

KANSAS FARMER

For the improvement of the Farm and Home

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Established 1863. \$1 a Year

ON FARMS heavily stocked with cattle, where everything already raised finds mouths waiting and demanding still more, the owner will find corn, kafir, and the legumes his best crop allies.

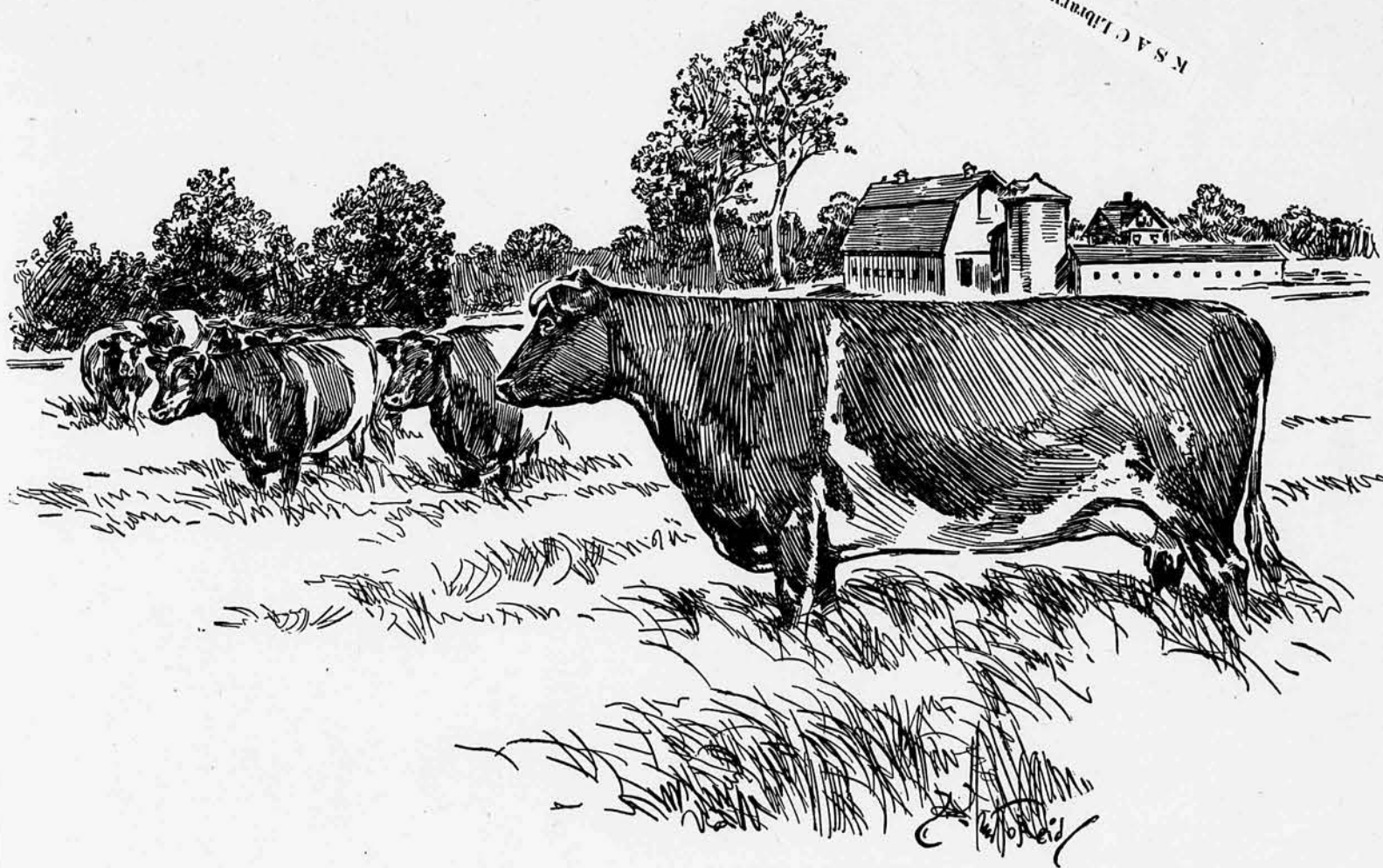
Heavily manured land will yield enormous crops of forage carrying much grain, and this utilized in part as dry fodder, but mostly as silage, will materially extend the feeding powers of the farm in roughage rich in carbohydrates.

Then let red clover, alfalfa, cowpeas, or other legumes be grown to furnish a protein-rich dry roughage.

By the use of silage, combined with other cheap, dry roughages, young cattle can be made to gain steadily all winter at small cost, so that with the coming of spring they will not only have increased in weight but will be in condition to go on pasture and make the largest possible gain.

By growing corn, kafir, or cane for silage, and the legumes for hay, the number of cattle which a farm can carry may often be doubled, to the great advantage of both land and owner.

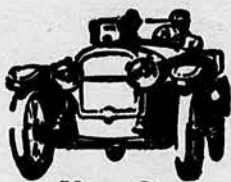
—W. A. Henry



Silage, Legumes, and Live Stock Balance the Farm

Protect Your New Car

About 900,000 cars will be bought this year. Thousands of those new cars will age through lack of proper attention. Between the new car and the prematurely old car there are three main differences:



New Car

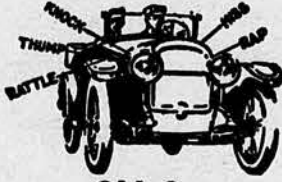
1. Silent motor.
2. Full power.
3. Infrequent repairs.

Let us look at the symptoms of premature old age:

(1) In a new motor, only one thing brings on noise. That is *abuse*. Too often noise is the motor's complaint against improper lubrication.

(2) The most serious causes of permanently weakened power are scored cylinders, worn bearings and piston rings. These troubles are brought on by incorrect lubrication.

(3) During the first year, engine repairs usually are infrequent — even with incorrect oil. But with incorrect lubrication the second year brings the reckoning. The results of wear now show up plainly. The worn motor never "comes back."



Old Car

1. Noisy motor
2. Weakened power.
3. Frequent repairs.

The one main factor in keeping your new car new is correct lubrication.

You selected a car that suits you. Now select the oil that suits your car. You will find the correct grade of Gargoyle Mobiloils for your car specified in the Chart of Recommendations, below.

For several years this Chart has been a standard guide to correct automobile lubrication. If your car is not listed in this partial Chart, a copy of our complete Lubrication Chart will be sent you on request.

In buying Gargoyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container. For information, kindly address any inquiry to our nearest office.



CORRECT AUTOMOBILE LUBRICATION

Explanation: The four grades of Gargoyle Mobiloils for gasoline motor lubrication, purified to remove free carbon, are:

Gargoyle Mobiloil "A"
Gargoyle Mobiloil "B"

Gargoyle Mobiloil "E"
Gargoyle Mobiloil "Arctic"

In the Chart below, the letter opposite the car indicates the grade of Gargoyle Mobiloil that should be used. For example, "A" means Gargoyle Mobiloil "A," "Arc" means Gargoyle Mobiloil "Arctic," etc. The recommendations cover all models of both pleasure and commercial vehicles unless otherwise noted.

MODEL OF	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900
CARS	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer
Abbott Detroit	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Apperson	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Auburn (4 cyl.)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Auburn (6 cyl.)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Autocar	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Avery	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Briggs	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Buick	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Cadillac	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Casa	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Chalmers	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Chandler Six	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Chevrolet	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Colt	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Cummins	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Detroit	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dodge	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Empire	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Federal	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Flat	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ford	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Franklin	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Grant	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Haynes	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Hudson	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Hupmobile	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
I. H. C. (4 cyl.)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
I. H. C. (6 cyl.)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Jackson	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Jeffery	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Johnson	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Kelly Springfield	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
King	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Lincoln	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Marmon	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Maxwell	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Mercer	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Mitche	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Moline	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
National	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Oakland	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Oldsmobile	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Overland	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Packard	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Pierce	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Pontiac	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Reo	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Saxon	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sears	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Stearns	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Studebaker	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Stutz	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Valley	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
White	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Willis	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Winton	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

YOUR TRACTOR

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

VACUUM OIL COMPANY, Rochester, N. Y., U.S.A.

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

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FARM POWER

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

NO part of the car is more closely connected with the safety of the occupants than the steering gear. Any rattling in these parts is a sure sign of looseness in connections and should be attended to at once. It tends to excessive wear of the parts affected. In the steering wheel there should not be over a quarter of a turn play. There must be some play, otherwise each little jar of the road would be felt by the driver. But this play has its limits and it is almost as hard to drive a machine with excessive play in the wheel as it is one set too close. Either is dangerous, for the utmost ease of control is essential.

Tractor Demonstration Plans

The plans for the tractor plowing demonstration to be held at Hutchinson July 24-28 are now well outlined. Forty-three of the leading tractor and plow manufacturing companies are entered.

Each afternoon from one to three will be devoted to public demonstrations, while the forenoon from 8:30 to 11:30 will be devoted to private demonstrations. These forenoon demonstrations will not be limited to plowing. Opportunities will be given for disking, seeding, packing, manure spreading, and operating all other kinds of machinery found on the average farm. This will make it possible for all interested in tractors to arrange their work so they can attend the big demonstrations one or more days, and see all classes of work performed. Furthermore, it will allow the prospective buyer ample time to select a machine that he feels best adapted to his local conditions.

The purposes of these tractor demonstrations is to better acquaint the farmer with the different farm tractors on the market today. The management will arrange all demonstrations such that all machines will be given a fair chance to show their practicability, and at the same time make it possible for the farmer and dealer to inspect these machines in order that they may get the one best adapted to their individual needs.

