eager for these new games. Their eager, expectant, delighted faces were like the sunshine as during the week game after game was played. At recess and noon hours the children would crowd around and joyously exclaim, "Oh, can we play the fairy game?" or some one of the other games, and the discord as each called for his favorite game was music to our ears as it denoted hearty response to our efforts. Many times the expression, "There has never been anything like that here," was heard, and from the children, "I can hardly wait for Friday night to come." Even when the thermometer registered ten below zero, these children came to school at eight o'clock for their practice games.

The rehearsals of the program were easily arranged, the older ones remaining after school. Some of them lived two miles from the schoolhouse, but they would walk fast and sometimes run in order to reach home before dark. One of the mothers allowed her little girl to stay all night with friends who lived near the school, and in this way both mother and teacher were relieved of anxiety about the child being out after dusk.

The games were a pleasure, but there were shrieks of delight when the costumes arrived. This important event took place at recess, and most of the twenty-five children ran out to the road to bring in the box and suitcase. Finally the old suitcase was rescued by three boys and they clumsily carried it into the schoolhouse, none of them being willing to give up the honor. Then little by little, during the two remaining days of practice the costumes were unpacked, but it was not until Friday night that the climax was really reached, when the children, splendidly costumed and supervised by the "Spirit of Play," presented their wonderful dramatized play festival, to which program a Christmas touch had been added.

The dramatized play festival is accompanied by instrumental music, and this feature was very acceptably supplied by Miss Katherine Harrough, a student of Wamego High School. District No. 102 was Miss Harrough's childhood school and her dear memories of those earlier days and her desire to be of service to the home school, caused her to put forth great effort in getting to the country school after her own classes in town were dismissed. The first afternoon she came to practice she was greeted with the exclamation, "Oh, Katherine



SCENE IN "SPIRIT OF PLAY."—THERE ARE NO STAR PERFORMERS, ALL HAVE EQUAL SHARE IN SUCCESS OF FESTIVAL

1842 The Seventy-Fifth Anniversary of 1917

P&O LIGHT DRAFT PLOW

Built for the Field Test.

Three-Quarters of a Century of "Knowing How" Hammered Into Every One of Them.

The product of the Parlin & Orendorff Co. has always been noted for simplicity of construction, great strength and ease of operation. It was upon such a basis that the founders of this business made their implements, established their reputation, and built their factory. It is upon the same foundation that the business has been carried on to this day, and in 1917 we celebrate our Diamond Jubilee; 75 years of practical experience gained through constantly striving to provide for the exacting requirements of three generations of American farmers.

For an even three-quarters of a century we have met the demand, and today we operate the largest and oldest permanently established plow factory in the whole world. "It's the way we build them."



Light Draft Plows, Harrows, Planters and Cultivators are made in all types and sizes, to meet the conditions in all sections, and are Backed by an Unqualified Guarantee.

We also make the most complete line of Tractor Engine Plows produced, and we have a special catalog devoted to these famous plows.

The P&O Little Genius Engine Gang Plow

was the most popular plow shown at all points on the 1916 National Tractor Demonstration.

We will send P & O Catalogs to any address. While P & O Implements are sold only through established implement dealers, we welcome correspondence from farmers in all sections.

Ask Your Dealer or Write Us.

Parlin & Orendorff Company

Canton, Illinois

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YOUR ENGINE SHIPPED TO DAY

DON'T wait for 8 weeks. Wire me your engine order NOW! Get a High-Grade WITTE Engine. I can ship any size—2 to 22 H.P.—Kerosene or Gasoline—Stationary, Portable, or Saw-Rig—all ready to run. Ship today! Fully guaranteed for 5 years. Immediate shipment proves superior factory equipment, and a better engine, just as 30 years' WITTE success proves the superior quality of

WITTE ENGINES

No other similar factory can offer you the engine quality and service that I am prepared to give every WITTE engine user. If you don't know about WITTE engines, write for my FREE BOOK telling "How To Judge Engines." Gives valuable pointers gathered from over 30 years of practical engine experience—not guess work. Write today. Ed. H. Witte, Pres., WITTE ENGINE WORKS, 1802 Oakland Ave., Kansas City, Mo. 1602 Empire Bldg., Pittsburgh, Pa.



\$45 SADDLE for \$36 Cash

Fourteen-inch swell front, 27-inch wool-lined skirt, 8-inch stirrup leather, guaranteed, solid steel fork.

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CATALOG FREE

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164 Styles. YOU save money by ordering direct at wire mill prices. Shipment from Kansas, Indiana, Nebraska, Texas, Colo. or Calif. CATALOG FREE. Write today. OTTAWA MANUFACTURING CO., 110 King Street, Ottawa, Kansas.

INVENT SOMETHING. It May Bring Wealth. Our Free Book tells What to Invent and How to Obtain a Patent through Our Credit System. **WATERS & CO., Succeeded by TALBERT & PARKER, 4517 Warder Building, Washington, D. C.**

SILOS American Tile Blocks, Curved Hoops Imbedded, 14x35, 115 tons \$223
American Silo Co., 210 Traders Bldg., Kansas City, Mo.

ine, I'm so glad you can play for us," and she enthusiastically replied, "I wanted to. I refused two offers in town so that I might play here Friday night." The next afternoon she proved her interest by walking four miles, reaching the school about four o'clock and remaining until dark, in order to practice with these young people. We often hear that leaving the local community and going to town to school kills the desire to return to the country neighborhood. But this is not true in the case of girls like Katherine, for if they must go outside the home community to complete



MISS VELMA KASTNER, TEACHER OF HARRELL SCHOOL

their schooling, the more they learn the more they are impressed with the possibilities of the home community and are eager to return to have a part in the realization of those possibilities.

In this dramatized play festival, "The Spirit of Play," there is no star performer, but each character is a star, thus illuminating the entire program. At the end of the week, Miss Kastner said she believed it would prove to be the beginning of many improvements in developing the school as a community social center.

What Kind of Club for Women

We have been asked to suggest the best plan of organization for the women of a rural neighborhood.

In organizing the women of a community into a group who can work together, a great deal depends upon the nature of their interests. If the women are all united in one church denomination, a club affiliated with the church will be of great service to the minister and to the life of the community. We presume, however, that the women are of different denominational connections, so that it will be necessary to plan a club in which they can meet in some common activity. It is always desirable in the country to avoid duplicating organizations, as much time and energy are wasted in keeping up competition.

If there is no grange in the neighborhood, no better organization could be formed. It admits women upon an equality with men, and there are great possibilities in it for the women to work together in various ways.

A mothers' club is another splendid form of organization for women. A group of women interested in literary topics might form an organization affiliated with the Federation of Women's Clubs of the state.

A home-makers' club is always in order and is perhaps one of the best forms of organization for the women of a rural community. Special information regarding home-makers' clubs will be furnished by the Home Economics Department of the Extension Division of the Kansas Agricultural College, Manhattan.

Rural Social Life Questions

You are invited to send in questions that have to do with the rural social activities. Questions will be answered in this column, except where personal reply is requested, and a self-addressed stamped envelope enclosed. Address Department of Rural Social Life, Kansas Farmer, Topeka, Kansas.

No life is well rounded that has no social expression. Both work and play are needed—each to bring appreciation of the other.

Answering the Kerosene Question with a Guarantee

THERE is no need of guesswork claims or promises on the kerosene burning proposition. Either a tractor burns kerosene in a way that means something or in a purely temporary, expensive and inefficient way.

In selling the Rumely OilPull tractor we don't make word-of-mouth promises, but give you a broad, positive **written guarantee**—the kind that you are entitled to and should demand with the tractor you buy.

Remember, the OilPull is a kerosene tractor from **start to finish**. It isn't a makeshift combination gasoline proposition. The fact is, the OilPull gives **more power** on a gallon of kerosene than competing tractors of the same size on gasoline.

In addition to cutting your operating costs in half, the OilPull has all the qualifications you want in your tractor. It is an all-purpose outfit and will handle **all** your power jobs, draw-bar or belt. It is oil cooled—there's no danger of the radiator freezing and no bother with cooling water.

The OilPull is governor controlled—the speed **automatically** regulated to the load—the power always steady and uniform. You can depend absolutely on the OilPull, as you can on **all** Advance-Rumely machines.

Built in two sizes, 15-30 and 30-60 h. p.

Write our nearest branch for a catalog of this famous cost-cutting tractor.

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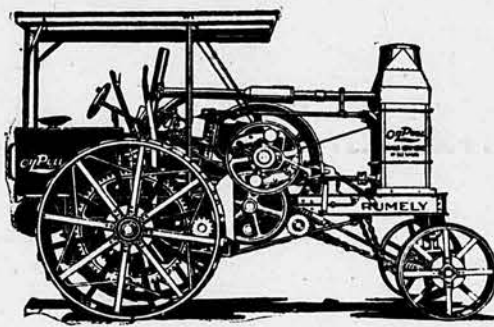
LA PORTE

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Address the branch nearest you

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Guarantee

We guarantee the OilPull tractor to operate successfully at **all** loads under **all** conditions, not only on all grades of kerosene permitted by law to be sold in the United States and Canada, but on distillates and fuel oils free from earthy matter.

There's Only One OilPull—Rumely, LaPorte

Special 30 Day OFFER To One Man In Each Township



Manson Campbell, Pres.

Even though *thousands* of farmers buy Simplex Straw Spreaders every season I have decided to give the Simplex further introduction. Therefore, I now make an extra Special Offer to one man in each township. Can't outline my Special Offer here. But write me and I'll explain all. It's a real surprise—a remarkable chance to **MAKE** as well as **SAVE** money. You also get my regular proposition of *low factory price, 30 days' free trial with the money in your pocket—and liberal long-time credit*. Offer is limited, however. May be withdrawn any time. Write now—be the lucky man!

Simplex Straw Spreader

Makes Straw Worth \$3.80 per Ton

Straw, as you know, is worth up to \$3.80 per ton—as a fertilizer—as a preventive of winter kill—as a conservator of moisture—as protection against "soil-blow."

The "Simplex" Spreader is tried and proven—five years' success—thousands in use—only machine with double-drive and double-width carrier—only machine that handles *rotten, wet* straw as well as bright—only

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Try my "Spreader!" Try it! That's all I ask. No money wanted in advance nor until the machine has made good. Postal brings latest catalog. Letters from Simplex owners in your State and my Special, Private Offer mentioned at the beginning. All come FREE—by return mail. Address Manson Campbell, Pres.

MANSON CAMPBELL COMPANY, 717 Traders Bldg., Kansas City, Mo.



\$16—That is what you save by dealing direct with me. Isn't \$16 worth saving?

FREE 1917 BOOK

FLOWER AND GARDEN SEEDS

Good seeds are always the cheapest. Lincoln Brand Seeds is the new trade name we have given Griswold Quality Seeds. It stands for good service, too. Let us send you a FREE copy of our new 128-page Seed Annual. Tells BEST time and how to plant. BEST soils for growing. BEST seeds for different sections, etc. A seed book worth having. Send for FREE copy today.

10 ASSORTED SEED PACKAGES ONLY 10c
A fine selection of vegetable and flower seeds best adapted to your locality. A big value. We offer it to make you better acquainted with Lincoln Brand Seeds and Griswold service. A great combination backed by thousands of satisfied customers and 27 years' experience. Write also for our Bee Supply Catalog. **Griswold Seed and Nursery Co., Dept. F-141, Lincoln, Neb.**

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Makes and Burns Its Own Gas

Gives strong, steady light of 300 candle power. Costs less than a third of a cent per hour to run. Can't blow out or jar out. Solidly built of nicked brass with mica globe. Stands all hard knocks. Use it in feed lots, barns, cow sheds, chicken houses, cellars, etc. Fill it only once a week—Clean it only once a year. No wicks. No chimneys. No smoke, no odor. Perfectly safe. No danger even if rolled around in straw. Can't explode. Can't tip. Guaranteed 5 years. If not on sale in your town yet, write for catalog of 20 different kinds of Gasoline Lamps, Table Lamps, etc. Dealers or agents wanted in every locality.

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Get this Valuable Reference BOOK on MODERN BARN BUILDING

We want to show you how complete and convenient, roomy and labor saving, warm and yet well ventilated, a moderate priced Louden planned barn can be.

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is a 112-page book of practical barn plans and building information—not a catalog. Its mission is to help you build the best possible barn at a minimum cost. It contains the best of the building ideas gathered by The Louden Machinery Co. in fifty years of barn building and barn equipping experience.

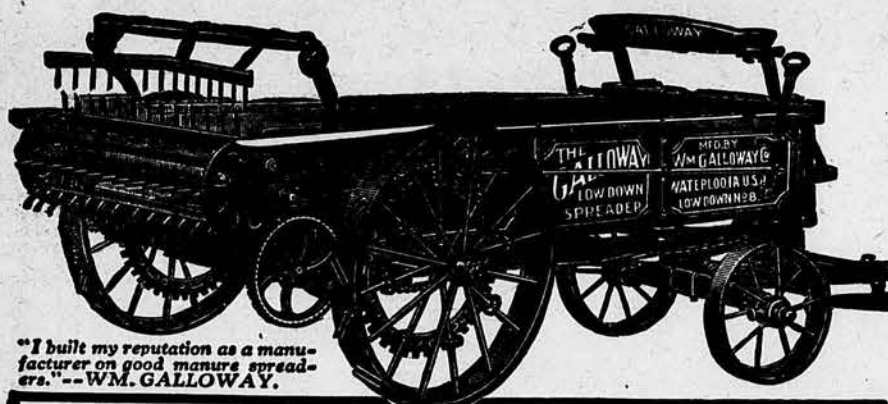
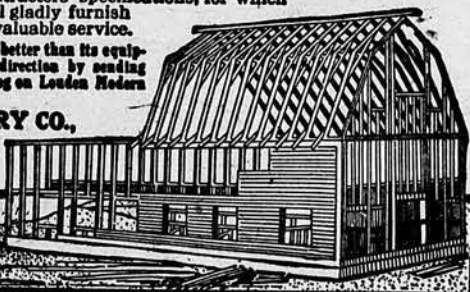
If you expect to build or remodel a barn you need this book. It is full of information we have paid thousands of dollars to obtain. 81 illustrations of barns and other farm buildings, with estimated cost of each. It is free to you if you'll ask for it. Don't wait till you are ready to build; get it now.

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Profit From Dairy Heifers

THERE can be no progress along dairy lines unless some effort is being made to improve the dairy herd. Dairying as an industry is making great strides in Kansas, and large numbers of dairy cattle have been shipped in from other states. One of the profits of this business is from the raising of high producing dairy cattle. The newly established dairymen cannot hope to make the new industry permanently profitable through a system of buying cows to replenish their herds. We speak of this at this time because as dairying increases there will be many who will look to condenseries for their market. Our comment is not in opposition to condenseries, but with the idea of helping Kansas dairymen to avoid some of the practices commonly prevailing in condenser districts.

The objectionable features of this practice are that in many districts in which the milk is sold to condenseries, no attention is given to the improvement of the dairy herds. Any old cow which can be fed even for a few months to a fairly good production will suffice for the patron of the condenser. When no longer giving milk in sufficient quantity she is fattened and sold for beef. Another cow is bought to take her place. Usually these cows come from the stock yards. The calves produced on farms of condenser patrons are sold as veal. This is done, first, because the farmer feels that he cannot afford to feed whole milk to the calf even for a two weeks period; second, because he has no skim milk to feed for four or five weeks, and third, because the calf is fit only for beef because it has no breeding which makes it worth rearing for stock purposes. With such prevailing conditions, regardless of the cause which may lead to such conditions, there can be no real dairy development in any community.

One cannot actually engage in the most profitable dairying without year after year improving the herd so that more milk is produced or without rearing calves of such breeding as will make them useful animals in the dairy. The profits of dairying come largely through cow improvement and through which comes good prices for cows as milkers and through the rearing of calves which will sell for breeding and milking purposes at prices higher than those commanded by calves of nondescript breeding. The real dairyman makes as much or more money from the sale of good milkers or from the sale of calves from heavy-producing mothers as is made from the sale of the milk. These are sources of income which the man engaged in dairying cannot afford to overlook and a system of dairying which does not recognize the income from this source is faulty. It is only one-half as profitable as it can be.