Harrowing With Tractor

There is one important question that must be fully settled in the farmer's mind before the tractor will be taken home and put to its waiting tasks, and that is—"Can I do my harrowing with it?" This question of tractor harrowing is not worrying farmers who have witnessed good tractors in the field with disk harrows, spring or peg-tooth harrows behind them. Nothing can be more assuring than to see one of these tractors pass up and down the field, leaving a mellow seed bed behind the harrow it is pulling.

Since the tractor furnishes ample power for deep plowing, this same power is equally usable for harrowing. Deep plowing is quite likely to turn up clods of "hard pan" that horses could not successfully reduce to a good seed bed without disking more than once or twice over. By using a tractor, harrow combinations can be made that are impossible with horses. For example, a light tractor can be attached to an 8-foot disk harrow with tandem attachment for double disking the full width, and two peg-tooth sections for smoothing. Weights can be put on the front disk harrow to get deeper penetration. The peg sections will hold the tandem attachment down. This combination will harrow the most stubborn soil and make of it a good seed bed by going once over. One big advantage in this combination is that the lumps while moist are easily broken up by the peg harrow. Another is that the tandem attachments cut along the middle of the furrows turned by the front harrow, pulverizing much better than by lapping half to double disk. The whole process of harrowing is thereby done at one time.

A great advantage in working the tractor with combinations like this is in the more simple method of hitching. With the outfit above described only two chains are needed. The chain hitching the disk harrows to the drawbar of the tractor should be a log chain, several feet long. It can be passed through the clevis on the disk harrow forecarriage and around the tractor drawbar hitching them about two feet apart. The shorter the hitch the closer the harrows will be drawn to fences and the more easily turned around. Care should be taken,

however, that the clevis on the forecarriage is not so high that the pull of the tractor lifts the harrow out of the ground. The second chain is needed for hitching the peg-tooth harrow to the tandem attachment. It can be passed through the drawbar link of the peg harrow and around the tandem attachment frame. The chain must be so attached that it cannot slip to one side of the harrow frame. The harrows must always be pulled in line or the disks of the tandem attachment may cut in the same furrows as disks of the front harrow or the teeth in the peg harrow may trail each other and the efficiency of the tools be lessened.—Tractor Farming.

Automobiles in Kansas

On May 1 there were 85,537 motor cars licensed in Kansas. This is sixty per cent more cars than are owned in the entire Dominion of Canada. France was listed as having a total of 98,400 cars the first of the year. Germany had 71,455 and England 276,690. Kansas had more cars licensed January 1 than was given as the total for all of Germany on that date and Kansas has purchased twelve thousand cars since the first of the year.

England and France are the only countries outside the United States which have as many motor cars as the people of Kansas own. A census of the motor cars of the world was recently received by Curtis Myer, motor car license clerk in the office of the secretary of state. It was compiled by one of the motor journals of the East and it is asserted that the list contains a complete census of the cars owned in the different countries December 31, 1915. Most of the countries have a license and tag system that enable accurate figures to be given out.

Of the states having license systems, Kansas stands at the top in the number of cars per capita. Kansas now has one car for every 18.6 persons residing in the state, or a car for every four families.

Some Automobile Rules

In driving the automobile don't speed. Don't run on the battery. Don't let the clutch in suddenly. Don't start the car with a jerk. Don't advance the spark too quickly. Don't run at a high speed in towns and cities.

Don't race the motor when shifting gears.

Don't violate the unwritten rules of the road.

Don't overwork the motor on hills—shift gears.

Don't abuse the brakes. Apply them gradually.

Don't shift into or out of reverse when car is moving.

Don't drive fast on wet pavements—the car is liable to skid.

Don't start on a trip without a full gasoline tank and plenty of oil.

Don't descend extremely steep grades before shifting into one of the lower gears.

Don't fail to keep the brakes adjusted.

Don't use dirty water in your radiator.

Don't turn corners too rapidly. It is hard on tires.

Don't twist the steering wheel when the car is standing still.

Don't use dirty gasoline. It is well to strain all the gasoline you put in the tank.

Don't run the car if you detect some unusual sound—investigate.

Don't forget to examine the car carefully after a hard run.

Don't get water into your carburetor or on the magneto gear when washing your car.

Don't use the brakes too much. Slow down the car by means of the clutch and throttle.

Don't let your steering rods connection loosen up to such an extent as to cause wobbling of the wheels.

A great many automobile owners run their cars with less air pressure in summer than in winter. The extreme variation in pressure caused by zero or very hot weather is not over ten or twelve pounds. This statement is absolutely correct, and is the result of experiments and tests which were carried on by the tire manufacturing companies.

Have you a system of waterworks on your farm? If not, why not?



KANSAS FARMER

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FEDERAL MONEY FOR ROADS.

The United States Senate has just passed the Bankhead bill which provides for the expenditure of seventy-five million dollars in the construction of post roads. A similar bill has been passed by the House, both being based on a draft prepared by the American Association of State Highway Officials. The bill as passed by the Senate provides for an appropriation of five million dollars the first year, and an increase of five million each year until it reaches twenty-five million, or a grand total of seventy-five million dollars.

The money is apportioned to the states on the basis of area, population, and the post road mileage. That is, one-third of the money will be divided among the states in proportion to their relative areas; one-third in proportion to their relative population; and one-third in proportion to their mileage of rural delivery routes and star routes. It is contingent on an equal expenditure by the states.

Kansas, as a state, is prevented from spending any money on internal improvements by constitutional restriction, but through the counties the provision of the Bankhead bill can be met. The money is to be expended in the several states on whatever roads the State Highway Department and Federal Secretary of Agriculture agree. The bill virtually authorizes the Secretary of Agriculture to co-operate with the states through their highway departments in the construction of rural post roads.

When we consider the importance of roads to the development of the country, the amount of money proposed in this legislation is infinitesimal, but it is a step in the right direction. During the discussion in the Senate it was brought out emphatically that the adoption of the proposed legislation meant a return of the national government to a form of internal improvement that had been discontinued since the building of the old Cumberland Road.

These bills now rest with the conferees of the House and Senate and an agreement seems assured. It would seem that this is the work of good statesmanship and not merely an effort to separate the government from its money in the aid of some local enterprise or to promote a doubtful undertaking. The enactment of such legislation should help to take public highways out of politics. The administration of the money will be in the hands of that department of the government nearest to the people. To make its provisions most beneficial it should have the hearty co-operation of the states.

PURE-BRED CATTLE TO ARGENTINA

Ranchers of Argentina are buying some of the best Hereford and Shorthorn cattle to be found in Kansas and Missouri. The cattlemen of that country are wide awake to the possibilities of beef production and are anxious to improve the quality of the stock used. Two men who operate jointly a seventy-thousand-acre ranch have just made extensive purchases of pure-bred animals. They report that there are twice as many pedigreed animals in Argentina as there were five years ago. With the improvement in quality brought about by the use of better-bred cattle, beef from this South American country will come in closer competition with that produced in the United States.

In South America very little grain is fed to cattle. The beef is finished with alfalfa, and on the export market comes directly in competition with beef made in this country that has had a lot of grain put into it. There is a lesson in this for our beef producers. We cannot afford to shovel the grain with lavish hand to animals we are finishing for beef. Grain is too high in price. More beef must be made from the grass, hay, silage, and fodder.

WHEAT HAS A RIVAL.

Wheat may be the main cash crop through Central Kansas, but kafir is worth considering as a cash crop even in the wheat belt. It is not possible or desirable to grow wheat year after year on the same land. Something must be grown as a rotation crop. Paul Martens, a farmer in Reno County, had a little

experience last year that opened his eyes to the possibilities of kafir growing. He had a field he did not wish to put to wheat, and so he let it go until spring and planted kafir. It yielded 800 bushels and he sold the crop for eighty-five cents a bushel. If the land had been in wheat it would scarcely have returned more than \$400 even at the high prices of 1915.

We have in mind another instance occurring in a Western Kansas county. On an 80-acre tract in feterita, cane and corn in 1914, the owner's fourth brought \$210, the crop selling at from eighty to ninety cents a hundred. The eighty acres were seeded to wheat in the fall, and in 1915 the owner's fourth from the sale of wheat was less than \$90.

The grain sorghums, if given a reasonable chance, will make good any year, and by combining them with wheat, farming becomes a much safer proposition.

BREED BETTER HORSES

The Kansas farmer could with profit be more careful in selecting his brood mares. Too often the horse buyer gets the good young mares while the diseased, inferior, and hereditarily unsound mares are retained for breeding purposes. The best sires in the world can make little improvement with such foundation to work upon.

The fact that \$2,000,000 is paid annually in Kansas by mare owners in service fees emphasizes the importance of deciding upon a definite and correct ideal to guide the breeder in his operations.

"Mixing types and breeds is a ruinous practice," says Dr. C. W. McCampbell, secretary of the live stock registry board. "We must learn to appreciate more fully the value of good, sound, pure-bred sires. Why have we sent more than \$1,500,000 to Europe annually for breeding horses? The principal reason is that the European horse breeder learned a long time ago to appreciate the value of good, sound, pure-bred sires for breeding purposes. In the horse breeding countries of Europe grade and scrub sires are a minus quantity. In Kansas only 55 per cent of the sires used are pure in breeding."

SELL THE ROOSTERS.

For several years we have been hearing about this season of the year of the advisability of disposing of all surplus roosters. This campaign against the rooster has its foundation in the fact that eggs must be of good keeping quality to bring top prices, and fertile eggs spoil quickly in hot weather. Dealers are beginning to buy eggs on a quality basis, and this means that farmers producing good eggs will be paid in proportion to the quality of their product.

Nothing is more detrimental to the keeping quality of eggs in summer than allowing roosters to run with the hens. The Federal Department of Agriculture candled 2,205 eggs from Kansas flocks having no males during June, July, and August, and found 63.8 per cent of them were first class eggs. Of 2,257 eggs from Kansas flocks having males in them during the same period, only 40.6 per cent were first class eggs. This difference was due entirely to the fact that in one case the eggs were infertile and in the other were fertile.

This year an organized effort is being made to keep these points in mind so that egg producers will dispense with their roosters as soon as the breeding season has passed. This will bring about a great saving to both the buyer and the farmer. To encourage this selling of roosters the co-operation of the dealers has been sought. Ross M. Sherwood of the extension division of the agricultural college, has sent out about 150 letters to egg and poultry buyers. Seventy replies have been received and fifty have agreed to pay a slight premium per pound for roosters for one week providing all of them are sold. This, of course, does not mean that roosters that are to be used the following year as breeders, must be marketed. They must, however, be kept away from the laying flock.

The week selected is May 22 to 27. This will be official "Rooster Week" in Kansas, and a good many dealers will

pay a premium for roosters sold at that time. Better take advantage of this chance to realize on the roosters and likewise bring about one of the conditions necessary to the production of good eggs in hot weather.

RETURNS FROM GRASS.

In our agricultural statistics we too often overlook the returns coming from the pastures and meadows. We discuss the wheat and corn prospects from the time the crops are planted until they are harvested and converted into money, but the general public seldom takes note of the immense value returned by the grass of the state. We have 400 million dollars invested in these grass lands. In some of the best grazing areas they are counting on putting 300 pounds of increase on steers this year during the pasture season. At least 150,000 cattle will be grazed in Kansas this year, and all this wealth of grass will be converted into beef and marketed on the hoof.

The wet season of 1915 was most favorable to the bringing back of the grass that had been so seriously injured by the dry years. The first report of the season from the State Board of Agriculture showed that the grass situation was especially favorable as the season opened. This was true not only in the regular grazing sections, but on the farms as well. According to this report, there are 1,300,000 acres of alfalfa in the state, all in splendid condition.

The live stock production should be exceptionally large this year. The state may break records in wheat growing, but we should never forget the immense revenue from cashing in our resources in grass and forage.

GOVERNMENT WHEAT REPORT.

According to the government crop report for May, there will be thirty-three million acres of wheat to harvest in the United States this year. This is over four million acres less than the area sown last fall, and over seven million acres less than the acreage harvested last year.

The general condition of wheat over the country has improved since the April report. Allowing for a normal deterioration between now and harvest time, the government forecasts a possible crop of 499 million bushels. The government guesses the Kansas crop at 111 million bushels based on May 1 conditions.

The Valecia Condensing Milk Company which started to promote milk condenseries in Hutchinson, Winfield, and Salina, Kansas, has been getting its just deserts. The proposition secured the attention of some very influential people in Kansas, but things began to happen before the promoters were able to gather in their profits. A recent press dispatch from Wisconsin states that after a year of investigation in the federal bankruptcy courts, criminal charges have been made against several of the officers of this company which sold some \$200,000 worth of stock in Kansas. It is always safe to look upon such promoters with some suspicion.

The Farm Bureau of Nemaha County has just employed John D. Lewis as County Agent. Mr. Lewis was formerly instructor in animal husbandry at the Kansas Agricultural College. He left this work a few years ago to take charge of a live stock demonstration farm in Louisiana for the Federal Department of Agriculture. Mr. Lewis is an exceptionally well qualified man for the work of county agricultural agent. He will take up his duties in Nemaha County June 1.

On every up-to-date farm tools and machinery represent a constantly increasing expense and investment. Stop a moment and figure up what investment you have in machinery and tools and what return you are getting from it. Properly cared for machinery should pay better than almost any other investment. If it does not, try to find out what is the trouble.

Quality and temperature variations in the calf's milk are conducive to digestive and intestinal disorders.

FARM LOANS IN CONGRESS.

Many of our readers will be interested in the provisions of the Hollis rural credit bill which recently passed the Senate. This bill, if it becomes a law, will provide for the establishment of twelve federal land banks in twelve districts. These banks will be under the supervision of a federal farm loan board of five members. Each must have a minimum capital of \$500,000, and a board of directors of nine members. The public may subscribe for this capital, the shares being \$5 each.

After the banks are established, farmers who wish to take advantage of their facilities, will form local loan associations. Each borrower will be required to take stock in the local association to the amount of at least one-twentieth of the loan he wishes. These associations will then invest the stock proceeds in the capital of the land banks. Farmers may form either limited or unlimited liability associations. The unlimited liability associations will be more attractive to investors and they will probably command a lower interest rate. These local associations must approve the loan sought by any of its members before it will be accepted by the parent bank.

When the federal land bank receives loans to the amount of \$50,000, it will be authorized to issue bonds to be sold to investors. If the bonds can be sold at four per cent the rate on the loans to farmers will be five per cent. This difference will provide for the expenses and earnings of the loan banks.

Rural credit measures designed to help farmers to a more liberal use of capital should be closely scrutinized by those who will be affected. We believe farmers generally are not in favor of anything savoring of government aid. All they ask is such provision as will make possible true co-operation in the matter of rural credits.

GOVERNMENT STALLIONS.

There is a provision in the general agricultural bill in Congress providing \$200,000 to be used in the purchase of stallions suitable for siring army horses. The stallions are to be loaned to horse-breeding communities.

Horses suitable for army purposes are very scarce in this country, and this idea of purchasing government sires is to increase the production of the desired type of horses. In Europe it has long been the practice to lend governmental encouragement in some form to horse breeding.

Buying some stallions and furnishing them free will not help very much to increase the production of this type of horses unless the government will pay enough for them so there will be a little profit in raising them. Saving in service fees will not encourage the growing of the kind of horses the government wants, when by growing the kind of horses demanded on the general market a high service fee can be paid and the colt still return a greater profit than the army horse. The present prices offered by the government are not remunerative, and authorizing the War Department to pay better prices would do a great deal more to encourage the breeding of army horses than will the buying of government stallions to be furnished free.

COUNTY BUYS ROAD MACHINERY.

Dickinson County has recently purchased \$7,300 worth of modern equipment for road building. It is evident that this county is not going to lag at the rear of the procession in the matter of good roads. This outfit consists of a combined tractor and truck, two dump wagons, a road planer, a grader, and a 4-ton cement roller. A portable building costing \$100 has been constructed to furnish eating and sleeping quarters for the workmen who have been employed to run this machinery.

The first job will be the careful grading of the Golden Belt road through the county. The other county roads will be dragged and graded at once so as to meet temporary requirements. Later permanent grades will be established and all poorly drained places will be graveled.

It looks as though this county has entered upon a new era in road construction.

DAIRY CLUB IN TRAINING

Leavenworth County Members of Kansas Farmer Dairy Club Visit Farms to Study Cows—Hear Lecture on Necessity for Producing Clean Milk

By
JANETTE LONG

WE WISH all the boys and girls of the Kansas Farmer Dairy Club might have been with us on a trip made to Leavenworth County last week. The occasion was the first meeting of the dairy club members of that county, called by the co-operating bankers.

Automobiles were provided for taking the party to two nearby dairy farms, that the club members might have opportunity to see in successful operation the business into which they have just launched.

The first farm visited was that of O. Giacomini. There, in a hillside pasture grazed his Holstein herd. And right here we want to register a compliment to the son who tends this herd. We feel sure this stock suffers no ill treatment at his hands for they showed no signs of fright at the approach of strangers. It was plain to be seen there were many pets among the young stock and they showed their friendliness by following us from place to place as we tramped about the pasture.

CLUB MEMBERS STUDY DAIRY FORM.

Here County Agricultural Agent Ross gave the club members a short talk on the points in the outward appearance of a dairy cow which are indications of good dairy breeding and milk producing capacity. While talking, Mr. Ross pointed out these characteristics in the pure-bred four-year-old Holstein cow, Ethel Scott—a fine specimen of the breed and one of which much is expected as she reaches maturity. She has just recently been added to the herd. Mr. Ross called attention to her triangular shape and explained the importance of the different parts of the body being so formed as to help make the triangle, stating that this cow did not just happen to have these characteristics but had been given them by a long line of ancestry bred and developed for dairy purposes. He called attention to the shapely head—the large, bright eyes with mild expression—the strong, wide jaw and broad muzzle so necessary in a good feeder—the moderately long, muscular neck and clean throat—the large heart girth—the strong back—the big barrel, without which large quantities of feed could not be handled—the angular hind quarters and the width between them—the size and shape of udder—the location of the teats—and the many other points which can be judged by looking at the cow. As each point was noted by Mr. Ross, he told why it was important.

He also emphasized the necessity for verifying outward appearance with production records and family history of production.

The modern dairy barn on this farm was next inspected and the boys were shown the use and value of the equipment—the concrete floor, steel stanchions, feed and litter carriers. A silo stands at each end of the barn and some silage was thrown into the feed carrier that it might be closely examined by the boys.

After a hurried look at the gasoline engine and the machines run by it, the party was taken to the farm of Paul B. Johnson.

BOYS JUDGE COW FOR THEMSELVES.