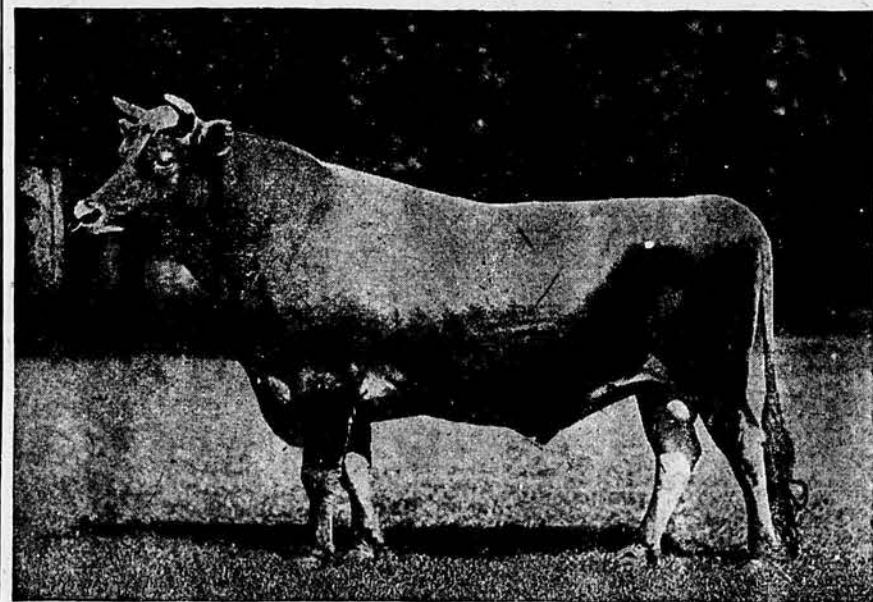
We do not believe that the cow milker on high-priced land and who sells his

milk to a condenser, can afford to use the whole milk and the skim milk necessary to grow to maturity a calf which only is fit for beef. This is no doubt the view which the average condenser patron takes of his situation. We do not, however, believe that he realizes to what extent the rearing of a well-bred calf which could take its place in a dairy herd would add to his profit. The holding of the idea that the common cow, handled as above, is good enough for milking for the condenser, is responsible for the practice in the condenser district. If these patrons, however, would give well-bred, large milking cows a fair trial, they would soon realize the increased profit through the sale of the milk alone. They would convince themselves that even in selling milk a high-class milker is most profitable. This because such milkers make better use of the feed given and convert that feed into milk at a greater profit. Realizing this, they would then be desirous of perpetuating this kind of cow by rearing her offspring.

High-class cows cannot be easily bought, and when purchased can be had only at high prices. This is the highest compliment that can be paid the large milking cow and is the best argument for her use. If a profitable cow is milked, her offspring is too valuable to sell as veal. The very fact that a man has a herd of well-bred and large-producing milkers will induce him to rear the offspring to maturity. The best obtainable cow is in every instance the foundation for profitable dairying and when one knows a good cow the value of her kind is at once recognized.

We have never known milk to sell at a condenser or for domestic consumption at prices so high that the producer could not afford to grow a heifer calf from a sire of good antecedents and from a profitable milk-producing mother. Calves from such parentage are valuable. The full value of such calves, however, cannot be realized at six or seven weeks of age. They must be grown to the point at which their breeding is apparent in their conformation. So in the rearing of well-bred heifer calves it is necessary if the greatest return be realized, that the same be kept on the farm until they give some outward appearance of their breeding and value. The farmer who has produced on his farm such calves will find good money in their rearing.

Cows of good breeding are always in demand at good prices and that demand was never greater than now. The grower of such calves can well afford to give them the start necessary on whole milk and the skim milk necessary to bring them to the point at which they can exist on grain and hay and pasture. A well-bred well-reared heifer calf at two years of age and soon to be fresh, will sell for more money than a



GAMBOGE'S VELLUM MAJESTY, A TYPICAL JERSEY BULL.—OWNED BY M. D. MUNN, PRESIDENT OF THE AMERICAN JERSEY CATTLE CLUB

beef animal of the same age, and it will not cost so much to produce the heifer as the beef animal. The well-developed and most profitable dairy farm is that which each year has a few desirable heifers to sell to the man who is looking for good milkers.

Visiting Dairy Farms

Some Cloud County farmers found it most profitable and instructive to visit dairy farms in Dickinson County. In a recent issue of the Concordia Blade, Agricultural Agent Karl Knaus tells of this visit:

"Two auto loads of farmers from the vicinities of Concordia and Miltonvale drove to Abilene to inspect some of the good dairy farms of that section. Eight farms were visited, six of which had twenty or more Holstein cattle. The other two farmers had mixed herds with Jerseys predominating. A careful study was made of the type of cattle kept, equipment, methods of feeding and feeds used, and the products sold. The testing association has shown these farmers that only the good cows pay. It costs about \$50 to keep a dairy cow one year. George Lenhart milks seventeen cows that return him \$2,000 a year. A. B. Wilcox paid \$450 for a cow that returned him \$500 in ten months. This cow's bull calf sold for \$250 to a neighbor. All the farmers visited placed cows in stanchions to be milked. If milking over fifteen cows, a milking machine was used. All think the milking machine a success where enough cows were to be milked. In every case except one the farmer that was producing milk, fed silage and this one is building a silo this winter. Alfalfa racks were found in every lot and at milking time a feed of corn and cob meal, bran and oilmeal was given each cow according to the amount of milk she produced. The milk from each cow is weighed at milking time and tested once each month. No guess work here. Where close enough to town to deliver each day most of the men sell whole milk. If farther away cream is sold and the skim milk fed to pigs and calves.

"In all this trip we did not find a Holstein cow or heifer for sale. These farmers are prosperous and the cows are the cause of it. Many Cloud County farms are better adapted to this type of farming than any other. Why haven't we as many good cows as Dickinson County?"

Minerals in Milk Production

Dairy cows ordinarily cannot digest from rations of the usual character sufficient mineral matter to meet the demands made by heavy milk production. This conclusion has been reached by nutrition experts at the Ohio Experiment Station after two years' investigations with cows yielding large quantities of milk.

These specialists also say that even when the common practical rations are supplemented with large amounts of calcium carbonate and bone flour, the cows still give off or use in milk production more lime than they can digest from their rations. To meet this demand for heavy milk production the cows must draw upon the mineral substance of their skeletons.

Further attempt is being made, by the use of more readily soluble lime salts, to learn whether a cow can absorb as much lime as she gives off during heavy milk production.

The results obtained thus far emphasize the value of leguminous roughages in milk production. Without liberal allowance of such feeds the loss of minerals from the bones becomes excessive, and predisposes to disorders of nutrition.

Winter Care of Dairy Heifers

Silage and alfalfa hay are ideal feeds for calves more than six months old during the winter months. Some grain should be fed in addition, however. Four parts of corn chop, two of bran, and one of oil meal make a good ration. Two or three pounds a day should be fed heifer in calf until near calving time, depending upon conditions. Enough grain should be fed to keep the animal in good flesh and in a growing and thrifty condition. Size is as desirable in dairy as in beef animals.

Heifers should have a shed to furnish some protection although they can run in the lot in the day time. The grain should be fed inside and the alfalfa and silage in suitable places outside. It saves feed if the water is warmed, especially in severe weather.

Dairy animals, not to be used for show purposes, should have their horns removed. This may be done by applying

caustic potash on the embryo horns of the calves before they are a week old.

The best age to have heifers freshen depends upon the size and thriftiness of the animal, but in general Holsteins and Ayrshires should freshen when they are about 30 months old, and Jerseys and Guernseys 26 to 27 months.—J. B. FITCH.

Eradication of Tuberculosis

In his recent annual report, Secretary Houston of the Federal Department of Agriculture mentioned the following activities of the Bureau of Animal Industry in its fight against the spread of cattle tuberculosis:

"Applying the tuberculin test to interstate shipments of cattle at stock yards when destined to states requiring the test. This is done upon request of the owner and without fee; testing cattle for importation and for exportation; testing herds in Maryland and Virginia supplying milk to the District of Columbia, in co-operation with the local health officer; testing all cattle in the District of Columbia with a view of eradicating the disease within the district; testing herds in Virginia in co-operation with the dairy and food commissioner of that state; testing pure-bred herds in various parts of the United States in co-operation with the owners; manufacturing and distributing tuberculin to state authorities for official use.

"In addition to this work, it is believed that the time has arrived when systematic eradication of tuberculosis in selected areas in some of the states should be begun. While this has been suggested from time to time, none of the states has yet indicated a desire to commence the work. This is possibly due to the lack of funds. To make the requisite progress, the necessary authority and a considerable sum of money should be available both to the federal government and the states.

"It is not thought that much permanent headway will be made in securing the co-operation of cattle owners unless some reimbursement is made for cattle destroyed. Under the plan followed in the District of Columbia, cattle which react are first appraised and then slaughtered. If no lesions of tuberculosis are found, the owner receives the full appraised value. If lesions are found but the carcass is not affected to such an extent as to destroy the value of the meat for food purposes, the owner receives 80 per cent of the appraised value less the salvage. In case the carcass is so badly affected as to require destruction, the owner receives 40 per cent less the salvage. This has been found generally acceptable to the cattle owners. The cattle are appraised at their beef or dairy value.

"Considerable co-operation is received from breeders of pure-bred cattle in eradicating the disease from their herds. So far no compensation has been given for cattle which reacted to the test.

"If co-operation with the states is undertaken, it should be on the half-and-half plan and the work should be confined to certain definite sections, such as one or two counties at a time, with extension to other counties as the work progresses. The magnitude of the task should be fully understood before the work is begun. There are approximately 22 million dairy cattle in the United States. It would be necessary to retest herds at intervals of six months until all disease was eradicated. All new cattle added to tested herds would require testing unless from herds known to be clean."

From the fact that we are becoming a great export nation, and must compete with other countries in the world's markets, as well as freeing ourselves from this disease for the benefit of our own country, we agree with the Secretary of Agriculture that the time has arrived to undertake a systematic eradication of tuberculosis.

This disease has been and is being used as a scare by the oleomargarine interests to boost the sale of their substitute, and this substitute is also churned in milk.

In the District of Columbia, through the work of the Department of Agriculture, the disease is less than 1 per cent. Whether we agree or not in the tuberculin test, all agree that owners of slaughtered animals should be paid. This is a matter for state legislatures to take up. If the necessary appropriations are made to start the work, by another year the states can meet the national government on a half-and-half basis.

The agricultural appropriation bill of the present congress, as reported from the committee, carries \$75,000 for the beginning of this work.

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different from the society woman; she doesn't want any change of style. She wants the milking done on time, and always the same. No change of style goes with her, and that's where Hinman is Johnny-on-the-spot and always does his work the same; therefore we could not afford to let him go at any price. We consider him by far the best, cheapest, and most reliable hired man." H. G. Anderson & Son, Dec. 14, 1915.

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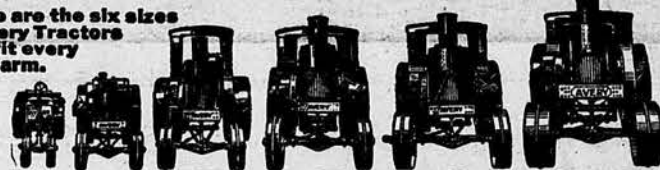
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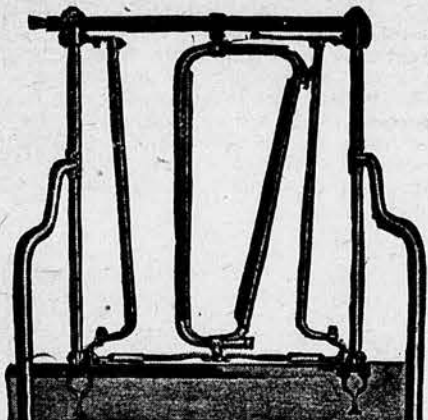
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CROP REPORT FOR 1916

THE State Board of Agriculture in
a recent report states that based
on farm values, the agricultural
products of Kansas for the year 1916
were worth \$371,188,476. This is \$30,-
000,000 more than that of 1915, and
takes rank as the state's second best
record, the gross income in 1914 only
exceeding it by about \$5,000,000. The
value of live stock on the farms is \$341,-
020,835, the largest ever reported, ex-
ceeding the best prior year (1915) by
\$30,000,000.

An outstanding feature of the year's
inventory, aside from the high prices
that generally prevailed, is the wheat
crop. Its yield of 99,384,760 bushels is
the second largest in the history of the
state, worth \$134,615,300. While its
production is but little more than one-
half the record output of 1914, its value
is only 10 per cent less, and it exceeds
the value of the crop of 1915 by nearly
\$49,000,000. Although bulking large,
the yield per acre of 12.7 bushels was
not unusual, and approximates the an-
nual average. Its quality was extra
fine, however, and the average price re-
ceived by the growers is given as \$1.35
a bushel, the highest reported since
1872.

The value of the field crops of 1916
amounted to \$273,110,075. Forty-nine
per cent of this is credited to wheat
alone, while 65 per cent is represented
by the two crops of wheat and hay.
Only two corn crops in the past twenty-
five years have been smaller than the
yield of 62,127,190 bushels, and the out-
put of the sorghums was far below the
average, the season having been un-
favorable for both. In fact, yields of
all the principal products, excepting
wheat, were less in their aggregates
than for the preceding year, but owing
to higher prices the total value of all
field crops was more than \$23,000,000
greater. There is an increase of ap-
proximately \$7,000,000 in the value of
animal products, more than \$5,000,000
of which is accounted for in the one
item of animals sold for slaughter,
which amounts to \$68,762,369, compared
to \$63,438,405 in 1915. The income
from poultry is more by \$700,000, and
the value of dairy products is greater
by about an equal amount, a most no-
table gain having been made in con-
densed milk, from 1,166,161 pounds,
worth \$81,031 in 1915, to 3,344,570
pounds, worth \$500,674 in 1916.

There have been substantial increases
in the numbers of all kinds of live stock,
except horses and hogs, which are less
by 7,232 and 230,895 head, respectively.
Milk cows have gained in numbers 115,-
786, other cattle 281,092, mules 19,512,
and sheep 43,399. The values of all live
stock show increases over the preceding
year, horses having gained \$4 a head,
mules \$3, milk cows \$2, other cattle 50
cents, sheep \$1.25, and hogs \$2.

It should be borne in mind that the
huge sum as represented in the total
value of agricultural products reported
is the gross income from the farms of
Kansas, and no allowance is made for
the cost of production, which was great
and is steadily mounting higher.

Making Corned Beef

The following directions for making
corned beef are given by A. M. Paterson
of the agricultural college:

The cheap cuts of beef, such as plate,
brisket, and flank, are used generally in
corned beef. The animal heat should be
out of the carcass before curing, and it
should not freeze. Beef should be cured
while it is fresh as it is more easily
kept and more palatable.

To corn beef, use eight pounds of
salt with 100 pounds of meat. Put a
layer of salt in the bottom of the curing
vessel, one-fourth inch thick. Pack in
each layer of meat as closely as pos-
sible, alternating salt with meat, cover-
ing the top layer completely with salt.
Let stand over night. With each 100
pounds of meat use four pounds of sugar,
two ounces of baking soda, and four
ounces of salt peter. To these ingredi-
ents add a gallon of clean fresh water.
If the weather is warm, the brine
should be boiled and allowed to cool be-
fore pouring it over the meat. Add

enough water to cover meat. Weight
down to keep meat under the brine.
The meat may be left in the brine until
used.

When preparing dried beef, the round
cut is the better cut to use. With 100
pounds of meat use five pounds of salt,
three pounds of sugar, and two ounces
of salt peter. Rub the surface of the
meat with one-third of the mixture, let
stand in curing vessel three days and
then rub with one-third of the remain-
ing mixture and let stand for three
days longer. Rub on the remaining
mixture at the end of the three days
and let stand the same period.

In repacking, put the bottom pieces
on top, remove from the brine and
smoke. Hang in a dry, well ventilated
place where the water will evaporate
from the meat. Meat may be used as
soon as it is smoked. The drier the
climate, the more easily meat may be
dried.

State Grange Resolutions

In the Grange Co-operator, Alfred
Docking summarizes the various resolu-
tions passed by the State Grange as
follows:

"Report passed by Grange was against
military education and increased appro-
priation by federal government; for the
continuation of publication of text books
by the state printing plant, and facili-
ties to make the work effective (this
was the committee resolution, but some
fragmentary ones were sent in); deplo-
ring the opposition of the organized
teachers to state publication; in favor
of Torrens law; for a law prohibiting
shooting quail for another five years,
asking the Interstate Commerce Commis-
sion to require the railroads to furnish
cars; favor of law prohibiting loan com-
panies inserting in mortgages clause
claims to collection of extra fees; favor
efficient initiative and referendum law;
favor budget system of handling state's
expenses, governor, treasurer and au-
ditor to be the budget commissioners;
favor law to compel county commis-
sioners to publish itemized statement of
all public expense and issue free to every
taxpayer; favor state printer being
authorized to print all county and town-
ship blanks, and furnish same at cost;
and a number of others."

Canker Worms Again Menace

Canker worms will again menace the
lives of Kansas shade and fruit trees in
1917 unless a vigorous effort is made
to combat the insects. This statement
was made at the annual meeting of the
State Horticultural Society by Prof.
Geo. A. Dean.