As the afternoon was fast passing, here only a few minutes could be devoted to looking over his dairy herd. Almost before the whole party had passed through the pasture gate, the dairy club members grouped themselves around one of the best cows and then and there began putting into practice what they had learned from County Agent Ross an hour before, regarding dairy conformation. It was plain to be seen they meant business and would lose no opportunity for gaining knowledge and putting it to good use in con-



COUNTY AGRICULTURAL AGENT ROSS GIVING KANSAS FARMER DAIRY CLUB MEMBERS OF LEAVENWORTH COUNTY A LESSON IN DAIRY CONFORMATION.—WITHIN A FEW MINUTES THE BOYS WERE APPLYING THE KNOWLEDGE HERE GAINED IN CRITICALLY EXAMINING ANOTHER COW

nection with their dairy club work. Fortunately, their victim measured up to standard and has the record to back her. She is the six-year-old pure-bred registered Holstein, Princess Skylark Wayne, has made two Advanced Registry records, the last being 536 pounds of milk in seven days.

Mr. Johnson also has a 340-dollar Holstein heifer which will be two years old in September, which, from the standpoint of dairy characteristics and ancestry, promises much.

IMPORTANCE OF CLEAN MILK SHOWN.

The short visit at this farm ended the tour of inspection and the party returned to Leavenworth to the Farm Bureau office, where County Agent Ross gave them an illustrated talk on dairying. The slides used had been loaned by the Federal Department of Agriculture, and while many of them showed equipment that it would be impossible for the young beginner to install, he told the boys they should know about the very best methods of carrying on their business and should come as near to these as the conditions under which they were working would permit.

He explained the meaning of bacteria, that there are two kinds—good and bad—and that all changes in flavor in milk are due to the action of these bacteria. He showed how the number of harmful bacteria could be greatly reduced by producing clean milk, and told of the practical things that could be done by the dairy club members to keep milk clean. One of these was the use of the covered pail, another the wiping of the cow's udder with a damp cloth before milking, and feeding after milking so that the dust and dirt with which the air is filled at feeding time, may not

enter the milk. He also threw on the screen several pictures of milk houses and explained that the sunning rack for cans built on the outside of the house is not as desirable as one inside reached by the sun's rays through the windows, for the reason that while the sun is doing its work on the outside there is nothing to check the accumulation of dust and dirt which has its effect in lowering the quality of the milk placed in the cans.

A brief, comprehensible study in feeds was given by means of charts showing the digestive nutrients of the feeds commonly used, and an explanation of the part these nutrients have in the making of milk.

Throughout the talk the club members were reminded of their responsibility in producing milk for human consumption, and were cautioned to do all in their power to put on the market a clean, safe product.

KANSAS FARMER's representative told the boys some of the things the club members in other parts of the state are doing and tried to show them it is not alone the prize which may be won at the end of the year that will be valuable to them, but that their experiences through the year and the things learned day by day as they work with their cows, will be the things that will count for the most and that will become more valuable to them as time passes.

At the close of the meeting several of the boys lingered to ask questions about their work. Through these questions was revealed their earnestness of purpose and ability to handle the club work. This, with the attitude of the co-operating bankers and the officers of the county farm bureau, means that the boys and girls of Leavenworth County

who do the work of the Kansas Farmer Dairy Club will get a training in the basic principles of good business which will be valuable to them all through life.

ONE BANKER'S INTEREST AND EXAMPLE.

We were much interested in hearing Mr. Otto Wulfekuhler—one of the co-operating bankers of Leavenworth County—tell about a set of books which he kept when he was only a small boy, and how he considered that his real start in business. He still has these books in his office, and these are shown the boys and girls when they come in to his bank to enlist his help in joining the dairy club. This is certain to be inspiring to these young folks, for they know Mr. Wulfekuhler's integrity and present standing among his fellowmen, and when they learn of the way in which he made his start it cannot help making them feel there is a good chance for making a success of life for all those who work earnestly toward this end.

As we sat in that meeting we could not help wishing all boys and girls might have the business training such as the work in our dairy club affords. No one can work with a dairy cow and make a study of her as he works, without becoming more systematic, and in addition a kindlier, more sympathetic disposition will be developed. Can there be two traits of character more to be desired than these?

DAIRY CLUB WORK GOOD FOR GIRLS.

We hope that by the time the Leavenworth County dairy club members have another meeting their number will include some girls. We know this work can be done as successfully by girls as by boys—for we have done it. Though we did not keep records of the feed given the cows and the milk produced, we did the actual work of milking and feeding the cows and found it interesting—so interesting, in fact, that now when we are on a farm at milking time we ask for the privilege of helping with this work, because we like cows and like to work with them. One lesson we learned that will always remain with us, was that if a thing was worth doing at all it was worth doing well. This was impressed upon us when in our haste to get to the next cow, we did not get all the milk and when the cow was "stripped" this was laid up against us.

Our Kansas Farmer Dairy Club members now number sixty-five, and eight of these are girls. This means we have this many full-fledged members, but does not include those whose negotiations with the banks are not yet completed. These members live in all parts of our state and will do the work under varying conditions.

We hope our boys and girls will remember to write us about their work that we may tell the other members through the columns of our paper and thus pass around their ideas which may be the very thing that will be helpful to another member.



PART OF THE DAIRY CLUB MEMBERS OF LEAVENWORTH COUNTY—FROM LEFT TO RIGHT, RALPH EDWARDS, GEORGE KUHNHOFF, BEN ZOLL, GUY FULCHER, ERNEST ASBERY, ERNEST WENDEL, GUS AARON JR.

GENERAL FARM INQUIRIES

Something For Every Farm—Overflow Items From Other Departments

IN our issue of May 6 we answered an inquiry from a Clay County reader concerning the use of sweet clover as a pasture crop.

E. J. G., owner of Smoky Hill Ranch in Wallace County, read this article and writes as follows of his experience:

"I am sure your reader, R. R., of Clay County, will find nothing better than sweet clover for his pasture where the native grass has died out, and it is not yet too late to sow providing he uses scarified seed. I do not agree with you that the native grasses and weeds are likely to kill the sweet clover. I have it growing in Logan and Wallace Counties in the rankest kind of salt grass and it is making splendid pasture. I now have 100 yearling Galloway bulls and 50 hogs pasturing on sweet clover, and they are doing exceptionally well.

"I also have it growing on low, sandy land which is almost pure sand and gravel. My first seeding was in 1914, but very little of it came up until the following year. I have sown fifty acres this spring, using scarified seed at the rate of six pounds an acre, put in with an alfalfa drill. This seed germinated in four days and has made a good stand. We will sow considerable more within the next two weeks.

"In pasturing sweet clover we have had no trouble from bloat as with alfalfa."

Cow May Have Cancer.

M. F. W., an Oklahoma reader of KANSAS FARMER, writes that one of his cows has a sore eye. He first noticed it last December when it resembled a small boil on the lower lid. It is spreading, and while the lid is not swollen it is very red and the eye waters continually. He fears it may be a cancer and asks what can be done.

Dr. R. R. Dykstra of the agricultural college, answers this inquiry as follows:

"I cannot state positively the nature of the growth affecting your cow's eye, but from the fact that it is spreading, and that cancers are rather common in the region of a cow's eye, the chances are that it is a cancer. A positive diagnosis can only be made by removing a portion of the growth and having it examined under the microscope.

"The only treatment to suggest is to cut out the growth completely. If it is not a cancer the growth will not return after such treatment, while if it is a cancer, the chances are that it will reappear in a short time. If a positive diagnosis of cancer can be made and the animal is still in good condition, it is desirable to butcher her."

This case is one requiring the attention of a veterinarian.

Lung Worms in Pigs.

H. P. M., a New York reader of KANSAS FARMER, writes that one of his 8-months-old pigs recently seemed to have something in its throat, causing it to choke. It became worse and had to be killed. It gasped for breath, would hold its shoulders to the ground, and a small lump appeared beneath the skin which when opened seemed to be a growth of gristle around the windpipe. The lungs seemed spotted and the heart flabby. Another pig of the same age is now showing similar symptoms. These pigs have been kept in a clean pen and fed skim milk, bran, alfalfa, corn, and midlings.

This inquiry was referred to Dr. R. R. Dykstra of the Kansas Agricultural College, and his answer follows:

"Whatever it is that is affecting your pigs I do not believe that it is contagious. I believe that the gristle you mentioned as having been found around the windpipe is a normal condition. If the other hog that is now sick with similar symptoms has the same gristle in the region of the windpipe I would appreciate it very much if you would cut it out and pack it in a bottle in some two per cent solution of formaldehyde and send it to me by express prepaid.

"Hogs show symptoms such as you describe when they are affected with lung worms. These are very fine thread-like worms lodged in the minute divisions of the windpipe and sometimes difficult to detect by the inexperienced. There is no curative treatment for lung worm disease of hogs, and in many cases the presence of these parasites does not seem to embarrass the animal materially. Preventive treatment consists of separating the healthy from the diseased animals together with a thorough disinfection of the quarters. It is a mistake

to keep hogs in low, marshy places, as that is a favorite breeding place for the worms."

Life of Fence Posts.

S. P., Stafford County, asks for information on the lasting qualities of different kinds of posts.

The different kinds of wood vary greatly in the manner in which they resist decay when placed in the ground. The average life of posts made from the following kinds of wood have been thus estimated by the Ohio Experiment Station:

Osage orange, 30 years; locust, 23 years; red cedar, 20 years; catalpa, 15 years; burr oak, 15 years; chestnut, 14 years; walnut, 11 years; hemlock 9 years; elm, 8 years; red oak, 7 years; willow, 6 years. The number of years that a fence post will last should be considered in the price paid for it. Often for a few cents additional a much longer lived post can be secured, making it cheaper in the end. If the bark is left on a post it will rot much faster than if

at times even scalds so that the hair comes off. Avoiding sore shoulders is largely a matter of care as the horses are being put to hard work. On some farms horses always have sore shoulders and on others they are seldom seen.

One of the first points in their prevention is to fit the horse with a good felt-lined collar. The leather of the collar should be kept soft by being oiled, and the dirt should be carefully scraped off each night. In the beginning of the season it is a good plan to lift up the collar occasionally during the day and clean out any dirt that may have accumulated.

Sometimes the hames are allowed to sag down at the top so the point of draft is too low on the shoulder. In such cases a sore may result even though a good collar is used. The hames should be fastened as closely together as possible without pinching the upper part of the neck.

Bathing the shoulders at night with cold water after the harness is removed helps to toughen them at the beginning

then they will have a certain influence on the old folks who still cling to the idea that lanes of dust and mud are an unavoidable feature of the country. The Illinois plan is not to teach road building along with the three R's, but to show what can be accomplished without excessive cost or labor, if the improvements are well planned and intelligently directed.

Disking Prairie Pasture.

J. E. B., McPherson County, asks if anyone has had any experience in disking an old prairie pasture and sowing and harrowing in timothy seed in the fall.

Timothy cannot be expected to do much good in Central Kansas. Only in the eastern part of the state is it successfully grown. Meadow fescue—commonly called English Bluegrass—orchard grass, or Western rye grass is more adapted to Central Kansas conditions, and even these grasses are by no means sure of giving good results. It has been very difficult to find domestic grasses that could be seeded in pastures to take the place of the wild prairie grass. Bermuda grass is becoming acclimated farther north, and if a hardy strain were started this would make a splendid pasture grass. It must be started from roots. They can be planted as late as up to June. The grass has been successfully started in some parts of Kansas. There are several parties now advertising Bermuda roots of these hardy strains, in KANSAS FARMER, and we would suggest that our correspondent write to these advertisers.

Disking an old prairie pasture sometimes helps because it stimulates the growth of the grass that is still alive.

Arkansas Improving Roads.

The state of Arkansas passed a law a few years ago creating a highway commission to aid county officials in improving their roads. Its first biennial report was distributed recently, and contains strong evidence that the Apple Blossom state is wasting a very large sum by performing work in an uneconomical manner. The sum of \$1,200,000 is being spent annually under the direction of district road supervisors, who know little about the real fundamental essentials of the work they supervise. By the time an intelligent overseer has served long enough to acquire by experience some understanding of what should be done, his term of office has expired. As his pay is small and the criticisms of his work are about as numerous as the number of persons of mature years in his district, he shows his intelligence by declining a re-election. As a result the annual expenditure of \$1,200,000 on Arkansas roads results in "no great improvement over the conditions of the past." The state highway commission points out, as have similar commissions in other states, that the most economical and effective method of carrying out the work is to place the road work of a large section in the hands of an engineer, whose salary can be met without any inconvenience. This engineer, in turn, would work in co-operation with the state highway department, which could render him valuable assistance from time to time. In this way the annual \$1,200,000 would accomplish something more than maintain the present system of poor roads.

Hogging Down Corn

M. S., Marshall County, asks if it would pay him to plant a field of corn for the express purpose of "hogging it down." To many this method of harvesting the crop may suggest shiftlessness, but it is coming more and more into use because it is a money-making proposition. In Iowa, corn is being hogged down profitably in every county in the state, says Prof. John M. Evvard in a recent bulletin.

Hogs are profitable corn harvesters because they work for nothing. It is this saving of labor that makes it a profitable practice.

If our correspondent has a convenient field suitably fenced, it would pay him to put it into corn with the idea of using the hogs to gather it. It will add to the value of the corn to sow rape between the rows at the last cultivation. Rye or wheat can be drilled in and used for pasture. The green feed admirably supplements the corn while the hogs are gathering the crop.

Another splendid combination is to arrange the corn field to be hogged down so the hogs can run to an adjoining alfalfa or clover pasture.



SUDAN GRASS ON SMOKY HILL RANCH OF E. J. GUILBERT, WALLACE COUNTY, 1915. GROWN ON UPLAND WITHOUT IRRIGATION

it is removed. Posts treated with hot asphalt resist rot much longer than untreated posts. It is estimated that the life of a cement post is 48 years and that of a steel post 30 years.

Destroying Moles.

J. L. R., Wabaunsee County, asks how to prevent moles from doing damage in garden and lawns.

The mole lives on insects and in most locations is more beneficial than harmful, but it becomes a decided nuisance in a garden or lawn. Since moles do not eat vegetable substances they cannot be very successfully poisoned. The only practical way of killing them is to use traps. Ordinary traps such as are used for catching rats and other rodents, cannot be used in catching moles. Special mole traps can be secured. These are of three different types—the harpoon, scissor-jaw, and choker. They should be set in freshly broken tunnels and visited at least twice each day. Freshly broken soil usually indicates that the runway is in use. When in doubt a small break may be made in the ridge. If the mole is using the tunnel it will be repaired in a few hours.

Moles are quite persistent in repairing breaks in their tunnels, and may often be surprised at their work and be thrown out with a fork or spade. These little animals are sometimes successfully trapped in empty glass jars of gallon size. The jar should be set along a runway that is in use. The excavation should be deep enough to receive the jar and allow its top to be somewhat below the bottom of the tunnel. A sod may then be placed over the excavation so as to cover it without obstructing the mouth of the jar. The mole in coming along the tunnel, falls into the jar and cannot climb out. The success of this method of trapping depends upon the skill used in placing the jar.

Preventing Sore Shoulders.

A reader asks why horses are so much more apt to have sore shoulders in the spring than at other times during the year, and if there is any way to avoid them.

In the spring horses are soft and sweat more freely than they do later. The skin gets very hot under the collar and

of the hard working season. Some recommend the use of salt water for this purpose.

Unequal length of tugs sometimes is responsible for sore shoulders. The leather of tugs on a new harness may stretch unequally so there will be a slight variation even though the tugs be buckled in the same hole. The man who is always on the lookout for such little points will usually be able to keep his horses in good condition for work.

Eradicating Sandburs.

P. J., Rice County, asks if there is any sure way of getting rid of sandburs. The field in which they are the worst is to be planted to kafir this season.

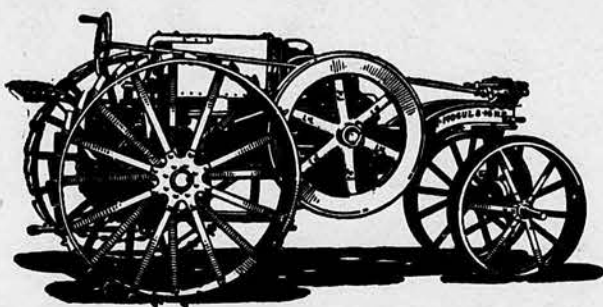
Sandburs are annuals and thorough cultivation to prevent them from forming seed, is about the only means of keeping them in control. They are apt to cause much more trouble in waste places and on poor land where crops do not grow. In such locations it is difficult to get rid of them. Alfalfa will choke them out if a good stand is secured, and in fields where they are very thick seeding to alfalfa would be a good means of thinning them.

Children Study Road Building.

Community welfare is so much aided by road improvements in Illinois, where the results of highway betterments have been watched critically for a number of years, that Hon. Francis G. Blair, state superintendent of instruction, has published a 32-page bulletin on good roads for use in the public schools. It is based on the fact that the best way to bring about a reform is to educate the public to evince a desire for it. So this bulletin tells the teachers how to instruct his pupils to see what are defects and what are good features of the local roads. Then when they grasp what are the real defects in the roads, they are taught what are the remedies. In addition the teacher is given suggestions concerning local exhibits and demonstrations to arouse an interest in road improvements, and there is advice on ways to encourage cleaning up the roadsides. Of course, it is not the Illinois school children who will take part in the road building of today. But they will build the roads a few years hence and until

A Plain Statement of Fact

Mogul 8-16: \$725 Cash f. o. b. Chicago



AT the present prices of gasoline and kerosene, no farmer can afford to use a gasoline tractor. Gasoline averages now over 100 per cent higher in price than kerosene and is likely to go higher rather than lower, in the opinions of men who know the oil business.

Again, it is neither safe nor economical to use kerosene in a tractor not specially designed to operate on kerosene. Merely changing the fuel mixer is not enough; the design of the whole motor must be changed.

Kerosene and gasoline tractors of equal power sell for about the same price and use practically the same amounts of fuel. On that basis a Mogul 8-16 tractor saves each year, in fuel bills alone, about a third of its price. The figures prove the truth of this statement.

If you are considering the purchase of a tractor this year, give these facts careful study, from every point of view, before you spend your money.

Mogul and Titan tractors are designed specially to operate on kerosene and to give their users the full benefit of this advantage. There are four sizes—Mogul 8-16 and 12-25, Titan 15-30 and 30-60. Write us for full information before you buy any tractor.

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Preventing Injury From Kafir Ant

THROUGHOUT the kafir-growing section a species of ant has been very destructive to the seed of planted kafir during the past few years. They work on the other grain sorghums and corn also.

Kafir ants cease working when the seed germinates. Because of this fact hastening germination by careful selected preparation is a means of control. Washing the seed with such repellents as kerosene or turpentine, are methods that can be employed. J. W. Colloch, of the Kansas Experiment Station, found that dipping kafir seed in crude commercial carbolic acid protected 90 per cent from the ravages of the ant. The seeds of milo and fetterita are soft, and if these are dipped it should be done in small quantities just in advance of planting, and the seed should be thoroughly drained.