Injury done by the canker worm last
spring was severe over a large portion
of the state. In many cases elms,
hackberries, and large numbers of fruit
trees were completely defoliated. Many
trees died in the summer, while others
were weakened and thus rendered sus-
ceptible to the attack of wood borers.
The canker worms are almost certain to
prove serious next season. Plans should
be made to band all trees that cannot
be sprayed.

Grange Views on Education

The educational committee of the
State Grange, of which L. S. Fry is
chairman, made a report at the annual
meeting held in Independence, suggest-
ing amendments to rural high school
law, limiting size and shape, and form-
ing new districts; that fraternity and
sorority houses be taxed; that stand-
ardization of schools be followed; that
the Barnes Law be readjusted to permit
rural high schools to participate in the
funds; that a revolving loan fund of
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to help children of patrons secure indus-
trial higher education; that special
teachers who shall pass about the county
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tein feed with the corn, such as alfalfa
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Make Horse Production More Profitable

ON JANUARY 1, 1916, \$2,150,468,000 was invested in horse stock in this country as compared with \$3,332,144,000 in cattle, swine, and sheep combined. In spite of this enormous investment, too little attention has been given to the kind of horses raised, as the average value in the United States on January 1, 1916, was only \$101.60. Yet statistics have shown that it costs \$104.06 to raise the average horse until he is three years of age. This is a deplorable state of affairs.

Possibly one reason for having made so little progress in improving the general average of farm horses is the fact that most producers are raising horses for service on their own farms and are giving very little attention to the cost of production, cost of maintenance, and amount of service rendered. Such producers fail to appreciate the difference in efficiency between different types of horses, the difference in the cost of labor rendered by horses of different types, and the difference in the profits from sales of horses of different types, and continue year after year to breed mares with little thought as to the kind of horses they will raise. On the other hand, the producer of cattle, swine, and sheep is raising a product that will be sent to market at the earliest age possible. It is only natural that he give more attention to the cost of production and exert a greater effort to produce a more efficient and profitable animal.

Another important reason for much of the carelessness and lack of interest in the kind of horses grown is a feeling more or less prevalent in many localities that there is no market for good horses. This opinion is due to a general lack of authentic information regarding the horse supply and the demand of the country today. Where this idea is prevalent, the producers fail to appreciate the fact that there is no longer a demand for horses of certain types, but that horses of other types are in greater demand at better prices than ever before. Tractors have no doubt caused some apprehension regarding the future of the horse, but careful observation and experience are proving that the tractor will never decrease the need for good, sound, heavy horses. Such horses have increased in value 10 per cent during the past ten years, according to the Chicago horse market reports. All horses passing through that market in 1905 that would classify as drafters, including the good, bad and indifferent, averaged \$186 per head. In 1915 the same class of horses averaged \$205 per head. The demand for horses on farms and the influence this demand exerts in making horse values is shown by the fact that under normal conditions only 1.5 per cent of the horse population of the country passes through the central horse markets annually.

Many of the simple essentials of profitable horse production have been neglected in horse raising operations. More horses continue to be raised in a haphazard manner each year, the annual colt crop reaching into millions, yet only a few thousand are bred and fed with sufficient thought and care to insure the development of really high class farm horses. To conduct a business with such result is unfortunate as well as unprofitable, but it is encouraging to note that certain types of horses are a profitable farm product. This profitable type is the sound, good looking, bold going, easy keeping, durable horse weighing in working condition 1,500 pounds or over. Such a horse not only meets the needs for efficiency and economy in farming operations, but it also sells for the high dollar on the open market. Market reports show that the bigger they are the better the prices, providing size is combined with quality and substance. The following is typical: "Common 1,300 to 1,400-pound chunks, \$165 to \$185; medium weight (1,400-1,500) chunks with flesh and quality, \$190-\$215; and heavy weight (1,500-1,600 pound) chunks \$200-\$225. Horses weighing 1,600 pounds or more ready to go to work, \$275-\$350."

If the horse raiser hopes to raise the most efficient farm horse which is also the most profitable market horse, he must observe more carefully the fundamentals in profitable horse production. Some of the most important are:

First, he must observe more closely changing economic and market conditions which affect horse demand, value and prices.

Second, he must appreciate more thoroughly those features of conforma-

tion and soundness that make a horse a good individual.

Third, he must study more carefully the various types of horses, that he may be able to select the efficient and profitable type.

Fourth, he must consider more thoroughly the cost of production. Today the average horse breeder of this country is raising a \$101 horse at a cost of \$104.

Fifth, he must learn to appreciate more fully the value of good, sound, pure-bred sires.

Sixth, he must retain for breeding purposes the best mares at his command if

he would produce the most profitable kind of horse.

Seventh, he must learn to feed his colts more liberally from the time they are old enough to eat, bearing in mind that the feed and care the colt receives during the first year and a half of its life, and particularly during the first winter, determine very largely what that colt will be at maturity.

Eighth, he must give more attention to the care of his horses, especially the brood mare. The fact that only one colt is raised from every three mares mated means a tremendous loss to horse production.

Ninth, he must take a more active interest in local horse and colt shows since there is nothing equal to a good horse

and colt show to stimulate a keener interest in better horses.

Tenth, he must appreciate more fully the value of community co-operation. Each essential previously mentioned is important, but horse production can never reach its full achievement without the combined effort of the community.—Circular, Kansas State Live Stock Registry Board.

Be sure and see that the hens in the breeding pens are not too fat. The offspring of any over-fat animal is likely to lack vitality and vigor. The same holds true with hens. The loss of many of the chicks which pip the egg in the incubator and fail to get out of the shell, can be attributed to this cause.



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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.

No soul is desolate as long as there is a human being for whom it can feel trust and reverence.—George Eliot.

Crossroad Dangers

Extra precautions should be observed at this time of the year in crossing railroad tracks or opposite highways. Because of heavy clothing and side curtains on the buggy or automobile, it is a little troublesome to make sure there is no danger, but any amount of inconvenience in gaining this assurance is trivial compared with the loss of life due to carelessness at these crossroads.

Only recently eighteen people were killed and thirty-six injured in grade crossing accidents on one railroad's right-of-way in ninety days. Undoubtedly many of these accidents were the result of careless driving. Many vehicle collisions happen in the same way, neither driver taking the time to make sure the way is clear before crossing.

Old-Time Spelling Schools

We seldom hear of a "spelling school" in these days, and judging from the number of poor spellers there are, one of the best means for impressing the importance of spelling upon pupils is being neglected. Can't you remember how you aspired to remain standing after all the rest in your line and in the one on the other side of the room had had to go to their seats? The weekly spelling match at the close of the regular classes Friday afternoon served to strengthen our memory on the spelling of words. It kept us in good trim for the occasional evening contest, too, and incidentally we learned to spell through our efforts to avoid being "spelled down" in these matches.

The evening spelling school, because of its bringing together all members of the families in the districts, had a social value, and such gatherings should be encouraged.

Many of the seed house catalogs are now being mailed. Now is a good time to plan the flower and vegetable gardens as we can give this planning more study and thought now than we can when the rush of doing the work is upon us. Many of these "garden books," as they are called, contain much valuable information on the care of the garden and flowers in addition to listing the different varieties for sale.

"The Farm Kitchen"

This is the title of a very readable circular recently issued by the extension division of the Missouri College of Agriculture. It contains many excellent suggestions for making this most important workshop convenient and comfortable. There are also many illustra-

tions of good and poor arrangement of the kitchen furniture, windows and doors.

The housewife must necessarily spend much of her time in the kitchen, but her work can be greatly simplified by proper arrangement and the use of needed equipment.

It is easy enough to build a new kitchen so that it will be convenient, but there are many old kitchens that could, with little expense, be made to much better answer their purpose.

The important thing in building or remodeling a kitchen is that it be made to protect the health and conserve the energy of the housewife. This is accomplished by tables, stove and all other working surfaces being the proper height and arranged conveniently, by having good ventilation, and a finish on floor, ceiling and woodwork that can be easily cleaned.

Boys' and Girls' Clubs

Few other agencies are doing more at this time to keep the boys and girls on the farm, than are the agricultural clubs. Love for farm life can best be developed through interest in the things of the farm.

The boy and girl doing the work of the agricultural club cannot escape becoming interested in the line of work covered by the club and this will lead to a general interest as they find the farm as a whole has a bearing on the club operations. If the child is feeding a pig or calf or milking a cow for specific results, it will not be long before he will realize he must know many things besides the pig, the calf or the cow before he can be successful, and he will learn of these other things, too, because of their relation to his work—because he has a real interest in them.

The same thing is true regarding any of the many agricultural clubs for boys and girls. Then tend to create a real interest in the things of the farm.

Clubs for 1917 are now being organized by Otis E. Hall, state club leader for the Kansas Agricultural College and the Federal Department of Agriculture. Boys and girls should be encouraged to send their names to him if they know the clubs they would like to join. If not, they should write him at Manhattan asking about the different clubs. If there is an agricultural agent in the county, he will be able to give this information. The ages for admittance to the clubs are ten to eighteen years.

The public health service, which has been gathering statistics on nervous diseases and their tendency to shorten life, recently issued a bulletin against worrying. "So far as is known," says the bulletin, "no bird ever tried to build more nests than its neighbor, no fox ever

Business Measurements for the Young Man

THE boy who neglects his opportunities for mental, moral and physical development does not have a "ghost of a chance" with the one who in early childhood is impressed with the thought that he is all the time building for the future and can meet the responsibilities ahead only by carefully building his life and moulding his character day by day. A strong constitution—physically, morally and mentally—is not bestowed upon the mature individual regardless of the way the years of youth have been used. He has an important part in coming into the possession of this great gift—he is not merely the receiver but the builder.

In its search for a young man to fit into an important place, a large business concern recently named these requirements: "High character, first class ability, possession of common sense in a conspicuous degree, enthusiasm, sympathy for people, thorough education, ability to think clearly and ambition to climb to the top, natural optimism, amiable temper, well-developed funny-bone; good habits, good health, and a sound constitution."

These requirements are not unusual coming from those in search of business associates. The leaders in all lines are more and more realizing the relation between these qualifications and good business.

Should this not make us very thoughtful about the influences with which we surround our youth?



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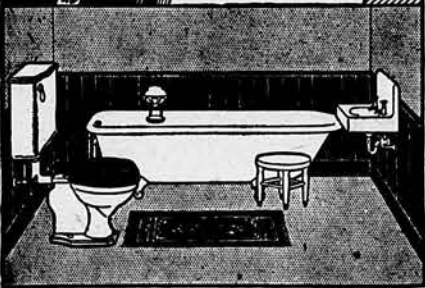
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fretted because he had but one hole in which to hide; no squirrel ever died of anxiety lest he should not lay by enough nuts for two winters instead of one, and no dog ever lost any sleep over the fact that he did not have enough bones laid aside for his declining years."

Water, if pure and taken into the body in large quantities, dissolves and carries away waste and poisonous products. For this reason we should not allow ourselves to become careless or negligent about drinking water. It is a good body conditioner and very necessary to health.

Canary Bulletin

Those of our readers who have canaries will be interested in knowing that the Federal Department of Agriculture has just issued a bulletin about these birds. A note at the beginning of the bulletin states it has been written to take care of the numerous requests which are continually received for information on the care of canaries in sickness and health. The bulletin gives a short history of the canary, the varieties—these are illustrated—a page on cages, care of cages, food, bathing, molt, color feeding, breeding, sex and age, vermin, care of feet and bill, broken limbs, loss of feathers about head, and diseases. The twenty pages about these winged pets are full of interest and help to the canary owner.
This bulletin is free for the asking.

A request to the Federal Department of Agriculture, Washington, D. C., for Farmers' Bulletin 770, will bring it to you.

Spanish Rice

Boil one cupful of rice in two quarts of boiling water to which has been added one tablespoonful salt. Fry large onion, cut in small pieces, and two canned pimientos, cut in pieces, in about two tablespoonfuls of butter, until the onion is delicately browned. Add one large cupful of tomatoes. Simmer few minutes and add to rice. Cook one-half hour or until rice is very tender.

Scalloped Salmon

1 can salmon
1 cupful white sauce
Put half the salmon in buttered pudding dish, pour in half of the white sauce, add balance of salmon, then white sauce. Top with layer of cracker crumbs. Bake until brown.

The white sauce is made as follows:

2 tablespoonfuls butter
2 tablespoonfuls flour
1 cupful milk
1/4 teaspoonful salt
Few grains pepper

Put butter in sauce pan, stir until melted and bubbling. Add flour mixed with seasonings and stir until thoroughly blended. Pour the milk on gradually, adding about one-third at a time, stirring until well mixed, then beating until smooth and glossy.

FASHION DEPARTMENT — ALL PATTERNS TEN CENTS

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



No. 8034—Girls' Dress: Cut in sizes 4, 6, 8 and 10 years. This illustration shows a little dress of simple loveliness. The body part is in the long-waisted effect, with side front closing and the skirt a plaited model. The always fashionable contrasting goods for the collar, cuffs and belt makes other trimming unnecessary, but a bow he may be added without taking attention from the excellent lines of the frock. No. 8044—Ladies' Middy Blouse: Cut in sizes 36, 38 and 40 inches bust measure. This model offers a surprise in a middy blouse. The front is fitted with a yoke, below which two box plaits are introduced with good effect; at the back, three box plaits fall from a yoke and a separate belt keeps them in graceful line. The collar, band cuffs and trimming of the patch pockets are in contrasting color. No. 7983—Girls' Dress: Cut in sizes 8 to 14 years. The more extreme ideas in girls' dresses for fall are featured in this one, a back-buttoned model having pannier pockets for its chief attraction. A well-cut collar and large bow tie have a deal of style merit and the plaited skirt joined to the waist under a belt of material is girlishly graceful. No. 7534—Ladies' Dress: Cut in sizes 34 to 42 inches bust measure. This simple frock shows the plain blouse with center front closing, the neck high and finished with a wide square collar. The sleeves are plain and full length, but may be shortened. The skirt has three gores. No. 8038—Ladies' Skirt: Cut in sizes 24 to 32 inches waist measure. In graceful, rippling style, and with just the right degree of flare for a fall model, this skirt for dressy wear is cut in two gores. The wide sash girdle and fancy pocket are the detail features of interest that satisfy the need for novelty. The width of the lower edge of the garment in size 24 is three yards. No. 8015—Maternity Gown: Cut in sizes 34 to 44 inches bust measure. To add to its comfort-giving qualities, the sides of body and sleeves are in one piece in this dress, and there is a body lining with darts in each front and the front edges finished with eyelets for lacing so that the garment adjusts itself to changing figure and still preserves the normal appearance. The skirt is cut in one piece and is gathered on an elastic.



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"I know what will change mother's mind"

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"My success in raising chickens is Mrs. Romigh," says her husband. At any rate Mr. and Mrs. Chester Romigh made \$1,800 net in 1916 raising chickens on four city lots in Omaha. Yet every day he worked from 6 a.m. to 2 p.m. as a mail clerk.

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paying for our home—all from the chicken profits. In 1915 the chickens made \$1,500 net; \$1,800 in 1916. They have also bought a Ford Automobile, vacuum cleaner, electric washer, and put money in the bank. We expect bigger profits this year."

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"There is no secret about it," said Mr. Romigh. "Any other working man can do the same thing if he has a wife, daughter or mother who is interested in chickens."

What the Romighs did, you can do. And one of the first things you need is a good incubator. An incubator is just as essential to poultry raising as a plow is to successful farming. And when you buy an incubator, your success is made more certain still if you

select the reliable Rayo Incubator. Keep your hens laying and let a Rayo do the hatching for you this year. It will do it easier, cheaper and better by far. The saving in eggs alone will more than pay the cost of the machine in a season. At the present high prices of eggs, you can't afford to do any setting of hens. Not with eggs at 70 a dozen! The big increase in prices is making poultry raisers rich. At such prices you've got to keep the hens busy

RAYO Center Heated INCUBATORS Give Bigger Hatches at Less Cost

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One Gallon Oil—1 Filling of Tank
These two special Rayo advantages prove our claim of low cost of operation. Other incubators require 3 to 6 gallons of oil to a hatch. Rayo only 1 gallon (see second view in panel below). Saves its cost in fuel alone. Takes only 1 filling of oil tank to a hatch (see fourth view in panel). Others require 1 filling of lamp each day or 21 times to a hatch. Think of the time and labor saved!

Six Big RAYO Features

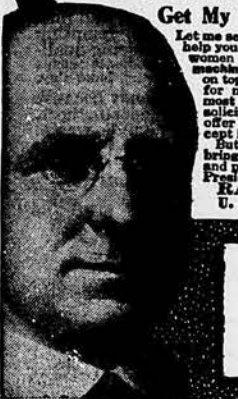
Every one stands for bigger hatches at less cost and less work. 1st. Our Center Heating System means economy of fuel, more perfect heat regulation and ventilation. 2nd. Automatic Heat Control, which regulates the heat on the lamp—economy and efficiency. 3rd. Double Panel Glass Top makes it easier to operate and see at all times how your hatch is going (see 3rd view in panel below). Easier to air and clean, too (see first view in panel). 4th. One Gallon of Oil to a Hatch saves you money. 5th. One Filling of Tank saves you time and labor (see fourth view in panel). 6th. Perfect ventilation. Also proper moisture arrangement. These and many other special money saving, labor saving and better hatching features explained in detail in our big Free Catalog.