W. P. Hays, assistant in entomology at the Kansas Experiment Station, says that colonies of these ants are numerous and may be found under rocks in pasture lands and in kafir, wheat, rye, oats, and alfalfa fields.

Isolated and compound nests are composed of small chambers, whose walls are hardened and packed. The minuteness of these galleries prevent larger ants from molesting the kafir ants. Winged males and queens appear in July. No data have been obtained on the mating flight.

While most farmers know something of the injury done by kafir ants, few of them are acquainted with the depredations, due to their minute size and habit of working underground. They have found seed kernels wholly or partially hollowed out with the mealy interior scattered about on the ground and the cuticle or outer shell scarcely disturbed, but have not always known what was responsible for this condition.

Handling Alfalfa for Horses

To make the best horse hay, alfalfa should be allowed to stand until well in bloom.

In curing horse hay it is well to keep in mind that the dust which is present in so much alfalfa is largely a result of the presence of foreign moisture such as rain or dew, rather than the presence of a little moisture within the plant.

If alfalfa hay is stored in the barn for horses, it is well, while mowing it away, to sprinkle it generously with a mixture of salt and air-slaked lime, equal parts.

Destroy Codling Moth

To keep apples from becoming wormy, spray the trees immediately after the blossoms or petals fall in order to fill each little calyx cup or cavity with poison. About three-fourths of the codling moth worms which hatch from eggs three or four weeks later enter the apples through this cavity. If we succeed in putting a few grains of arsenic in each little calyx cup, the first meal the apple worm takes will be its last one.

Since the calyx stand wide open for only a week or ten days, the spray must be applied within this time in order to be effective.

Commercial lime sulphur at the rate of 1½ gallons to 50 gallons of water, and arsenate of lead paste at the rate of 2 or 2½ pounds to each 50 gallons of spray mixture should be used.

The trees should not be sprayed while in full bloom. Such work would interfere with pollination, without which fruit cannot set, and destroy the fruit grower's best friend, the honey bee. It is safe to spray when two-thirds of the petals have fallen, because the flow of nectar has practically stopped and few, if any, bees will be injured.

This should be the most thorough and drenching spray of the season. A nozzle throwing a rather coarse driving spray with high pressure should be used in order to force the poison down deep into the calyx cups.

This is the most important single spray of the season. It not only controls the first brood larvae of the codling moth, but it also prevents, to a great extent, the losses occasioned by the later broods of the pest. It is also an important spray in controlling the lesser apple worm, plum curculio, canker worm, apple scab, black rot, and other less important insect pests and fungous diseases.

The next spray should be applied

about two or three weeks after the calyx spray. This will be about the time the majority of the first brood codling moth eggs are hatching and if the surface of the leaves and fruit are thickly peppered with the poisonous spray, many of the worms will be killed by feeding slightly before they reach the blossom end of the little apples. Since this is also the first important spray against apple blotch, Bordeaux mixture should be used with the arsenate of lead if this disease is prevalent in the orchard.

About eight or nine weeks after the blossom or calyx spray the third application should be made, using the same spray chemicals. This is an important spray against the second brood of the codling moth and lesser apple worm, also the plum curculio, apple blotch, and other insect pests and diseases.

Later sprays may be necessary, but under average conditions the work as outlined above, if thoroughly done, should control not only the codling moth but the other more important insect pests and diseases of the orchard. Other spray schedules might be suggested, but this is the one which has given the best results in the tests of the Missouri Agricultural Experiment Station.—T. J. TALBERT.

Convict Road Building

Every mile of good road requires a lot of brain and muscle to be used in its construction, and a big item in the total cost of road building is that of unskilled labor. The work is healthful and interesting, and so in many states where the profitable use of convicts in some uplifting occupation is a difficult problem, they are employed in road building. In the northeastern states there has been a marked opposition to this, however, due to several causes which collectively may be regarded as manifestations of the conservatism of long-established, wealthy communities. It is interesting to note, therefore, that the initial experiment with convict labor in Massachusetts last year was so satisfactory that undoubtedly such work will be continued, while in New Jersey, where the system has been under trial for several years, this favorable opinion has just been expressed by the state highway engineer: "The quality and quantity of work done in 1915 exceeded, in proportion to the money spent, the previous results, and the experience gained during the past year will enable us to produce much more satisfactory results in the future." This merely confirms for the northeastern states what has already been demonstrated in the south and west.

Rural Credit Banking

The Chamber of Commerce of the State of New York at its recent annual meeting took up the subject of rural credits and the following report of its Committee on Finance and Currency was adopted:

"The Committee on Finance and Currency has been at work during the past several weeks to ascertain the status of the rural credit movement at home and abroad.

"Under existing conditions American agriculture calls for two classes of credit—long-term mortgage loans and short-term credit loans. The former of these has hitherto been met largely by trust companies, savings banks, life insurance companies and other banking agencies not directly identified with agriculture. The Federal Reserve Act makes provision for five-year loans on farm lands. Short term loans have generally been provided by the national and state banks and trust companies.

"As a branch of national industry, agriculture must compete with manufacturing, transportation, commerce and trade for the available supply of credit resources. It is claimed that farming interests in this competition have long labored and still labor under the handicap of having to pay more for their capital in the development of rural resources than other branches of enterprise pay. This inequality of condition, it is declared, is to no small extent responsible for the tendency to abandon the cultivation of the soil and to crowd into cities, causing one of the menaces of the age.

"This is the broad social basis of the demand for a distinct type of banking suited to meet actual rural needs on as economical a basis as practicable, con-

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sistent with safety and efficient service; therefore, be it

"Resolved, That the Chamber of Commerce of the State of New York regards the rural credit movement in the United States as having reached the point at which provision should be made for agricultural banking as a distinct field for the employment of capital and credit; that such legislation should take into account what existing institutions have done and are doing, and should aim at developing among farming interests the capacity for co-operative credit associations in district groups, suited to the different parts of the country and all subject to the conservative guidance and control of federal authority; and be it further

"Resolved, That the Chamber of Commerce of the State of New York opposes any method of agricultural banking in the United States which requires the use of government funds or the use of any postal savings deposits in any rural banking project, or any legislation exempting from taxation any particular class of obligations."

Cowpeas Improve Soil

There is no crop that will give quicker returns than cowpeas when used as a green manure crop. This statement was made with reference to Allen County conditions in the annual report of the farm bureau of that county. It has been our observation that it can be widened to include a number of counties in Eastern and Southeastern Kansas. The cowpea is a soil improver whether it is plowed under as green manure or fed to live stock as hay or pasture. The crop is coming into favor more and more as a feed for milk cows. Cowpea hay is fully equal to alfalfa hay as a milk-producing roughage. It is a profitable crop on farms where little live stock is kept because of its influence on the crop that follows.

In Allen and other counties in the southwestern part of Kansas, where cowpeas are commonly grown, they are usually planted in rows and cultivated. They are given the whole season in which to mature, and are followed by corn, kafir, or some other spring crop the next season. The cowpea is a deep feeder, and as a result of its large root system has a mellowing effect upon stiff, clay soils, making them much better adapted for the crops that follow.

A number of instances are given in the report above referred to, showing conclusively the great value of the cowpea as a soil-builder. J. B. M. Reed grew some cowpeas in 1913, using them for hay. The following year this land and an adjacent cornfield were seeded to alfalfa. In 1915 the yields on the two different parts of the field were compared. The cowpea land yielded in two cuttings at the rate of 6,180 pounds of alfalfa hay to the acre, the corn land 4,210. On another farm sweet clover followed cowpeas. In 1914 the sweet clover on the cowpea land yielded hay at the rate of 2,580 pounds, while on similar land adjoining that had not grown cowpeas, the yield was at the rate of 1,920 pounds. In 1915 this sweet clover yielded 5,600 pounds of hay to the acre on the cowpea field, and only 3,100 on the other land.

It is considered best to follow cowpeas with corn or kafir. We note that on one Allen County farm an acre yield of 62.5 bushels of corn was produced on cowpea land, and only 41 bushels on similar land that had not grown cowpeas the preceding year. On another farm, cowpea land yielded 46.6 bushels of corn to the acre, while a similar field returned but 26.8 bushels. On a third farm a 40-bushel yield of corn was produced following cowpeas, and only 30 on the plot with which it was compared. The average increase in yield due to the growing of cowpeas on these three farms, was 17.1 bushels an acre. There was no difference in the soil or the treatment of the plots compared except the previous cropping with cowpeas.

As a legume for short rotations and as a green manure crop, the cowpea is unrivaled. It is sensitive to cold and wet weather and should not be planted until late in the season. Soon after corn planting is about as early as it is safe to plant this crop, and it may be planted as late as the middle of July and give fairly good results. The rate of planting is from two to ten pecks to the acre, depending on the character of the soil and whether the crop is being grown for seed or to produce a maximum amount of forage.

The most critical period in a pig's life is just before and after weaning. Pigs need the closest attention and watching during those few days when changing their diet from the balanced ration Nature provides in the sow's milk, to the coarser foods they must henceforth depend on.



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Keep Your Poultry Clean and your profits will be BIGGER. Chickens that are bothered with lice and mites are a poor investment. Keep them clean with CAR-SUL—they will lay more eggs. Disinfect your poultry houses by spraying with CAR-SUL and your chickens will be free from all lice and safe from disease germs.