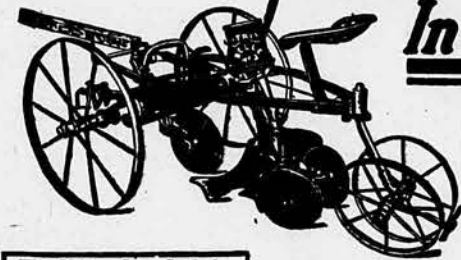
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Let me send you my new money-saving plan that will help you get a Rayo this season at little or no cost. You women ought to have a Rayo, because it is the women's for my new 1917 Special Cooperative Offer. The most helpful offer ever made to poultry raisers. No soliciting. No canvassing. Just a straight business offer you will be glad to accept. No obligation to accept it unless you wish.

But, anyway, write for our catalog. A postal will bring it free, postpaid. It's chock full of incubator and poultry-raising facts. Write now. D. M. Davis, President.
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How to Succeed With Incubators

By Ross M. Sherwood, Poultry Department, K. S. A. C.

"WHY do so many incubator chicks die in the shell even after having broken the shell?" A common reply is that there is not enough or too much moisture in the incubator at hatching time. This may be a reason, but there are a number of other things which may cause it.

First, one should remember that no special exertion is necessary on the part of the chick to develop within the egg. The little germ simply responds to the conditions furnished. Hatching is a more difficult task. The chick must use all the energy it has to break from the shell. If the chick is weak it may not be able to break out immediately after pipping. This delay allows the membrane to toughen and makes it more difficult or even impossible for the chick to get out. Thus the answer to the question might be that the egg contained a germ too weak to develop a chick strong enough to get out of the shell.

CAUSE FOR WEAK GERMS

"If that is the answer, then what causes weak germs?" They may be caused by poor conditions of the flock before the egg is laid, as well as improper care of the egg before being placed in the incubator.

Only fowls which are strong and vigorous should be used to produce the eggs for hatching. Eggs from yearling hens generally hatch better than those from pullets. With some farmers it is impossible to have the hens separate from the pullets. In this case it pays to make a careful selection of the eggs and use only those a little above the average size. Neither the smallest nor the extra large eggs hatch well.

The hens should be mated early and be housed in a house with sufficient ventilation. Lack of ventilation injures the health of the hens and the hatching quality of the eggs they lay. Careless feeding, with an excessive amount of animal or mineral feeds may cause the fowls to produce eggs which will not hatch well. Plenty of range, which furnishes sufficient exercise and green feed, is necessary.

Even though good eggs have been produced a number are often ruined on account of age, temperature, rough handling or because they have been soiled. Eggs set very soon after being laid give better hatches than older ones. After they are held more than a week to ten days the hatching percent is lowered rather rapidly. Eggs held for hatching should be kept at a temperature of 45 degrees to 60 degrees Fahrenheit and turned every day or two. The reason they must be kept below 60 degrees is because the germ begins to develop slowly whenever they are kept at a temperature above 70 degrees Fahrenheit, and this slow development injures the vitality of the germ. It is thus safer to hold them as low as 60 degrees to be sure that they do not ever get above 70 degrees.

When hatching eggs are purchased from a distance it is advisable to candle them to see whether or not they have been roughly handled or whether they are too old to give best results. If they have been roughly handled the shell membrane may be broken and the air cell will be directly over the germ. Such eggs will not hatch. This defect as well as fine cracks will show up if the eggs are candled. The size of the air cell will also be seen by candling. In a fresh egg the cell is from the size of a dime to the size of a nickel. As the egg ages, the size of the cell gradually increases.

After the eggs have been carefully examined they may be set at once. Resting of eggs which have been shipped does not make them hatch better. The washing of dirty eggs does not make them hatch as well as eggs which have never been soiled. Dirty eggs should never be used for hatching.

HATCHING WITH INCUBATOR

The next question may be, "Is it necessary to use an incubator on the farm?" This depends upon certain conditions. If the fowls are carefully handled to produce winter eggs it is advisable to hatch early so the pullets will be mature and ready to lay before cold weather comes on. This generally necessitates the use of an incubator. The same is also true of the farmer who keeps such breeds as the Leghorn, Minorca, etc., which seldom become broody. A number have been afraid that the use of an incubator

would ruin the constitutional vigor of their poultry. If culls are disposed of whenever found, the vigor of the chickens will not be injured. Culling is also a good practice in hen hatching.

"What kind of an incubator should be purchased?" It makes little difference whether one selects a hot-water or a hot-air machine, provided it is well made and has an efficient heat regulator. Both of these types of machines have their advantages and advocates, but either one, when properly handled, will bring off good hatches. A poorly made, poorly insulated machine with an inefficient regulator is dear at any price. When one considers the life of a good machine, the difference of a few dollars should not be considered.

"How should an incubator be operated?" Each incubator company furnishes excellent directions with its machine. These directions should be carefully studied. If this set of instructions is lost, another should be secured from the incubator company. The things considered are temperature, ventilation, turning, and cooling.

The exact temperature, between 102 degrees and 103 degrees Fahrenheit, varies with the type of the incubator, methods of handling the eggs, location of the thermometer, etc. If the bulb of the thermometer is placed on a fertile egg the temperature should be allowed to raise a degree or so during the incubating period. When the thermometer hangs an inch or more above the eggs the temperature should remain the same during the entire incubating period.

Ventilation is important largely because of its effect on the evaporation of moisture from the egg. Most hot-air incubators and a number of hot-water machines give better hatches when a pan of water is placed in the incubator to prevent too rapid evaporation of moisture from the eggs. This pan is often placed on the floor of the incubator under the tray of eggs. A few hot-water machines have so little ventilation that the eggs do not dry down enough. These machines must be provided with more ventilation. A number of people determine whether the evaporation is correct by comparing the size of the air cell with that of eggs set under hens for the same length of time.

Eggs turned twice a day hatch better than eggs turned only once. A good method of turning is to remove three or four rows of eggs from the front of the tray, and then gently roll the remaining eggs forward and toward the center of the tray. It is not necessary to turn eggs exactly over. The eggs removed from the front of the tray should be replaced at the back and the tray placed in the machine in the same position as it was before being removed.

With some machines, better results are secured when the eggs are cooled a few minutes daily from the third to the eighteenth days. The recommendations of the incubator company should be followed in this matter.

INSPECT AND TEST INCUBATOR

A number of precautions such as testing the thermometer and heat regulator and disinfecting the machine should be observed each year before the machine is used. The thermometer may be tested by placing it in water at different temperatures with a thermometer that has already been tested. If they do not agree another thermometer should be secured.

The regulator may be tested by heating up the machine or, in the case of machines with a disk thermostat, by carefully holding a match under the wafer to see that it is sensitive. If it is not, it should be discarded and another one secured. A wafer is cheap as compared with the value of the eggs.

Before starting the machine in the spring the incubator and all its parts should be cleaned and thoroughly disinfected with a 3 percent solution of a good disinfectant. This prevents the spread of any disease which may have been in the machine the previous year. The machine may be heated up a couple of days before it is aired out and used for hatching.

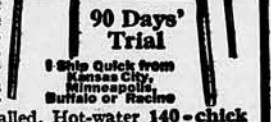
Stock weakened by disease should be sold.

Allow stock free access to grass range, and feed sparingly.

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Conditions easy to get biggest prize. Start early—order now—anyway write today for my Big Free Book, "Hatching Facts". It gives short cuts to poultry success. Jim Rohan, Pres.

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SEED CORN—DIAMOND JOE WHITE, excellent drought resister, and Reid's Yellow Dent. Graded, \$2.50 bushel. D. D. Denver, Milford, Kansas.

IOWA GOLD MINE AND BOONE CO. White seed corn, selected, shelled, graded, \$2 per. Choice alfalfa seed, \$7.50 per. Samples free. J. F. Feigley, Enterprise, Kan.

REID'S YELLOW DENT, BOONE COUNTY White seed corn. Genuine Red Texas seed oats, clover, timothy and alfalfa seed. S. G. Trent, Hiawatha, Kansas.

TREES, SHRUBS, PLANTS, VINES, seeds. Everything at lowest prices direct to you. All tree peddlers' commissions cut. Free book. Wichita Nurseries & Seed House, Shell Bldg., Wichita, Kansas.

ORANGE AND GOLDEN CANE, STAND-ard and dwarf kafir, red and cream dwarf maize, each \$4.50 per 100 pounds, prepaid in Kansas. Claycomb Seed Store, Guymon, Okla.

SEED CORN—JOHNSON CO. WHITE, Boone County White, Reid's Yellow Dent, Hiawatha Yellow Dent. Won first and sweepstakes at state show. Write George R. Manville, Fayette, Mo.

SEND \$1.00 FOR 100 PROGRESSIVE strawberry plants and get our Twentieth Century Berry Book absolutely free. Worth dollars to you. E. W. Townsend, Box 3, Salisbury, Md.

RED TEXAS RUST-PROOF SEED OATS, cleaned and carefully graded. You buy nothing but oats. Grown here one year. They are fine. Let me send you a sample and price. Warren Watts, Clay Center, Kan.

ALFALFA SEED FROM HIGH PRODUCING fields, 370 bushels threshed from forty acres. Quick to recover after each cutting. 95% germination, 99 purity. Test made by County Agent Schnacke. Won first at our fair. Price, \$8 per bushel; new sacks, 25c. Stockwell Farms, Larned, Kansas.

KAFIR SEED—WE HAVE TWO CARS fine white kafir seed testing over 90 per cent germination, which we will sell while it last in 2-bushel sacks at \$1.85 per bushel. Sacks free. It is going to be hard to find good kafir like this this year. If you will need kafir, better order quick. Brooks Wholesale Co., Ft. Scott, Kan.

DOGS.

FOX, WOLF AND COON HOUNDS; rabbit dogs. Reasonable. J. P. Tindall, Lees Summit, Mo.

FOR SALE—PAIR GUARANTEED COON hounds. Send 2 cents for prices. John Rash, Centerville, Kansas.

AIRDALE—THE GREAT TWENTIETH century dog. Collies that are bred workers. We breed the best. Send for list. W. R. Watson, Box 128, Oakland, Iowa.

PATENTS.

PATENTS—PICTURE OF PATENT OFFICE and 3-year calendar free. Fitzgerald Co., Patent Attorneys, 841 F St., Washington, D. C. Established 1880.

THE STRAY LIST.

TAKEN UP—BY OWEN O'NEIL, OF Windom, McPherson County, Kansas, on the twentieth day of December, 1916, one heifer coming two years old, color deep red, no marks or brands, W. E. Rostine, County Clerk, McPherson, Kansas.

NOTICE IS HEREBY GIVEN THAT ON December 28, 1916, one red steer with horns, three years old, was taken up by W. E. Kimel in Ninnescah Township in Sedgwick County, Kansas. Said animal was appraised December 28, 1916, at \$50. H. M. Barrett, County Clerk, Wichita, Kansas.

TAKEN UP—ON THE 15TH DAY OF March, 1916, by C. S. Heath, whose residence is eight miles north and 3 1/2 miles east of Leoti, East Edwards Township, Wichita County, one mare pony about 4 1/2 feet high, weight 750 pounds, color sorrel, age nine years, brand "C" on left hip, white stripe in face, appraised at \$30. Dean Trueblood, County Clerk, Wichita.

HORSES AND MULES.

CLOSING OUT SALE OF SHETLAND ponies. Geo. Aid, Gallatin, Mo.

FOR SALE CHEAP—TWELVE JENNETS, good breeding. Geo. S. Stullken, Bazine, Kansas.

FOR SALE—THREE REGISTERED PERcheron stallions, coming 2 years old. W. E. Dustin, Route 1, Topeka, Kansas.

SALE OR TRADE FOR YOUNG STOCK, 15-16th Belgian stallion 9 years old, weight 2,000 pounds; 65 per cent breeder. W. G. Shideler, Silver Lake, Kansas.

WANTED—TO TRADE 1,000-POUND registered blue ribbon jack, 7 years old, black, for good draft stallion. J. E. Itschner, Box 122, Sayre, Okla.

ONE REGISTERED PERCHERON STALLION, 4 years old, weight 1,950 pounds, black with small star, Reg. No. 89169. One road stallion, "Ben Weaver," track record 2:18. One mammoth black jack, 4 years old, heavy boned, 14 hands. All good breeders and colts to show. Emera H. Stedd, County Clerk, Lyons, Kansas.

CATTLE.

FOR SALE—REGISTERED HOLSTEIN bull, fifteen months old. Good breeding. Priced to sell. F. E. Weed, Athol, Kansas.

POLLED JERSEYS—BREEDERS' NAMES of Chas. S. Hatfield, Secy., Box 40, Route 4, Springfield, Ohio.

FOR SALE—REGISTERED GUERNSEY bull, serviceable age; May Rose-Glenwood breeding. For description and price write W. E. Evans, Jewell, Kansas.

FOUR REGISTERED JERSEY COWS and heifers for sale. Golden Lad and St. Lambert breeding. Priced to sell. W. F. Pyke, Marion, Kansas.

300HEAD OF REGISTERED AND HIGH grade cows and heifers for sale, headed by the great 40-pound bull, Johanna King Segis. Neal Houslett, Oxford, Wis.

FOR SALE CHEAP—A PURE-BRED Jersey bull, four months old; from an extra good milk. Milk test of nearly 8 per cent. Eber Anderson, Clay Center, Kansas.

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

FOR SALE—FOUR REGISTERED JERsey bull calves, Financial breeding, good enough for any herd. Priced cheap. Must sell. Earl Eager, Beaver Crossing, Neb.

FOR SALE—SIX PURE-BRED SHORTHORN bulls from six to ten months old. Good lustrous calves at the right price. Warren Watts, Clay Center, Kansas.

HOLSTEINS FOR SALE—ONE PURE-bred heifer calf and four grades, nicely marked and colored. Arthur Findlay, Whitewater, Wis.

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

GOATS

FOR SALE—MILCH GOATS. BURR Fleming, Eminence, Kansas.

FARM AND HERD.

"Under no consideration should farmers pay out any money or give any notes to agents or strangers purporting to be working in the interests of the new Farm Loan Law."—Secretary, Federal Farm Loan Board.

See that the fly wheels run true on the engine you buy, for this is an indication of first-class workmanship. The fly wheels should be good and heavy and the engine should run with but little shaking and vibration, showing that it is properly balanced.

The prospects for the live stock show to be held at Wichita, Kansas, February 26 to March 3 inclusive, are very bright. Exhibitors all over the country are taking an active interest and entries are coming in rapidly. This show will be held during the annual convention of the Kansas Live Stock Association. The consignments of stock to go in the sales of the various breeds are from the best herds in the country and the offerings in the sales will be very high class. On February 26 the sale of sixty head of Poland China and Duroc bred gilts will be held. February 27 sixty head of carefully selected Hereford cattle will be sold. February 28 is the date of the Shorthorn sale. Sixty head of good ones will sell. March 1, sixty high class Percherons from noted herds will be sold. March 2 the offering will be coach horses, trotting bred horses, French and German coach horses and a choice lot of jacks. The series of sales will close March 3 with an offering of sixty head of choice dairy cattle.

RELIABLE POULTRY BREEDERS

PLYMOUTH ROCKS.

BARRED ROCK COCKERELS AND PULLETS. Nat A. Owens, Traer, Iowa.

BARRED ROCK EGGS—WILL PLEASE. \$1. postpaid. Mrs. Geo. Kennedy, Edmond, Okla.

WHITE ROCKS, SIZE AND QUALITY. Prices reasonable. Write G. M. Kretz, Clifton, Kansas.

FOR SALE—BUFF ROCK AND BLACK Langshan roosters, good ones, \$1.50 each. Newton Coffman, Rosendale, Mo.

CHOICE BARRED PLYMOUTH ROCK cockerels and pullets, \$2 to \$3 each. E. Leighton, Effingham, Kansas.

WHITE ROCK COCKERELS, HALBACK strain, \$3. Mrs. E. E. Merten, Clay Center, Kansas.

BARRED PLYMOUTH ROCKS—FARM-bred beauties. Eggs for hatching, 5c each. Mrs. W. C. Becker, Solomon, Kan.

FINE BARRED ROCK COCKERELS, \$1.50. White Pekin Drakes, \$1. Mrs. Bryant Wells, Belmont, Kan.