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Kansas Farmer Dairy Club

Feeding Dairy Cattle For Milk

A WELL-BRED dairy cow is a very highly organized machine for converting feed into milk. No matter how great the capacity of the cow, however, she must have the feed of the right kind and plenty of it, or she will not give any more milk than will a "scrub." Learning how to pick out the good cows and then how to supply them with plenty of feed of the right kind, are of the most important lessons in dairying. Keeping records of production will locate the good cows, and by carefully studying the feed requirements of the dairy cow, the beginner can learn how to feed her so she will produce a big flow of milk. There is no advantage in having a cow with a capacity for giving sixty pounds of milk a day unless she is so fed as to have the necessary material from which to make this large quantity of milk.

WHAT FEEDS CONTAIN.

To make a study of feeding cows it is necessary to understand the meaning of a few terms that are constantly used. Animal feeds are divided into two general classes with reference to bulk—roughage, and concentrates. Roughage includes all the coarse feeds, such as fodder, hay, silage, etc. Concentrates include the grains and all mill feeds, such as bran, linseed oil meal, cottonseed meal, etc.

In all feeds there are three groups of substances. These are known as "protein," "carbohydrates," and "fat," and are spoken of collectively as "nutrients." In no two feeds are these groups of substances found in the same relative proportion. One feed may have a large amount of protein and another a small amount. These substances must be given careful consideration in feeding a cow so as to get the best results. It is usually necessary to feed several different things in order to supply these nutrients in the right amount. Such combination of feeds as will supply the nutrient requirement for one day is spoken of as a "ration."

PROTEIN.

"Protein" is the term applied to all the substances containing nitrogen. These substances are sometimes spoken of as the nitrogenous group in opposition to the carbohydrates which contain no nitrogen. Protein substances are the flesh builders. From them must come all lean flesh, blood, tendons, hair, horns, and the casein and albumen of milk. The casein and albumen in milk is the part that curdles when the milk sours. No other substances in the feeds can be used by the animal as a substitute for protein. Without this group of nutrients there can be no growth and the milk cow cannot give milk. A certain amount of protein is absolutely essential to milk production.

CARBOHYDRATES.

The carbohydrates contain a number of different substances. They are divided into two general groups. The first, called the "nitrogen free extract" includes the starch, sugar, and a number of similar substances. Grains and mill feeds are rich in starch. "Crude fibre" is the name applied to the other group. Crude fibre is abundant in coarse forage. It is much less digestible than the starch and sugar. The animal uses the carbohydrates to keep its body warm, to supply energy which produces

muscular activity, and if there is any excess it is stored in the body as fat and can be used for producing heat and energy at some future time when the daily feed may happen to be deficient in heat-making material. This group of substances is used much as fuel is burned in the fire-box of an engine.

FAT.

All feeds contain small quantities of oils or fats. They are frequently spoken of as "ether extract" because they are dissolved by ether in the process of finding out how much fat a particular kind of feed contains. They are used for the same purposes in the body as the carbohydrates but are much more efficient. A pound of fat will produce two and two-tenths times as much heat as will a pound of carbohydrates. The amount of fat found in a feed is always multiplied by 2.2, so as to obtain its carbohydrate equivalent. After being multiplied by this factor it can be added to the carbohydrates. It is the same sort of problem as adding pounds and ounces—the pounds must be reduced to ounces before they can be added to the ounces.

BALANCING THE RATION.

A sufficient amount of protein is necessary for milk production because nothing can take its place. Feeds containing a high per cent of protein are usually expensive, so from the standpoint of economy the protein should never be supplied in excess of the requirement. If too much protein is fed and there is a deficiency of carbohydrates, the more expensive protein will be used by the animal to take the place of the carbohydrates. The average milk cow can economically use about one pound of digestible protein to every six and one-half to seven and one-half pounds of carbohydrates and carbohydrate equivalent. This is what is meant by the term "nutritive ratio." A nutritive ratio of 1:7 would mean that the feeds contain one pound of protein to every seven pounds of carbohydrates and carbohydrate equivalent.

On the farm most feeds contain plenty of carbohydrates but are short on protein. Alfalfa, clover, cowpeas and soy beans are exceptions. These protein-rich roughages are almost necessary to economical milk production, because the concentrates rich in protein are expensive. If the roughage fed is corn or kafir fodder, there will not be enough protein for making milk and some cottonseed meal or linseed oil meal will have to be fed. Pasture grass contains the protein, carbohydrates, and fat in about the right proportion, and the grass is palatable and easily digested. It is the ideal feed for milk cows. It is simply a matter of the cows getting enough without having to work too hard for it. There is no season of the year when a cow will give more milk with so little extra feed as when there is plenty of pasture.

The pasture season does not last long, however, and the Kansas Farmer Dairy Club member will find it profitable to make plans to have some supplemental green feed. A patch of ordinary field corn, some sweet corn, cane, kafir, or Sudan grass planted close to the barn, will furnish green feed when the pasture is short and will help keep up the milk flow economically.

A high producing cow should have some green feed even during the summer

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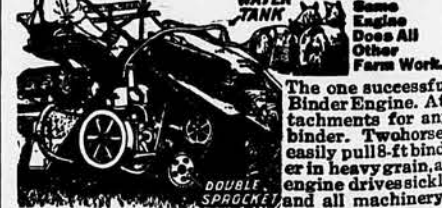
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To the member who writes us oftenest, telling of the interesting things that happen in connection with the club work and the things learned from it, and who sends us the best pictures, we will give \$3 and one year's subscription to KANSAS FARMER. The one ranking second will receive \$2 and a year's subscription to the paper, third \$1 and a year's subscription, fourth and fifth one year's subscription each.

The writing of these letters will help the club members to write better stories at the end of the year and this is one of the points upon which all contestants will be graded at the end of the year.

The cow of one of our Shawnee County members has reached the 60-pounds-a-day mark. How much milk is your cow giving?



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Electric Wheel Co. 34 Elm St., Quincy, Ill.

season when on good grass. A good concentrate ration to feed is a mixture of four parts corn chop, by weight, two parts bran, and one part cottonseed meal. Give one pound of this grain mixture for every four pounds of milk the cow gives. If your cow will give four gallons of milk she should have about eight pounds of grain daily.

Unless the total amount of feed the cow gets is more than enough to supply her own body requirements there can be no milk produced. The feed for maintenance must be supplied first. We will have something to say in the next issue of our paper about the nutrient requirements for maintenance and also the nutrient requirement for milk production.

We would urge that our dairy club members study carefully these fundamental principles of feeding. Unless they are understood it will be difficult to go on and learn the many other things necessary to the proper feeding of milk cows.

Birds Eat Many Insects

If boys knew all about our bird friends—their habits, what they eat, how they nest—there would then be an incentive for him to protect them. He would then want to plant hedges, trees, and shrubs in the waste places on the farm so the birds could have a place to nest and hide. Instead of shooting robins, catbirds, and thrushes for eating cherries, he would plant mulberries which the birds like better and thus save his cherries.

When we all learn to be kind to our bird friends and protect them the Kansas insect problem will be solved. The boy educated in this way will of his own accord legislate out of existence the 22 caliber rifle, the tomcat and the bird on Nellie's hat.

Kansas has game laws enough to hang every man, boy, and cat in the state if they were enforced. Laws are made for the other fellow. It is a serious offense, according to the statutes of Kansas, to kill a songbird—unless it is done by the tomcat method.

Farmers all know that more damage is done now by insects than was the case twenty or thirty years ago. Continuous orchards and fields poorly cared for furnish plenty of food for insects. Public carriers convey infestation in one form or another. Seed and nursery stock, before the stringent horticultural laws went into effect, brought in many undesirable bugs.

There is another reason for the increase in numbers of native and introduced insects and that is the wholesale destruction of thousands of birds that feed upon them. A robin ate a cherry or spoiled the first apple in a new orchard. The orchardist forgot the spring song of the bird and went out after redbreast with a shotgun.

Perhaps the farmer's wife and daughter, to say nothing of his wife's sister in the city, and other wives' sisters, wanted a hat that looked like a bird's nest. The cuckoo, robin, flicker, woodpecker, red-bird, and a host of other insect-eating birds furnished the feathers.—GEORGE O. GREENE, K. S. A. C.

Merton D. Smith, one of the dairy club members in Johnson County, writes that his cow is doing well. He began his record April 22. He calls our attention to the fact that he lives in Johnson County instead of Douglas County as was stated in our May 6 issue. He gets his mail at Eudora but lives across the line in Johnson County and sells his cream at De Soto.

In Marshall County a Holstein heifer calf has been offered by one of the breeders as the grand prize in the boys' acre-corn-growing contest. This contest is conducted under the direction of the county Young Men's Christian Association. This calf is in addition to the silver loving cup offered by the farmers of Guittard Township. This is a fitting recognition of the fact that crop production and good live stock go together. With such prizes to work for, there should be more than the usual interest in the corn-growing contest in this county. Marshall County is well adapted to corn, but dairying and live stock production are interests that mean much to the agricultural progress of the county.

The annual meeting of the Holstein-Friesian Association of America will be held in Detroit, June 7. The recently organized Holstein-Friesian Association of Kansas is entitled to representation at this meeting.

Wire worms injure corn and potatoes most, but feed freely on wheat and oats. They thrive best in sod ground and may be controlled by crop rotation, fall plowing, and good cultivation. So may the grub-worms.



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THE difference between a modern De Laval and any other cream separator is apparent at first sight. And if you will take five minutes to compare the separating bowl construction, the size, material and finish of the working parts, particularly those subject to wear, the manner of oiling, and everything which enters into the design and construction of a separator as a simple durable machine, you will still further see the difference.

Then if you go a step farther and turn the cranks of the two machines side by side for fifteen minutes, running milk or water through the bowl, you will see still more difference.