FOR SALE—BARRED ROCK EGGS, C. A. Hawk strain, \$1.50 per setting. Mrs. Wm. L. Shelly, Route 1, Atchison, Kansas.

PARTRIDGE ROCK COCKERELS—Notzger strain. Clarence Hoffman, Preston, Kansas.

BUFF AND WHITE ROCK EGGS—FE-males scoring high as 96 and 96%. Mating list. W. H. Beaver, St. John, Kansas.

PURE-BRED S. C. BARRED ROCK cockerels for sale and eggs in season. Mrs. Otho Farmer, Farnam, Neb.

NICELY BARRED ROCK COCKERELS, \$1.50. Cocks, pullets, \$1.00; eggs, \$1.00. J. T. Hammer, Oak Hill, Kansas.

WEIGHER-LAYER BARRED ROCKS—Pens, \$3 to \$5 setting; flock, \$5 hundred. Stock for sale. C. F. Fickel, Earlton, Kan.

ARISTOCRAT AND BRADLEY STRAIN Barred Rock cockerels, good size, bone and barring. Mrs. Bert McTaggart, Pawnee, Ill.

HATCHING EGGS FROM BARRED PLY-muth Rocks, excellent birds. Two dollars for fifteen. Peter H. Friesen, Route 1, Lehigh, Kansas.

BUFF ROCK COCKERELS—LARGE, early, clear buff to skin, \$5 up. Garlic sets, 20c per pound. Don Chace, Leavenworth, Kansas.

BLUE RIBBON BARRED ROCKS—Twenty-eight years' experience; 110 premiums. Cockerels, \$3, \$8; eggs, fifteen, \$3. Mrs. Chris Bearman, Ottawa, Kansas.

"FISHEL" WHITE ROCKS, PURE-BRED. Four hens, three pullets, \$3 each; one extra fine cock, \$5; the pen, \$24. Harper Lake Poultry Farm, Jamestown, Kansas.

FOR SALE—EXTRA FINE BARRED Rock cockerels. Cockerel mating. Pure Thompson strain. Sired by 25 bird. \$3.50 to \$5 each. G. W. Romberg, Red Oak, Iowa.

FINE LARGE BARRED AND WHITE Rock cocks and cockerels. Forty-five prizes last year. Write for prices and mating list. H. F. Hicks, Cambridge, Kansas.

BUFF ROCKS—WILL CLOSE OUT RE-maining utility cockerels from my New York, Chicago and St. Louis winners at \$3 each. Pullets, \$1.50 up. T. H. Lucas, Pattonville, Mo.

BARRED PLYMOUTH ROCKS, RHODE Island Reds. Fine lot of birds now ready for shipment. Prices reasonable. Quality guaranteed. Eggs in season. Tom Lett-wich, Winfield, Kansas.

LINDAMOOD'S BARRED ROCKS, BOTH dark and light matings. Prices for eggs from special matings, \$5 per fifteen. Utility eggs, \$5 per hundred. Send for circular. C. C. Lindamood, Walton, Kansas.

BARRED ROCKS—FINE LAYERS, large size, yellow flesh, hardy. Buy the best. Prize winners at Missouri's two big shows. Eggs, fifteen, \$1.50; hundred, \$7. M. E. Lane, Clinton, Mo.

BLUE RIBBON WINNERS, MISSOURI and Kansas state shows. Barred Rocks, Ringlet strain. Eggs and stock for sale. Satisfaction guaranteed. Hartman's, Route 1, Webb City, Missouri.

BRAHMAS.

LIGHT BRAHMA COCKERELS—100 good heavy birds, have won prizes at leading shows. Can surely furnish you quality. Schreiber Farm, Sibley, Iowa.

LIGHT BRAHMAS, FELCH STRAIN—Twelve premiums, fourteen entries in Kansas State Show; stock and eggs. Satisfaction or money back. Mrs. J. R. Kenworthy, Wichita, Kansas.

ANCONAS.

ANCONA EGGS, SIXTEEN, \$1; 100, \$5. W. G. Shaw, Cherokee, Okla.

SINGLE COMB ANCONAS—EGGS, FIF-teen for \$1.25 or \$6 per hundred delivered. Write for printed matter. C. K. Whitney, Route 9, Wichita, Kan.

TURKEYS.

SARVER'S FAMOUS NARRAGANSETT turkeys, large boned stock, unrelated. Sun-light Poultry Farm, Mt. Moriah, Mo.

WHITE HOLLAND TURKEYS, SINGLE Comb White Leghorns, Single Comb Buff Orpington eggs. Baby chicks. Mrs. S. A. Warren, Reger, Mo.

FIFTY MAMMOTH BRONZE TURKEYS. Toms, \$7.50, \$10, \$15; pullets, \$5, \$10; hens, \$10, \$15. Eggs—Yard 1, \$1 each; second, 50 cents. Black Langshans, Barred Plymouth Rocks, show record. Order direct from ad. Order early. Jas. W. Anders, Unionville, Mo.

RHODE ISLAND REDS.

DARK RED ROSE COMB RHODE ISL-and Red cockerels, \$3 and \$4 each. Mrs. F. A. McGuire, Paradise, Kansas.

EGGS FROM PRIZE WINNING ROSE Comb Rhode Island Reds. Catalog free. M. L. Puckett, Puxico, Mo.

R. C. RHODE ISLAND RED COCKER-els, extra fine, \$3 each, two for \$5; eggs, \$5 per hundred. Redview, Irving, Kansas.

S. C. R. I. RED MALE BIRDS—WIN-nings for last three years, 12 firsts, 8 seconds, 5 thirds, 4 fourths, and 7 specials. James Sisters, Olathe, Kansas.

ROSE COMB RHODE ISLAND REDS—Eggs, \$2 per setting. Kansas state show winners. Mating list. L. E. Castle, Wichita, Kansas.

SINGLE COMB RHODE ISLAND RED cockerels, large husky dark red fellows that will improve your flock, \$3 to \$15 each. Write for price on hatching eggs. Nels W. Peterson, Mason City, Neb.

EGGS FOR SALE—S. C. R. I. REDS.—Breeder for twelve years. \$1.50 per setting of fifteen; \$5 a hundred. Mrs. Jno. G. Schmidt, Route 1, Box 135, Edgewood, Lexington, Mo.

ONE HUNDRED ROSE COMB RHODE Island Red cocks and cockerels, sired by roosters costing \$15 to \$35—\$2, \$3.50, \$5 and \$7.50 each. A few higher. Order at once. They will go fast. Our pens mated for 1917 are the best we ever had. W. R. Huston, Red Specialist, Americus, Kansas.

MINORCAS.

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

LAWSON, MISSOURI, January 25, 1917.

KANSAS FARMER, Topeka, Kansas.

Gentlemen: I have had such great success with KANSAS FARMER that I have sold out long ago, and yet the inquiries and orders are coming in fast and have to be returned.

Thanking you for your past favors and wishing you the utmost success in KANSAS FARMER, I remain,

Very respectfully yours,

MISS CORDIA COX.

WYANDOTTES.

WHITE WYANDOTTE COCKERELS, U. A. Gore, Seward, Kansas.

R. C. BUFF WYANDOTTE EGGS, \$1.50 for fifteen. G. G. Wright, Langdon, Kan.

PARTRIDGE WYANDOTTE EGGS, \$3.00 per fifteen; \$5.50 per thirty. Mrs. O. E. Collins, Drexel, Mo.

FOR SALE—PURE-BRED WHITE WY-andotte cockerels, also eggs for hatching. Write for mating list. C. Shobe, Puxico, Mo.

EXTRA CHOICE ROSE COMB SILVER Wyandotte cockerels, \$2 each, six for \$10. Mrs. Philip Schuppert, Arrington, Kansas.

SHUFF'S "BEAUTIFUL" SILVER WY-andottes. Cockerels, \$2, \$2.50, \$3, \$4, \$5; hens, \$1.50, \$2. Mrs. Edwin Shuff, Plevna, Kansas.

REGAL STRAIN WHITE WYANDOTTES, weigh, lay, win and pay. Heavy laying strain. Eggs, \$2 and \$3 a setting, from blue ribbon stock Kansas State Show. F. P. Brown, 1461 Ohio, Wichita, Kansas.

SILVER LACED WYANDOTTES, WON first, second, third cockerel; first, second, third pullet, first pen, Northwest Missouri Poultry Association. Eggs in season, \$1.25 per fifteen, \$3.50 for fifty, \$6.00 per hundred, postpaid. Mrs. Arthur Wiley, Route 5, Maryville, Mo.

LANGSHANS.

BLACK LANGSHANS—EGGS, \$1.25 FOR fifteen. Young hens and cockerels, \$1.50 each. J. Medford, Wheatland, Okla.

BLACK LANGSHAN EGGS, \$3 FOR 15, from my San Francisco and Kansas State Show winners, 1917. H. M. Palmer, Florence, Kansas.

SEVERAL BREEDS.

EGGS AND BABY TURKS OF PURE-bred prize winning Bourbon Red turkeys, S. C. Reds, fine laying strain. Eggs and baby chicks. Booking orders now. Mrs. A. G. Friesz, Keytesville, Mo.

FREE—1917 PRICE LIST OF EGGS, ALL leading breeds of chickens, turkeys, ducks, geese and guineas. Monroe Poultry Yards, Monroe, Iowa.

QUALITY EGGS FOR HATCHING FROM the much wanted Imperial "Ringlet" Barred Plymouth Rock. "Goldbank" Mammoth Bronze turkeys; Golden and Chinese Ring-neck Pheasants. Orders booked for small deposit. Thank you. Harper Lake Poultry Farm, Jamestown, Kansas.

FOR SALE, EGGS—EGGS FROM PURE-breeds, and cockerels, turkeys, geese, eight kinds of ducks, pearl and white guineas, bantams, Barred, White and Buff Rocks, Rhode Island Reds, Houdans, Hamburgs, Games, Langshans, Minorcas, Brahmans, Cochins, Buff and White Orpingtons, Buff and Silver Laced Wyandottes, Leghorns, Hares, Rabbits, Guinea Pigs, Dogs, Fancy Pigeons. Write wants. Free circular. D. L. Bruen, Platte Center, Neb.

ORPINGTONS.

BUFF ORPINGTON EGGS FROM PRIZE winners, \$1.25 per fifteen. Mrs. Vail, 3610 Ida, Omaha.

SINGLE COMB BUFF ORPINGTON eggs from silver cup winners. Prices reasonable. Mrs. J. N. McDaniel, Arbela, Mo.

BUFF ORPINGTONS, EGGS AND CHICKS Bred for eggs 16 years. Circular free. Will Schadt, Box 1055, Goshen, Indiana.

FINE BUFF ORPINGTON EGGS FROM my regular winners, reasonable. H. T. Farrar, Axtell, Kansas.

EXHIBITION BUFF ORPINGTON EGGS, state, county winners. Bourbon Red turkeys. Prices reasonable. Write for catalog. Mrs. Rees Barton, Amoret, Mo.

SINGLE COMB BUFF ORPINGTON eggs from prize winners. Also some choice cockerels left. Mrs. Earle King, Raymore, Missouri.

BUFF ORPINGTONS—SOME GOOD HENS and pullets yet for sale. Eggs from winners, \$1.50 and \$3 per fifteen. L. S. Weller, Salina, Kansas.

LIMITED NUMBER WHITE ORPING-ton cockerels, bred from Aldrich best 1916 mating. Eggs from three fine pens. Satisfaction guaranteed. H. M. Goodrich, 712 Topeka Ave., Topeka, Kansas.

S. C. BUFF ORPINGTON COCKERELS and pullets whose grand sire was first prize winner at Madison Square Garden, New York. Price, \$2 to \$5. Guaranteed to please. Thos. D. Marshall, Sylvia, Kansas.

DAMON'S ORPINGTONS—MY S. C. BUFF and White Orpingtons win in all classes of competition. Five splendid matings in buff and whites. Imported blood. Write for mating list. Few white cockerels for sale cheap. J. E. Damon, Caldwell, Kansas.

DUCKS AND GEESE.

ENGLISH PENCIL INDIAN RUNNER drakes, \$1 each. A. Grant, Rosalia, Kansas.

ROYAL BLUE STRAIN ROUEN DUCKS, \$1.75 each. James Cassell, Fremont, Neb.

GEESSE, EMBDEN, TOULOUSE, CHINA; turkeys, ducks. All leading breeds of poultry. Emma Ahlstedt, Roxbury, Kan.

FAWN INDIAN RUNNER DUCKS BY the hundred, 95c; smaller lots, \$1 each. Mrs. E. C. Wagner, Holton, Kansas.

POULTRY WANTED.

PAYING FOR NO. 1 POULTRY: TUR-keys, 24c; hens, 17c; capons, 22c; ducks, 14c; guineas, dozen, \$5. Coops free. The Copes, Topeka.

BABY CHICKS.

BABY CHICKS—REDS, ROCKS, LEG-horns, 12½c. Eggs also. Request circular. McCune Hatchery, Dept. M, Ottawa, Kan.

ROSE COMB RED BABY CHICKS. I AM booking orders now. Order early. Lily Robb, Neal, Kansas.

LEGHORNS.

ROSE COMB BROWN LEGHORNS. MRS. Ida Standiford, Reading, Kansas.

S. C. W. LEGHORN EGGS. STATE WIN-ner. Mrs. W. R. Hildreth, Oswego, Kansas.

PURE-BRED S. C. WHITE LEGHORN cockerels. Mrs. D. Christmann, Oswego, Kansas.

PURE-BRED S. C. BROWN LEGHORN eggs, \$1 per fifteen, \$5 per hundred. Mrs. L. H. Hastings, Thayer, Kansas.

S. C. B. LEGHORN COCKERELS—FINE birds for sale, \$1.50 and \$2. J. J. Stalder, Meade, Kansas.

ENGLISH WHITE LEGHORN EGGS, cheap. Write for prices. I. M. Fisher, El Dorado Springs, Mo.

SINGLE COMB BROWN LEGHORN cockerels from high scoring stock, \$1 each. With combs frozen, 75 cents. Cornelius Phillips, Emporia, Kansas.

PRIZE WINNING SINGLE COMB BUFF Leghorns and Single Comb Reds. Extra winter layers. Eggs for hatching. C. B. Hinchliff, Hamilton, Mo.

S. C. BUFF LEGHORNS, HATCHING eggs. The quality kind from my winners at Omaha and Lincoln. Otto Timm, Bennington, Neb.

ROSE COMB WHITE LEGHORN COCK-erels, scored birds. Write for prices. Eggs for hatching, \$5 per hundred. Mrs. Joe Streeter, Route 5, Hamilton, Mo.

SINGLE COMB BROWN LEGHORNS—fine winter laying utility and beauty strain. Eggs from trap nests. Pullets in Leavenworth contest. Eggs, per hundred, \$4.50 and \$6; baby chicks, 12½ cents apiece. Paradise Poultry Farm, Carona, Kansas.

LEGHORNS.

ROSE COMB LEGHORN COCKERELS—Eggs in season. Mrs. John Holzhey, Bendena, Kansas.

SINGLE COMB WHITE LEGHORN cockerels. Dave Baker, Conway Springs, Kansas.

BROWN LEGHORNS—ROSE. SINGLE Comb. Bred to lay strain breeding. Eggs, fifteen, \$2; fifty, \$3; hundred, \$6. Plain-view Poultry Farm, Lebo, Kansas.

S. C. BUFF LEGHORN COCKERELS, \$2 to \$5 each. Bred to lay stock. Winners at state show. Eggs in season. Pearl Haines, Rosalia, Kansas.

SINGLE COMB BROWN LEGHORNS—Thirty-one prizes at Kansas State Show, 1917. Including eight firsts. W. J. Roof, Malze, Kansas.

PURE SINGLE COMB BUFF LEGHORNS. Buff Cochins Bantam cockerels, White Holland turkey toms. Mrs. S. F. Crites, Florence, Kansas.

RUSSELL'S FAMOUS BROWN LEG-horns, single comb, prize winners, heavy layers. Write for catalog. Satisfaction guaranteed. Mrs. Geo. Russell, Chilhowee, Missouri.

S. C. WHITE LEGHORNS. I AGAIN have state show prize winners, exhibition and utility cockerels for sale. Eggs. Eggs. Eggs. Mrs. Terry Junkins, Osawatomie, Kansas.

PRIZE WINNING S. C. WHITE LEG-horns at two state shows. Eggs, \$2, \$3 and \$5 per fifteen. Eggs from flock, \$5 per 100. Chicks. Send for free mating list. C. G. Cook, Box F, Lyons, Kansas.

SINGLE COMB WHITE LEGHORNS, Columbian Wyandottes, Muscovy ducks, fancy pigeons. Catalog. Southdown sheep, Berkshire swine. J. A. Leland, Springfield, Illinois.

S. C. W. LEGHORN COCKERELS FROM hens with records over two hundred eggs; one, two, three dollars each. Baby chicks, 12½c each. Eggs, \$5 per hundred. Hyperion White Leghorn Farm, Route 1, Des Moines, Iowa.

YOU WANT GOOD LAYERS. MOORE'S strain of S. C. Brown Leghorns are prize winners and winter layers. Eggs, \$1 for fifteen and \$4 for 100 postpaid. John W. Moore, R. R. No. 1, Poplar Bluff, Mo., formerly of Hendrickson, Mo.

Good Roads Bill Submitted

A bill modeled somewhat after the Iowa road law has been introduced in the Kansas legislature. In order that our readers may be informed on this bill, we give below a summary of its main provisions:

1. Provides for codification of all laws relating to dirt roads and the administration of all laws relating to highway construction and maintenance.
2. Provides for a state highway commission to conform to Federal Aid requirements. The commission to consist of the governor and two others to be appointed by him, the two to serve for \$5 per day and expenses. Their salary allowance not to be over \$200 per year.
3. Provides for state highway engineer to be employed by the commission.
4. The commission and engineer to be located at Topeka.
5. Provides that county commissioners shall appoint a county engineer, excepting that two or more counties may join together and employ an engineer when one county does not have enough work to require all of his time. The county engineer must be approved by the highway commission and state engineer.
6. Provides for appointment of road overseers by township boards, but the overseer must have the approval of the county engineer.
7. Provides for county system of highways. County commissioners shall lay out the system and if the systems of adjoining counties do not connect at county lines, then the state engineer has power to adjust the two systems to make them connect.
8. Provides for compulsory dragging of county roads and the patrol system of maintaining same.
9. Provides for maximum road tax levy for county of 1½ mills and a maximum for townships of 3 mills, the same as at present.
10. Provides that salaries of county engineers to be regulated by population of counties and to be the same as county clerks.
11. Provides that the highway commission may make rules and regulations relative to road management and building and use of roads where the provisions have not been made by law.
12. Provides that the highway commission may do educational work by holding road meetings and publishing facts and information relative to roads, road machinery, bridges, and any general information pertaining to improvements of and maintenance of the highways.

OVERLAND RED

A Romance of The Moonstone Canon Trail

(Chapter XXXII, "Morning"—Continued.)

"For the same reason that I can't now— you. Red and Billy Winthrop and I don't own a cent's worth of the claim now. I don't even own what's in the bank. All I got is Yuma."

"You gave Yuma to me, Collie."

"I sure did. I haven't even her. But I've got you. Oh, Louise! I can't believe it. I could just shout. Can't I have another one, Rose Girl?"

"Must I teach you not to ask?" said Louise.

Collie took her other meaning as she made a little mouth at him. "Not after this," he said, and gave apt proof that he meant it. "More than a whole carload of gold?"

She asked, gazing at him.

"You know that, too?"

"What is it?"

"Promise that you won't speak to any one about the claim, or the desert, or my father until I say you may."

"Of course I promise."

"Nor about ourselves, until I tell you to."

"Never—if it will make you happy."

Overland Red, sitting on a boulder beside the road, stooped and gathered up a handful of pebbles. Then, for lack of other interest, he invented a game of ancient and honorable origin. "She loves me," he said, tossing away a pebble. "She loves me not." And up spun another pebble. So he continued until the pebbles were gone. "She loves me not," he muttered lugubriously. Then his face brightened. "Of course she doesn't. She loves him. That's what I was tryin' to get at, anyway."

He fumbled at a huge bunch of little red flowers called "Hummingbird's Trumpets." He arranged the hastily constructed bouquet to suit him. Then he laid it on the rock.

"Accordin' to the latest book on good table-manners, or 'How to Be Happy Though Dressed Up,' this here bouquet is the proper thing. They'll think I'm some wiz' when I step out and present these here hummin'birds' bugles. Huh! I seen the two horses gone, and I gets wise direct. But I got to brace up. Wonder what she'll think about me—after hearin' what I said last night at the Old Meadow? Gee! I wonder what I did say? Did I cuss much? I forget. H-m-m. Good-mornin', folks. I—er—this here—them hummin'birds' bugles—Happy day—Collie, what's wrong with you? What you laughin' at?"

"You, of course. Where did you get the posies?"

"Picked 'em along the Golden Shore. Just got back."

"You do look scared, Red."

"Seem' you're gettin' personal—you needn't to think because you just been there that I never will."

"Say, Overland—I—we—" began Collie.

"I knowed it! I won't say a word to nobody."

Collie glanced at Louise. She nodded. Then she gave Overland her hand. He seized it and stood looking into her sweet gray eyes. "Little Rose Girl," he said quietly, "you always was the best and kindest and beautifullest we ever knowed. It ain't the first time you give your hand to help them that ain't fit to touch it. If there is any Golden Shore, I guess me and Collie will be there just because we knowed you down here and couldn't stay around, no-how, where you wasn't. And, believe me, if he don't treat you from now on like you was a plumb angel, I'll—I'll ride him off the big range and into space quicker'n shootin' stars! These here flowers is for you—not for that long-legged grasshopper ridin' your horse there. I should think Boyar would be plumb ashamed."

"Then Collie can walk," said Louise promptly. "Collie, will you please let Mr. Summers take Boyar? I want to talk with the President of—of my mine a little while."

"Don't faint, Chico," said Overland, swinging into the saddle. "I always was the 'cute little gopher with the ladies. You watch us ride up this trail if you want to see a pair that can ride."

Collie shook his fist at the grinning Overland, who had turned as he rode away. "You want to learn to act quick when a lady asks you," called Overland. "You didn't get off this horse any too spry."

Then Collie stooped and picked up a little red flower that had dropped from the boisterous one's offering.

They were talking about Overland. They had been discussing the rearrangement of a great many things since the news of Louise's heritage had become known.

"You had better close the muffler, Billy. You are frightening that pony!"

"That's the Yuma colt," said Winthrop. "Overland is riding her."

CHAPTER XXXIII
A SPEECH

The Marshalls and Billy Winthrop came in their car. The ride through the canon "Overland?"

"Yes. He's coming to meet us."

Plunging through the crackling greasewood at the side of the road, the Yuma colt leaped toward the car. In broad sombrero, blue silk neckerchief, blue flannel shirt, and silver-studded leather chaps, was a strangely familiar figure. The great silver spurs rang musically as the pony reared. The figure gave easily to the wild plunging of the horse, yet was as firm as iron in the saddle.

Anne drew a deep breath. It was not the grotesque, frock-coated Overland of a recent visit, nor was it the ragged, unkempt vision Louise had conjured up for her in relating the Old Meadow story. In fact, it was not Overland Red at all, but Jack Summers, the range-keeper of the old red Abilene days. He was clean-shaven, vigorous, splendidly strong, and confident. In the saddle, bedecked with his showy trappings, surrounded by his friends, Jack Summers had found his youth again, and the past was as a closed book, for the nonce.

"I'm the boss's envy extraordinary," said Overland, by way of greeting. "Wait said

something else, too, about bein' a potent-

tiary, but I reckon that was a joke." Glad to see you again!"

But Overland was in the road, hat in hand, and Yuma's bridle-reins over one arm.

"Mornin', Billy! 'Mornin', Doctor! You run right up to the house. I left the gate open."

Then Overland rode back, following them. Later he reappeared, minus spurs and chaps, but still clad in the garb of the range-keeper. He was as proud and happy as a boy. He seemed to have dropped ten years from his shoulders. And he was strangely unlike his boisterous self withal.

The noon sun crept through the moon-vine. Out on the wide veranda was the long table. They were a happy group at luncheon there. Even the taciturn Brand Williams had been persuaded to come. His native picturesqueness was rather effaced by a black, characterless suit of "store clothes."

Walter Stone, at the conclusion of the luncheon, asked Overland to make a speech. Nothing daunted, Overland rose briskly.

"I expect you're lookin' for me to fall off the roof of the cannery into the tomato-vat and make a large red splash. Not me. I got somethin' to say. Now the difference in droppin' an egg on the kitchen floor and breakin' it calm-like, in a saucer, ain't only the muck on the floor. You save the egg. Just recent I come nigh to losin' my whole basket. You all know who saved 'em. Not namin' any names, the same person, by jest bein' herself, and kind to everybody, put me wise to the fact that money and clothes ain't all that goes to make a man. And, at the same time, speakin' kind of orthodoxical, money and clothes has a whole lot to do with makin' a man. I just got hep to that idea recent."

"Speakin' of clothes leads me to remark that I got a new outfit up at the bunk-house. It's a automobile outfit. Billy says it's the correct thing. He helped me pick it out. Which leads Billy into this here thing, too. He said to break the news gentle, and not scare anybody to death and not get 'em to thinkin' that somebody was hurt or anything like that, so I'm breakin' it to you easy. Me and Billy is goin' away. We're goin' in the Guzzuh—'God save the muck,' as the pote says. We are the Overland Red Towerist and Observation Company, Unlimited. We are goin'—"

"Round the world and back again; Heel and toe in sun and rain!"

as another pote says. Only we ride. I ain't got nothin' to say about gettin' married, or happy days, or any of that ordinary kind of stuff. I want to drink the health of my friends. I got so many and such good ones that I dasset to incriminate any particular one; so I say, lookin' at your faces like roses and lilies and—faces, I say—"

"Here's to California, the darling of the West. A blessin' on those livin' here— And God help all the rest."

Overland sat down amid applause. He located his tobacco and papers, rolled a cigaret with one hand, and gazed across the hills. Glancing up, he saw Louise looking at him. He smiled. "I was settin' on a crazy bronc' holdin' his head up so he couldn't go to buckin'—outside a little old adobe down in Yuma, Arizona, then. Did you ever drift away like that, just from some little old trick to make you dream?"

At a nod from Aunt Eleanor they all rose.

Louise stepped from her end of the table to where Overland stood gazing out across the hills. She touched him lightly on the arm. He turned and looked at her unseeing. His eyes were filled with the dreams of his youth, dreams that had not come true . . . and yet . . . He gazed down into her face. His expression changed. His eyes grew misty with happiness. He realized how many friends he had and how loyal and excellent they were. And of all that he had gained his greatest treasure was his love for Louise—for Louise Lacharme, the little Rose Girl of his dreams. That love lay buried deep in his rugged heart. She would never know of it. No one should ever know—not even Collie.

Louise, in an ecstasy of affection and pity that she could not understand, suddenly flung her arms around Overland's neck and kissed him full on the lips.

More than he had ever dared to dream had come true.

THE END.

FARM AND HERD.

H. E. Huber of Meriden, Kansas, has announced February 23 for his annual Short-horn sale to be held on his farm near Meriden. At the head of this herd is the great breeding bull, Silk Goods, a ten-year-old bull by Choice Goods. All the cows either have calves by this great sire or are bred to him. Most of the heifers are sired by him. Six very promising young bulls will be sold in this sale sired by Silk Goods and are splendid prospects for herd bulls.

We have just received the catalog of the offering of big-type Poland China sows to be sold in the sale to be held by Clarence Dean of Weston, Missouri, the noted breeder of Mastodon Polands. The sale will be held February 28 at Dearborn, Missouri. Mr. Dean has catalogued fifty head of tried sows and spring gilts. The catalog shows a remarkable offering of daughters of the most

noted sires of the breed, including such boars as Long Jumbo, Chief Price Again 2d, A Wonder Price by A Wonder, Big Bone Model by the champion Long Big Bone, and Smooth Black Bone by Smooth Big Bone. They are bred to Dean's Big Timm by Big Timm.

Catalogs are out announcing the Poland China bred sow sale of A. J. Erhart & Son at Hutchinson, Kansas, on February 22. Erhart & Son own a large farm near Ness City, Kansas, but the sale will be held at the state fair grounds at Hutchinson. This arrangement will afford prospective buyers more conveniences for shipping and attending the sale. The offering promises to be one of the very best that will go through a public auction this year and is a part of the 1916 show herd.

LANGFORD'S SPOTTED POLANDS
Boars—Serviceable age, guaranteed to please. Breeding stock, both sexes.
T. T. LANGFORD & SONS, Jamesport, Mo.

OLD ORIGINAL SPOTTED POLANDS
Stock of all ages, sired by seven of the very best boars of the East and West. Priced right. Write your wants to the
CEDAR ROW STOCK FARM
A. S. Alexander, Prop. Burlington, Kansas

ARKELL'S BIG POLANDS
April and March bred gilts by Longfellow Again and Chief Big Bone, weight 225 to 275 pounds. They are bred to Arkell's Big Timm. Also a few bred sows. Priced right.
JAS. ARKELL, JUNCTION CITY, KANSAS

OTTO PLAGMANN, EUREKA, MISSOURI

Size and Quality Polands
Five big-type gilts, weight 275 pounds each, bred for February, March and April farrow. \$35 each. Two good tried sows, priced to sell. Choice lot of summer sow pigs, weight 150 pounds and over, \$18 each or two for \$35. Fall pigs, \$15 each, two for \$25, sired by 1,000-pound boars, out of extra large sows.

WALTER B. BROWN, PERRY, KANSAS.

BIG-BONED IMMUNE POLANDS
Both sexes, July and August farrow. Best big-type breeding. Choice individuals. Also bred gilts. All sired by that great boar, Chief Miami. Dams 600 to 700 pounds. Remember this is the home of largest boned boar of the breed.

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OTTO PLAGMANN, EUREKA, MISSOURI

WALTER B. BROWN, PERRY, KANSAS.

HOLSTEIN CATTLE.

HOLSTEIN CATTLE.

MAURER'S HOLSTEIN FARM

Is offering a bull calf, born December 3, 1916, by 24.93-pound three-year-old niece of the new world's champion 50-pound cow, and sired by a great son of the \$25,000 bull, Rag Apple Korndyke 8th. Also pure-bred cows and heifers of choicest breeding. We keep a select lot of high-grade cows and heifers on hand at all times. Write your wants in good Holsteins to

T. R. MAURER & CO., West Sixth Ave., EMPORIA, KANSAS

CLYDE GIROD, At the Farm

HOLSTEIN-FRIESIAN FARM, TOWANDA, KANSAS

Breeders of pure-bred Holsteins. Special attractions in choice young bulls ready for service, with fashionable breeding. Write for pedigrees and prices. We maintain a breeding herd of pure-bred females and offer a grand lot of young springing heifers and cows, a number with A. R. O. records at prices within reason.

IT WILL PAY YOU TO SEE OUR OFFERING
Of choice extra high grade young cows and heifers, all springers in calf to pure-bred sires; large developed females, good udders, well marked and the right dairy type at prices that will challenge comparison for Holsteins of their breeding and quality. A visit to our farm will convince you. Keep us in mind before purchasing. Wire, write or phone.

GIROD & ROBISON

Braeburn Holsteins A. R. O. BULL
H. B. Cowles, 608 Kansas Av., Topeka, Kan.

HORSES AND MULES.

Jacks, Jennets, Percherons

Two coming 6-year-old herd jacks, 9½ and 10-inch bone, 1,100 and 1,200 pounds. Two coming 4-year-old jacks. Eight jennets, most of them in foal. Two coming 3-year-old Percheron stallions. Write for prices and description.

W. S. DEARDOFF - HALE, MISSOURI

POLAND CHINAS

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 & SON - GREEN CITY, MO.

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

Henry's Big-Type Polands

Fall pigs, either sex, sired by Mammoth Orange. Special price of \$15 each to make room for spring litters.

JOHN D. HENRY, LECOMPTON, KANSAS

TOWNVIEW FARM
Big-Type Poland Chinas.

For Sale—25 summer and fall gilts, sired by Miller's Sioux Chief and out of Lady Longfellow. Bred for late spring litters. Also 25 summer boars. Come and see my herd.

C. E. GREENE - PEABODY, KANSAS

BIG-BONED IMMUNE POLANDS

Both sexes, July and August farrow. Best big-type breeding. Choice individuals. Also bred gilts. All sired by that great boar, Chief Miami. Dams 600 to 700 pounds. Remember this is the home of largest boned boar of the breed.

WALTER B. BROWN, PERRY, KANSAS.

Size and Quality Polands

Five big-type gilts, weight 275 pounds each, bred for February, March and April farrow. \$35 each. Two good tried sows, priced to sell. Choice lot of summer sow pigs, weight 150 pounds and over, \$18 each or two for \$35. Fall pigs, \$15 each, two for \$25, sired by 1,000-pound boars, out of extra large sows.

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April and March bred gilts by Longfellow Again and Chief Big Bone, weight 225 to 275 pounds. They are bred to Arkell's Big Timm. Also a few bred sows. Priced right.

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

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OTTO PLAGMANN, EUREKA, MISSOURI

Bonnie View Stock Farm

Duroc Jerseys and Holsteins

PUBLIC SALE FEBRUARY 19.

20 Holsteins and 15 bred sows. Write for sale bill.

Searle & Cottle, Berryton, Kansas

HOLSTEIN CATTLE

We offer for sale 200 choice, high grade Holstein cows, heifers and service bulls of various ages; well marked and in good condition. Also can furnish a few choice, beautifully marked, 15/16ths pure-bred heifer or male calves, 1 to 2 weeks old, out of heavy milk-producing dams, at \$15 each, crated f. o. b. cars. First draft taken, them. Write

W. C. KENYON & SONS, ELGIN, ILLINOIS

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 & 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 Butler Boy 9426. These calves are all nicely marked and from good milkers.

KENTUCKY JACKS AT PRIVATE SALE



E. P. Maggard, formerly with the firm of Saunders & Maggard, Poplar Plains, Ky., has shipped twenty-three head of jacks to Newton, Kansas, and they will be for sale privately at Welsh's Transfer Barn. This is a well bred load of jacks, including imported jacks, and they range in age from coming three to matured aged jacks; height from 14 to 16 hands. I will make prices reasonable, as I want to close them out in the next thirty days. Anyone wanting a good jack will do well to call and see them. Barn two blocks from Santa Fe Depot, one block from Interurban. Come and see me.

E. P. MAGGARD, Newton, Kan.



Hereford Breeders Combination Sale At Great Bend Kansas Friday, March 9, 1917

Eighty head of choice Herefords from the well known herds of
W. I. Bowman & Co., Ness City, Kansas
H. D. Plummer, Longton, Kansas
Samuel Drybread, Elk City, Kansas
W. C. Stanley, Great Bend, Kansas
R. Taylor & Son, Great Bend, Kansas
Moses Bros. & Clayton, Great Bend, Kansas

There will be forty head of exceptionally good young cows and heifers, all bred to good bulls. Forty head of bulls of serviceable age, including herd headers, farm and range bulls. For catalog address

Thos. Clayton, Mgr.

Great Bend, Kansas

HORSES AND MULES.



German Coach Stallions and Mares THE FARMER'S GENERAL PURPOSE HORSE

Twenty-three stallions from weanlings to 5-year-olds. Handsome, stylish, gentle, but powerful young stallions, 1,300 to 1,600-pound fellows, the right kind to produce durable, active farm horses and command attention in any stud. Priced where you will buy. Satisfaction guaranteed. Come or write at once.

BERGNER BROS.,

ROUTE 4, PRATT, KANSAS
Waldock Lake Ranch

MARES AND FILLIES ABOUT ALL SOLD

A few good ones left. Fifty head of stallions and mares. Thirty head of stallions, including Percherons, Belgians and Coach stallions, 2 to 6 years old. All for sale at hard times prices. Come and see me.
J. M. NOLAN - PAOLA, KANSAS

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

HORSES AND MULES.

40 Head Percheron Stallions - Jacks and Jennets - 40

Two to six years old, heavy bone, right in every way. Imported Spanish jack, weight 1,200 pounds, at head of jennet herd. Come and see us. We mean business. Prices reasonable.

J. P. & M. H. MALONE

CHASE - KANSAS

The Kansas National Live Stock Show and Sale and The Annual Convention of the Kansas Live Stock Ass'n

SIX DAYS OF PURE-BRED LIVE STOCK SALES AT WICHITA, WEEK OF FEBRUARY 26

Monday, February 26, at 9 a. m.—Sixty Poland China and Duroc Bred Sows and Gilts consigned from the best herds in the Central West, including ten famous show animals from the herd of Crow & Sons, Hutchinson, Kansas.

Tuesday, February 27, at 9 a. m.—Sixty head of selected Herefords. The champion Hereford bull of America will be on exhibition.

Wednesday, February 28, at 9 a. m.—Sixty selected Shorthorns, including pure Scotch and Scotch-tops consigned by Theo. Martin, Bellevue, Iowa; Park E. Salter, Augusta, Kansas; Homan & Son and F. P. Wilson, Peabody, Kansas; John Regier, Whitewater, Kansas; James Baxter & Son, Clay Center, Kansas, and others.

Thursday, March 1, at 9 a. m.—Sixty high-class Percherons consigned by W. S. Corsa, Whitehall, Illinois; J. C. Robison and Bishop Bros., Towanda, Kansas; W. R. Neal, Caldwell, Kansas; Ira Rusk, Wellington, Kansas; J. O. Cedarholm, Lindsborg; J. H. Armstrong, Emporia, and others. Sale includes Isola, three times grand champion at state fairs, and mares bred to him. Also stallions and mares sired by the famous champions, Carnot and Casino. J. C. Robison writes that he will sell ten of the best mares he ever sold in one sale. Enough said.

Friday, March 2, at 9 a. m.—Coach Horses, Trotting Bred Horses and Jacks. Sale includes stallions, mares, racing prospects and developed race horses, French and German Coach, some extra good 16-hand jacks weighing 1,200 pounds.

Saturday, March 3, at 9 a. m.—Sale of Sixty Dairy Cattle.

We positively guarantee the Kansas National Live Stock Show will be the largest event of the kind ever held in Kansas. The best Shorthorns, Herefords, Percherons, Poland Chinas, and Durocs in America will be here. Write at once for premium list and entry blank to show and sale. Sale catalog mailed free February 20.

The Kansas National Live Stock Show Ass'n

By F. S. Kirk, General Manager

Room 27

Live Stock Exchange

20 Head - JACKS & JENNETS 20 Head AT McCUNE, KAN., THURSDAY, FEB. 22



12 HEAD OF JACKS

From two years to aged jacks; 14 to 15½ hands high. Black with white points. Good bone, body, head and ears. These jacks are my own raising. Sired by Bradley's Sunlight and Kentucky Yelberton, both big Kentucky jacks. Kentucky Yelberton's dam took fourth premium at the St. Louis world's fair in a bunch of thirty and his sire took first premium at the Lexington, Kentucky, state fair for the best jack, and first premium for best jack with three colts, and his grand sire sired the champion yearling jack at the St. Louis world's fair.

8 HEAD OF JENNETS

Eight head of jennets from yearlings up to aged jennets. Aged jennets from 14 to 15 hands. Black with white points.

Will sell two driving mares and two good ponies. Will offer for sale one registered Percheron mare coming four years old; registered Percheron stud colt coming two years old, an extra good one.

TERMS: Cash or 12 months' time on bankable notes drawing 6% interest from date.

G. W. OVERLEY, McCUNE, KANS.

PRAIRIE VIEW STOCK FARM

Has 40 big, black Mammoth Jacks and jennets. Every jack my own raising; two to six years old, 15 to 16 hands high, extra heavy bone, big bodies. I can sell you a better jack for \$500 to \$600 than most speculators can for a thousand. Come and see for yourself. They must sell.
ED BOEN, LAWSON, MO.
 35 Mi. E. of K. C. on C. & M. & St. P.
 40 Mi. S. W. of St. Joe, on Santa Fe

PERCHERONS—BELGIANS
 Imported and home-grown 4 and 5 yr. old stallions, ton and heavier, 3 yr. olds, 2 yr. olds, yearlings. Produce of 62 imported mares and noted prize winning imported sires. Farmers' prices. Fred Chandler, R. 7, Chariton, Iowa. (Above Kansas City.)

FOUR BIG JACKS FOR SALE

Also three jennets. Jacks are all blacks, 4 and 5 years old, 15½ to 16½ hands standard. All grandsons of Limestone Mammoth. Barns 3 blocks north of depot.
F. W. POOS - POTTER, KANSAS

REGISTERED PERCHERON STALLIONS for sale at their actual cash value. Barn in town.
A. H. SEYMOUR, GREAT BEND, KANSAS

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

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.
LAFE BURGER, WELLINGTON, KANSAS

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

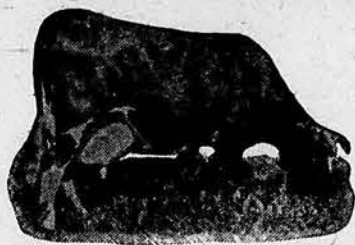
LESTER R. HAMILTON Live Stock Auctioneer. Write for terms and date. Clarksdale, Mo.

FIFTH ANNUAL BRED SOW SALE

THE KANSAS STATE AGRICULTURAL COLLEGE will sell Poland Chinas and Duroc Jerseys, Friday, February 16, Manhattan, Kansas.
WRITE FOR CATALOG.

GUERNSEY CATTLE.

GUERNSEY CATTLE.



\$81.86 PROFIT PER COW PER YEAR
over a period of 7 YEARS is the average of
A GRADE GUERNSEY HERD
IN WISCONSIN

IT WAS THE GUERNSEY BULL THAT DID IT

Write for our free booklet about GUERNSEYS!
THE AMERICAN GUERNSEY CATTLE CLUB
BOX R. K. PETERBORO, N. H.

REGISTERED GUERNSEY BULL CALVES FOR SALE
Grandsons of Imp. Masher's Sequel A. R. out of first class cows. Tuberculin tested.
R. C. KRUEGER - BURLINGTON, KANSAS

HEREFORD CATTLE.

HEREFORD CATTLE.

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



HEREFORD CATTLE FOR SALE
35 BULLS, 10 MONTHS TO 2 YEARS OLD.
20 COWS AND HEIFERS.
Best breeding families. Bred to an Imported British bull. Come and see me. Sale barns right in town.
T. I. WOODDALL, HOWARD, KANSAS

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

150 Head in Herd. A few cows and heifers for sale. Also a lot of farm and range bulls. Priced reasonable.
B. M. BROWN, FALL RIVER, KANSAS

JERSEY CATTLE.

JERSEY CATTLE.



SEVENTY HEAD REGISTERED JERSEYS

Nothing over five years old. Richly bred Fox Signal and Fern Lad families. All bred to choice registered herd bull. Must reduce herd.
N. L. DUCHESNE - GREAT BEND, KANSAS

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, Pops 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.

HAMPSHIRE HOGS

ATTEBERRY'S HAMPSHIRE HOGS
Choice July boars, best breeding, \$12.50 each. They are bargains.
ATTEBERRY & SONS, Lancaster, Missouri

RED POLLED CATTLE.

Red Polled Cattle

A few 1916 fall bull calves for sale. Also a few cows and heifers.
AULD BROS. - FRANKFORT, KANSAS

RED POLLED BULLS

Forty yearling bulls, big rugged fellows, sired by ton sires; all registered and priced reasonably. Will sell a few females.
E. E. FRIZELL, Frizell, Pawnee Co., Kansas

FARM AND HERD NEWS NOTES

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W. J. Cody, Manager Stock Advertising.
O. W. Devine, Representative

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CLAIM SALE DATES.

Combination Sale.
Feb. 26 to March 3—F. S. Kirk, Manager, Wichita, Kansas.

Jacks and Jennets.
Feb. 22—G. W. Overley, McCune, Kansas.
Feb. 22, 1917—W. H. Roller & Son, Circleville, Kan., and Bruce Saunders, Holton, Kansas.
March 13—H. T. Hineman & Sons, Dighton, Kansas.
March 15—L. M. Monsees & Sons, Smithton, Mo. Sale at State Fair Grounds, Sedalia, Missouri.
March 19—G. C. Roan, La Plata, Mo.

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

Holsteins.
Feb. 21—Dwight Williams, Omaha, Neb.

Shorthorn Cattle.
Feb. 23—H. B. Huber, Meriden, Kansas.
March 7—Andrew J. Howitt & Son, King City, Mo.
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.
Feb. 26—Combination sale at Hays, Kan. Prof. W. A. Cochel, Manhattan, Mo.
March 3—W. A. Cochel, Manhattan, Kansas.
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. 20—Fred B. Caldwell, Howard, Kan.
Feb. 22—A. J. Erhart & Son, Ness City, Kan. Sale at Hutchinson, Kan.
Feb. 23—F. Olivier & Sons, Danville, Kan.
Feb. 28—Clarence Dean, Weston, Mo. Sale at Dearborn, Mo.

Durocs and Polands.
April 25—Fred G. Laptad, Lawrence, Kan.

Polands and Durocs.
Feb. 16—Kansas State Agricultural College, Manhattan, Kansas.

Durocs.
March 6—Richard Rothgeb, Pleasant Green, Mo.
March 15—W. T. McBride, Parker, Kan.

O. I. C. Hogs.
March 8—F. J. Scherman, Topeka, Kansas.

Hampshire Hogs.
March 1—Missouri Hampshire Breeders' Association, C. I. Ward, Cameron, Mo., Mgr. Sale at St. Joseph, Mo.

Harry Forbes of Topeka, owner of one of the good herds of Shorthorn cattle in Kansas, reports a heavy demand for Shorthorn bulls. During the last months he sold eight head and at this time has only three left that are old enough for service. The demand is such that a number of prospective buyers have asked for prices on fall calves.

Andrew J. Howitt & Sons of King City, Missouri, announce March 7 as the date of their annual Shorthorn sale. This firm owns one of Missouri's good Shorthorn herds and will catalog a good offering for this sale.

George McAdam of Holton, Kansas, the well known breeder of Aberdeen Angus cattle and Berkshire hogs, reports a good demand for both cattle and hogs. He has sold out of bred gilts and recently delivered twelve head of choice Angus cows and heifers to J. H. Holt, manager of the Breezy K Ranch, Quinlan, Okla., at very satisfactory prices.

The Missouri Hampshire Breeders' Association will hold a sale of Hampshire hogs at St. Joseph, Missouri, March 1. This sale will be under the management of C. I. Ward of Cameron, Missouri, and a choice offering from Missouri's good herds will be catalogued.

W. S. Deardoff of Hale, Missouri, one of the leading breeders of Percheron horses and Mammoth jacks in that state, reports his herds doing well. A feature of the herds at this time is the choice lot of jacks and young stallions of serviceable age.

We have just received the catalog of the bred sow offering of H. B. Walter, to be sold at Effingham, Kansas. The catalog is nicely illustrated and a large percentage of the sows catalogued were sired by Mr. Walter's great boar, Big Bob Wonder, noted throughout the corn belt as the sire of prize winners.

F. J. Scherman, Route 8, Topeka, has announced a public sale of twenty head of Jersey cattle and forty head of O. I. C. hogs for March 8, 1917. The sale will be held at the Topeka State Fair grounds.

P. M. Anderson of Lathrop, Mo., held one of the most successful Poland China sales on February 1 in the history of his herd. Forty sows and gilts averaged \$68.12. Mr. F. L. Corwell, formerly of Topeka but now on his farm near Kansas City, Mo., topped the sale on No. 5 at \$130. Walter B. Brown of Perry, Kansas, bought five head and was one of the strongest bidders. About one-third of the offering came to Kansas breeders at good prices. The average of the sale was very satisfactory to Mr. Anderson. Had the weather been favorable a much higher average would have been made. The extreme cold and high wind kept many prospective purchasers from attending the sale.

Real Estate For Sale

280-ACRE FARM located 3 miles good town, Franklin County, in proven oil field; fair improvements, 30 acres tame grass, 140 acres native meadow and pasture, remainder in cultivation; good orchard, well watered. A big bargain for immediate sale at \$50 per acre. Possession at once. Write for full description of this or any size farm you may want. Mansfield Land Co., Ottawa, Kansas.

160 ACRES, 6 miles Adrian, Mo. All smooth land, 25 acres in wheat, 40 acres in tame hay, remainder cultivation; 95 acres fenced hog-tight; fair improvements. Price right, easy terms for immediate sale. MANSFIELD LAND CO., Ottawa, Kansas.

32 ACRES, 2 1/4 miles business center McAlester, city 15,000; 1/4 mile \$30,000 ward school, 25 acres strictly first class dry bottom land, 12 acres cultivated. \$55 per acre, terms. Southern Realty Co., McAlester, Ok.

LANE COUNTY BARGAINS

Best tract of land for a colony in state. Comes in half mile of station. Some well improved from \$10 to \$25 an acre. Get my list of bargains. C. N. Owen, Dighton, Kan.

SHORTHORN CATTLE.

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 & Sons

SKIDMORE - MISSOURI

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.

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

CEDAR HEIGHTS SHORTHORNS

For Sale—One Lavender bull, 14 months old; one Orange Blossom, 10 months old; one Golden Drop, 10 months old.

HARRY T. FORBES, Topeka, Kansas

Lowmont Shorthorns—Bulls, including white 2-yr.-old; 18 cows and heifers; priced right. E. E. Heacock & Son, Hartford, Kansas.

Breeders' Directory

ANGUS CATTLE.
Geo. M. McAdam, Holton, Kan.
Geo. A. Detrich, Carbondale, Kan.
D. J. White, Clements, Kan.
RED POLLED CATTLE.
Mahlon Groenmiller, Pomona, Kansas.
DORSET-HORN SHEEP.
H. C. LaTourette, Route 2, Oberlin, Kan.
JERSEY CATTLE.
J. B. Porter & Son, Mayetta, Kan.

Catalogs are out for the Hereford Breeders' Combination Sale to be held at Great Bend, Kansas. Forty head of choice young cows and heifers all bred to good bulls, and forty head of serviceable bulls all of serviceable age have been catalogued for this sale. The consignments are from the best herds in the state. The following well known breeders will be represented: W. I. Bowman & Co., Ness City, Kansas; H. D. Plummer, Longton, Kansas; Samuel Drybread, Elk City, Kansas; and W. C. Stanley, R. Taylor & Sons, and Moses Bros. & Clayton of Great Bend, Kansas.

Searle & Cottle of Berryton, Kansas, have announced February 19 as a closing out sale of thirty-five head of Holstein cattle and Duroc Jersey hogs. The herd bull, Trojan Tritona, and several registered cows will sell, also a few high grade cows, five registered Duroc Jersey brood sows and ten registered Duroc gilts, all bred for spring litters. The brood sows are sired by Tat-a-wolla and bred to A Critic. The ten gilts are sired by A Critic and bred to Crimson Model 2d.

Bergner Bros. of Pratt, Kansas, are among the successful breeders of pure-bred German Coach horses. Their herd was established on their 2,500-acre ranch in 1907 and they now have eighty head of registered German Hanoverian and Oldenburg Coach stallions, mares and fillies. They have a number of mares in their herd sired by The Moltke 13, grand champion at the Chicago World's Fair, also a lot sired by Mephistopheles 4221, a prize winner at the state fairs for years. They now have at the head of their herd Milon 3159, premier champion coach horse at the St. Louis fair. They have the ideal type coach horse and the greater part of the work on their big ranch is done with their coach brood mares and they have found the German Coach a splendid farm and general purpose horse.

J. W. Cox & Son of Arapahoe, Neb., owners of Riverside Farm Herd of Mulefoot hogs, report their herd doing well. This is one of the noted as well as one of the largest herds of that breed of hogs in existence. Their show herd is noted as consistent winners and for several years have been awarded a large percentage of the championships and first and second premiums at Iowa and Nebraska State Fairs. A feature of their herd at this time is the choice lot of young stock of breeding age.

These two champion jacks are representative of the high standard of the forty jacks and jennets that go in this sale to the highest bidder, regardless of price.
Plan to attend this sale, and write for illustrated catalog at once.
Mr. Saunders is closing out his entire herd and Mr. Roller & Son are selling very close.

DEACON JR.



BIG COMBINATION JACK SALE

FORTY HEAD

Twenty-five Jacks and Fifteen Jennets. All black with white points and all registered.

Holton, Jackson County, Kansas
Thursday, February 22

The show herds of M. H. Roller & Son, including John L. Jr., champion State Fair, Topeka, 1914-15, and the show herd of Bruce Saunders, including Deacon Jr., champion State Fair, Topeka, 1916.

CATALOGUES READY TO MAIL.

ADDRESS EITHER

BRUCE SAUNDERS, - Holton, Kansas

OR

M. H. ROLLER & SON, Circleville, Kansas

AUCTIONEERS

R. L. HARRIMAN - C. POOL - V. E. ADDY

Included in the sale are two Percheron stallions, two and three years old, sired by Inceus, champion of the leading shows in 1911.
Sale in big sale pavilion in town. Good railroad facilities. Ask your railroad agent. Good hotel accommodations.

JOHN L. JR.



DEAN'S MASTODON POLAND CHINA BRED SOW SALE

At Dearborn, Missouri, February 28, 1917

FIFTY HEAD TRIED SOWS AND SPRING GILTS, ALL IMMUNE BY DOUBLE TREATMENT.

Eleven tried sows by famous big-type boars, among them Lady Price, a great sow by Chief Price Again 2d. She is bred to Big Bone Model, a son of the champion Long Big Bone. Three tried sows by Halford's 1,006-pound Long Jumbo, bred to my great herd boars. There will be six extra fine gilts sired by Smooth Black Bone by Smooth Big Bone and out of a Big Bob dam and bred to Dean's Big Timm, a good son of Big Timm, the 1,125-pound Nebraska champion. Three good gilts by Smooth Black Bone out of the great sow, Lady Wonder 7th, by Mastodon Price. These gilts are bred to Dean's Big Timm. This entire offering is sired by noted big-type sires and it will be one of the best big-type offerings sold this year. Sale at Dearborn in sale pavilion.

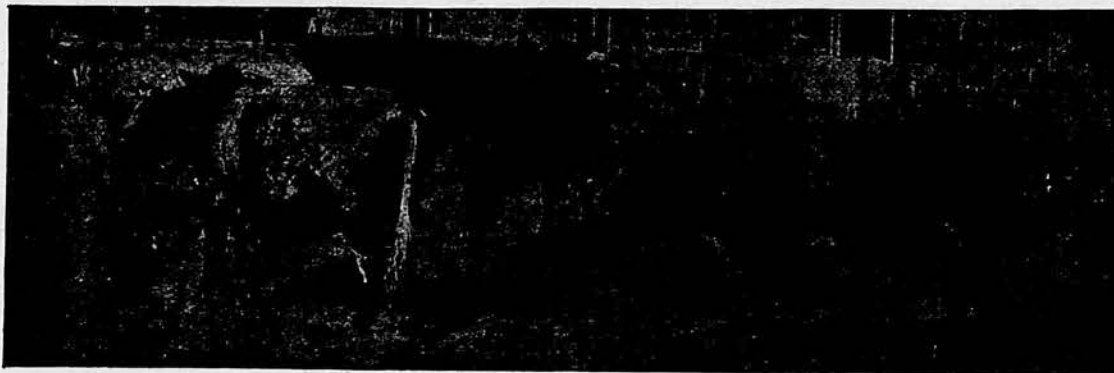
Send at once for catalog. Address

CLARENCE DEAN, - WESTON, MO.

O. W. Devine representing Kansas Farmer.

Shorthorn Cattle Sale, on Friday Feb. 23

At My Farm Six Miles from Meriden, Kansas, on the Santa Fe Ry.; Seven Miles from Grantville, on U. P. Ry.



registered and tested. I will also sell twenty large Duroc sows bred for early spring litters but not recorded. Send for catalog and come to my sale. All trains met at Meriden, Kansas.

Fifteen head of cows and heifers, several with calves at foot and bred again to my herd bull, Silk Goods by old Choice Goods.

Six young bulls by Silk Goods.

The cows are a valuable lot, including the great cow, New Year's Lady, with roan heifer calf at foot and bred again. Also Violet Goldenrod with red heifer calf at foot and bred again to Silk Goods.

Marion 2d sells with red bull calf at foot by Silk Goods and bred again. Carrie Melody—this valuable cow is due to drop calf soon by Silk Goods. Most of the heifers are sired by Silk Goods.

I am selling some of my best cattle to reduce my herd. They are right in every way and good foundation stock for any farmer or breeder to buy. They are reds and roans and in good condition. All are

H. E. HUBER, Owner, Meriden, Kansas

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

AYRSHIRE CATTLE.



MR. HUGH J. CHISHOLM maintains a prize herd of AYRSHIRES

at Strathglass, his beautiful farm in Westchester County, N. Y.—every animal a beauty and a profit-maker in the dairy. Mr. Chisholm discarded a very popular and widely advertised breed in favor of AYRSHIRES when he really investigated their merits. It will pay YOU to investigate this handsome, profitable breed.

AYRSHIRE BREEDERS' ASSOCIATION
C. M. Winslow, Sec'y 33 Park St., Brandon, Vt.

DUROC JERSEYS.

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.

ROSE HILL HERD DUROCS

For Sale.—Thirty spring gilts bred for March and April farrow; ten boars for service; a few fall pigs. All immune, eligible to record. Out of prolific sows and by boars of state fair prize blood. S. Y. THORNTON, Blackwater, Missouri, on Missouri Pacific Ry.

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MULEFOOT HOGS.

Buy Big-Type Mulefoot Hogs from America's champion herd. Low cash prices. Big catalog free. Jno. Dunlap, Williamsport, O.

Mulefoot Hogs. Choice bred sows and gilts, both sexes, all ages, for sale. Five families in herd. J. W. Cox & Son, Arapahoe, Neb.

ANGUS CATTLE

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. & S. F. Ry., 145 Miles West of Kansas City.

John Dunlap, of Williamsport, Ohio, owner of one of the great herds of purebred Mulefoot hogs, reports that the demand for Mulefoot breeding stock in 1916 was the heaviest of any year in the history of his herd. Mr. Dunlap has developed a hardy, big type, easy feeding Mulefoot hog that is proving a profitable feeder and market hog.

POLLED DURHAM CATTLE.

POLLED DURHAM BULLS

Choice bull calves out of Belle's Hero, he by Roan Hero. Reds and roans. Also a few heifers and cows bred to this same bull.

C. M. ALBRIGHT, OVERBROOK, KANSAS

DOUBLE STANDARD POLLED DURHAMS

Bulls for sale. "Forest Sultan" at head of herd. C. M. HOWARD, Hammond, Kansas.

GALLOWAY CATTLE.

GALLOWAY BULLS

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

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

If on the market for pure-bred stock, read KANSAS FARMER live stock advertisements. You will find what you want.

Poland China Bred Sow Sale



CALDWELL'S BIG BOB 76436—WORLD'S CHAMPION SENIOR YEARLING AND SENSATION OF 1916 SHOWS
Is the Topliner in the First Sale of the Southern Kansas Circuit at

Howard, Kansas, Tuesday, February 20, 1917

40 Head - 25 Sows and Gilts Bred to Him---15 Head of Gilts Sired by Him - 40 Head

Daughters of Caldwell's Big Bob are bred to EXPANSION BUD 82486, an outstanding spring prospect by Expansion Sure.

FRED B. CALDWELL, - HOWARD, KANSAS

EVERYTHING IMMUNE. — Watch for further announcements—Send for the catalog. Attend this sale if possible.
O. W. Devine will represent Kansas Farmer.

A. J. ERHART & SONS'

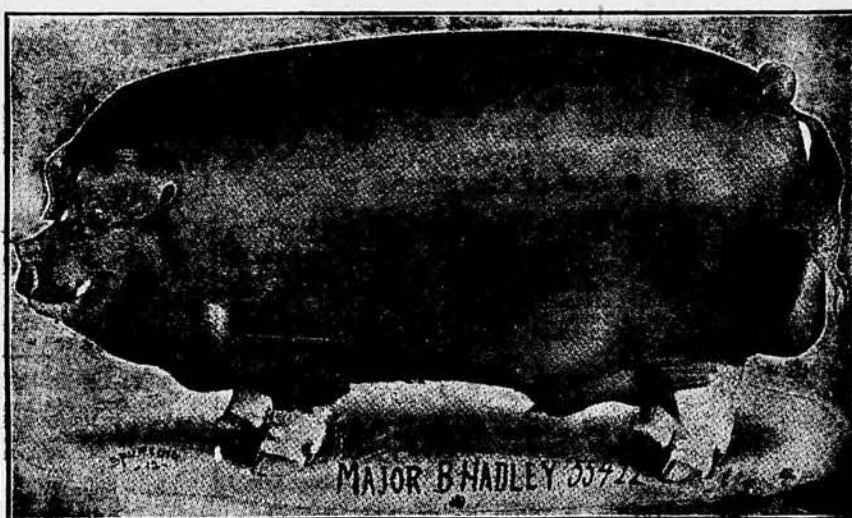
SUPERB OFFERING OF IMMUNE BRED SOWS AND GILTS

Featuring Big Hadley Jr., the Kansas Champion in 1915,
and King of All Hadley-Bred Boars

Sell in Sale Pavilion at State Fair Grounds

Hutchinson, Kan., Thurs., Feb. 22

**60 - Head of Tried Sows, Summer and Fall
Yearlings and Spring Gilts - 60**



This offering is sired by such boars as Big Hadley Jr., Orphan Big Gun, Jumbo Hadley, Missouri King by Long King, Giant Wonder by A. Wonder and Big Ben. They are an outstanding lot and have done exceptionally fine. We are going to be able to offer them in tip top condition. The dams of the offering are sired by Big Hadley Jr., Missouri King by Long King, Long King's Equal, Giant Wonder by A. Wonder.

AS SPECIAL ATTRACTIONS for this sale we are putting in Big Ben's Giantess that we bought at Pfander's Sale, Spring 1915, bred to Big Hadley Jr.; also a two-year-old sow by Orphan Big Gun and out of Hadley Lily 2d by King Hadley, Jumbo Wonder by Giant Wonder by A. Wonder and out of Lady Jumbo's Equal and Big Wonder 2d by Big Hadley and out of Jumbo Wonder.

We are putting in five Big Hadley gilts that we do not believe their equal will sell this year. Their dam was by Major B. Hadley. They are line-bred Hadleys. Model Hadley, Model Hadley 2d, Beauties Hadley 1st, 2d and 3d, are spring gilts. We are putting in Walnut Valley Lady 1st, 2d, 3d and 4th out of Walnut Valley Girl by Big Hadley Jr., and they are sired by the 900-pound yearling, Big Bob Jumbo. Two gilts, sisters to our under six months show herd last fall, which included the junior champion boar of Kansas and Oklahoma. These gilts are sired by Big Hadley Jr. and out of the 900-pound sow, Lady Jumbo's Equal. The entire offering is immune. For catalog write

A. J. ERHART & SONS, - - Ness City, Kansas

Auctioneers—Snyder, Price, Burger, Carpenter, Groff and Kramer.

O. W. Devine will represent Kansas Farmer.

\$2 Brings You This Big LIFE-TIME GUARANTEED NEW BUTTERFLY Cream Separator

On 30 Days' Trial At Our Risk

Then if pleased you can keep it and pay only a little each month out of your extra cream profits until the machine is paid for. In this way the separator itself will earn its own cost—and more before you pay. You won't feel the cost at all. If you do not need a large capacity machine you can obtain a smaller one on payments as low as

Only \$2 a Month
No Interest to Pay—No Extras

The prices we quote include everything. You have no extras to pay—no interest. You buy direct from the manufacturer and save nearly half. We give **30 days' trial** on your own farm. During this time if you don't find the New Butterfly the lightest running, easiest cleaning and best all around separator on the market (regardless of price), you don't need to keep it. Just send it back at our expense and we will refund what you paid, including all freight charges both ways.

Used on More Than 100,000 Farms

Over 100,000 New Butterfly Cream Separators are now in use. No doubt some of them right in your own neighborhood. We have been advertising in this paper for years—the publishers know us and know we do just as we agree. Read these letters from just a few of thousands of satisfied owners:



Seven Years Old—Runs Like New

"The Butterfly Separator we purchased of you about seven years ago is still doing fine work. I recently took it apart and cleaned the gears with coal oil. Now it runs like a new machine and works as well as ever."
H. S. Stonebraker,
Kokomo, Indiana.

Twelve-Year-Old Girl Runs It

"We would not do without our Butterfly Separator or exchange it for all the other machines we have seen. Our little girl, 12 years old, runs it like a clock!"
Mrs. P. E. Rude, Ashland, Wis.

Made \$61.39 More from Same Cows

"We made \$78.61 worth of butter before we had the machine and in the same length of time we made with the Butterfly Separator \$140.00 worth of butter from the same number of cows."
Thos. S. Kermosky,
Point Aux Pies, Mich.

Lighter Running and Easier to Clean

"We don't see how we got along without the New Butterfly as long as we did. It runs lighter, is easier washed and kept clean than the higher priced machines in this neighborhood."
R. E. Morrison,
Ollie, Mont.

Top of
Milk
Tank
Is
Only
38 in.
From
the
Floor

Skimming
Device
Made of
Aluminum
One-piece
Easily
Cleaned

**NEW BUTTERFLY
CREAM SEPARATORS**

are the only ones having the patented one-piece aluminum skimming device, very easy to clean. Light-running vertical shafts, frictionless pivot, ball-bearings bathed in oil; low-down, self-draining milk tank; closed drip-proof and dust-proof bottom. Simplest and most sanitary machine on the market. Send for Catalog Folder.

**Fill Out Coupon
and MAIL TODAY**

Why not get one of these big labor-saving, money-making machines while you have the opportunity to do so on this liberal self-earning plan? Let us send you our big new illustrated Catalog Folder showing all the machines we make and quoting lowest factory prices and easy payment terms. We will also mail you a book of letters from owners telling how the New Butterfly is helping them to make as high as \$100 a year extra profit from their cows. Sending coupon does not obligate you in any way. Write today.

ALBAUGH-DOVER CO.

Factories: 2181 Marshall Boulevard, CHICAGO, ILL.

Also Manufacturers of Albaugh-Dover "Square Turn" Farm Tractors—Write for Catalog

**ALBAUGH-DOVER CO.,
2181 Marshall Blvd., Chicago**

Gentlemen:—Without obligation on my part, please mail me your **free** Catalog Folder and full particulars regarding your special easy payment offer on the New Butterfly Cream Separator.

I keep.....cows.

Name

P. O.

State.....R.F.D.....