And if you will run the two machines side by side in practical use, as any De Laval agent will be glad to have you do, the De Laval one day and the other machine the next, for a couple of weeks, you will see still greater difference in the work of the two machines.

Every De Laval agent considers it a privilege to show the difference between the De Laval and other separators and to afford every prospective buyer the opportunity to try out and prove the difference to his own satisfaction, if on first examination he feels the slightest doubt about it. If you don't know the nearest De Laval agent write to the nearest office as below.

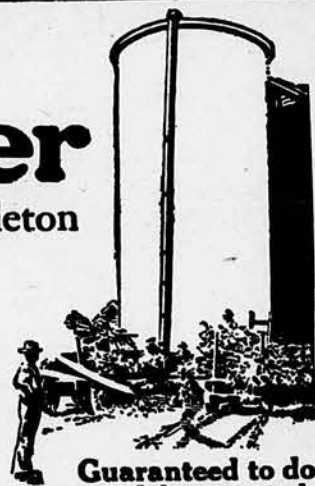
THE DE LAVAL SEPARATOR CO.
165 Broadway, New York 29 E. Madison St., Chicago
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

APPLETON Silo Filler

Actual records prove that Appleton Silo Fillers cost the least

per ton of silage put up or per year of life. Tremendously strong construction makes an Appleton practically proof against breakdown. Solid oak and steel frame, mortised, braced and bolted; impossible to pull out of line. Many exclusive power and labor saving features, such as independent belt driven blower allowing speed to be adjusted for minimum use of power for any height silo; frictionless feed table running on chilled iron rollers; knives spiraled to give clean shearing cut, requiring least use of power. (10 lengths of cut, 5-16 to 2 1/4 inches.) Lowdown cut-under frame, easy to handle. Both feed rolls and table controlled by single lever. Positive self-working safety device.

Two Books Free: One on silo building and silage crops; the other a complete catalog of Appleton Silo Fillers in four sizes for 4 h.p. gasoline engines and up. Write Appleton Mfg. Co., 419 Fargo Street, Batavia, Ill.



Guaranteed to do more and better work with less power than any other silo filler.

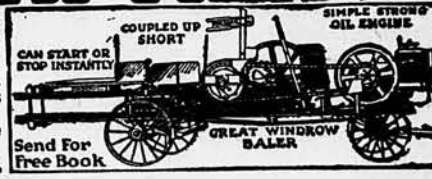
Bigger Profits Better Bales and More of 'Em

There's money in baling hay—big money if you use the famous fast working Sandwich Hay Press (motor power). Bale your own hay—hold it for the top-notch market—make a nice, fat income baling hay for your neighbors—\$10—\$15—\$20 a day clear profit is common with our outfit.

SANDWICH HAY PRESS

Solid steel construction. Sandwich Gas and Oil Engine, with magneto, mounted on same truck furnishes power. Complete outfit built in our plant, superior to assembled machines. Heavy steel chain transmission (no belt to slip). Simple self-feeder and block dropper. Turns out a continuous stream of solid, salable bales. Starts or stops instantly. Best press for alfalfa. We also make horse and belt power presses.

"TONS TELL," Our Book, Sent Free Pictures and describes these great presses. Write, SANDWICH MFG. CO., 517 Center St., Sandwich, Ill.



It's Fun to be Thirsty when you can get **Coca-Cola**



There's the fun of quenching the thirst—and the deliciousness of the thirst quencher to give you double pleasure. But you don't even have to be thirsty to enjoy Coca-Cola—it's a treat, whatever your reason for drinking it. Demand the genuine by full name—nicknames encourage substitution. **THE COCA-COLA CO.** Atlanta, Ga.

The Wheat Yield Tells the Story

of Western Canada's Rapid Progress

The heavy crops in Western Canada have caused new records to be made in the handling of grains by railroads. For while the movement of these heavy shipments has been wonderfully rapid, the resources of the different roads, despite enlarged equipments and increased facilities, have been strained as never before, and previous records have thus been broken in all directions. The largest Canadian wheat shipments through New York ever known are reported for the period up to October 15th, upwards of four and a quarter million bushels being exported in less than six weeks, and this was but the overflow of shipments to Montreal, through which point shipments were much larger than to New York.

Yields as high as 60 bushels of wheat per acre are reported from all parts of the country; while yields of 45 bushels per acre are common. Thousands of American farmers have taken part in this wonderful production. Land prices are still low and free homestead lands are easily secured in good localities, convenient to churches, schools, markets, railways, etc. There is no war tax on land and no conscription. Write for illustrated pamphlet, reduced railroad rates and other information to

GEO. A. COOK,
2012 Main St., KANSAS CITY, MO.
Canadian Government Agent.

NO PASSPORTS ARE NECESSARY TO ENTER CANADA.

We Sell Everything in the PAINT, OIL and GREASE Line, Direct to User, at **Wholesale Prices**

Pure Lead and Linseed Oil Paints. Pure Pennsylvania Auto Cylinder Oil.

"QUALITY FIRST" IS OUR MOTTO.

Our paints are guaranteed for seven years. Reid's Reliable Red, "The Best Barn Paint Made." Save dealers' profit. Write for prices.

R. R. R. PAINT COMPANY - BOX 174 - MOBERLY, MISSOURI

SIX SILVER POPPY TEASPOONS FREE.



We have just made a large purchase of Silver Plated Teaspoons at the advanced price. They are extra weight, full standard length, very deep bowl and the handles are beautifully embossed and engraved in the popular Poppy design, which is the very latest in spoons. Every housewife will be pleased with them and will be proud to place them on her table. Notwithstanding the advance in price, we will give a set of these remarkably beautiful Poppy spoons absolutely free, postage paid, to all who send just \$1.00 to pay for a year's subscription to KANSAS FARMER. Send your subscription order quick and secure for yourself a set of these handsome and serviceable spoons. This offer is good to either new or old subscribers. If you are paid in advance, time will be extended one year. Address KANSAS FARMER, Topeka, Kan.

You will find a lot of bargains on Kansas Farmer's Classified Advertising Page this week. Don't fail to carefully read that page.



Meet Me at the **TULLER** For Value, Service, Home Comforts

NEW HOTEL TULLER

DETROIT, MICHIGAN

Center of business on Grand Circus Park. Take Woodward car, get off at Adams Avenue.

ABSOLUTELY FIREPROOF

200 Rooms, Private Bath, \$1.50 Single, \$2.50 Up Double.

200 Rooms, Private Bath, \$2.00 Single, \$3.00 Up Double.

100 Rooms, Private Bath, \$2.50 Single, \$4.00 Up Double.

100 Rooms, Private Bath, \$3.00 to \$5.00 Single, \$4.50 Up Double.

TOTAL, 600 OUTSIDE ROOMS

All Absolutely Quiet

Two Floors—Agents' New Unique Cafes and Sample Rooms Cabaret Excellence



A New Crochet Book
Edgings and Insertions

A special selection of pretty patterns. Large illustrations with complete instructions. Over 50 new designs applied to Handkerchiefs, Towels, Yokes, Curtains, etc.

Every page useful. Price, postpaid, 10c. Pattern Dept. **KANSAS FARMER** Topeka, Kan.



Little Talks to Housekeepers

Helpful Hints Here for the Women Folks of the Farm

In simple pathways, hand in hand with duty (With faith and love, too, ever at her side), May happiness be met in all her beauty The while we search for her both far and wide. Seeking for happiness we find the way, Doing the things we ought to do each day. —Ella Wheeler Wilcox.

As the morning sun brushes the darkness from the world, grant us today to brush aside the shadows from some unhappy heart.—Stevenson.

Value of Impression

The attractiveness of the farmstead has a high value, and even those things which make it really beautiful cannot be considered whims or expensive luxuries. All these add to the actual appraised value.

This does not mean that you will want to sell your farm in a few years and should be interested in increasing its value for that reason. But a neighbor may for some reason be compelled to sell, and the attractiveness of your improvements may influence a buyer of far more desirable type than would be possible if the place were poorly kept.

While yields and financial success are an indication of the kind of farmer, the neatness and beauty of improvements is the index open to the stranger.

Nor should the possible future neighbor be our only consideration. Our own pleasure derived from restful, artistic surroundings will more than offset the effort necessary to make them so. The yard that is allowed to be taken by tree sprouts and weeds cannot have a restful, inviting appearance.

Buying for the Future

Envied is the woman these days who has in her house a piece or two of her grandmother's furniture. Some who are not so fortunate search the second-hand stores in quest of such pieces disposed of by those unappreciative of their beauty and value.

This has a lesson for us. There is a great difference in the quality of furniture and money paid for well made, substantial pieces will bring good returns for years to come—not only in their value to those who follow, but to the buyer as long as he has use for them.

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. 7001—Ladies' Waist: Cut in sizes 34 to 44 inches bust measure. Very simple, the back extending forward over the shoulders to form a small yoke, the upper edges of the front gathered. The closing is in front and leaves the neck open and trimmed with a pretty collar. No. 7702—Girls' Dress: Cut in sizes 2, 4 and 6 years. Without any ornament, this little dress wins admiration solely on account of its design. The odd closing outline is noteworthy; the square neck and novel sleeve cuffs are of interest, and the skirt has four gores. No. 7699—Ladies' Shirtwaist: Cut in sizes 34 to 44 inches bust measure. In the prevailing fancy for comfortable attire this waist made with a tuck in each shoulder edge. A handsome collar in scalloped outline is right style for the tie that is worn to give smartness to the model. No. 7746—Ladies' Apron Dress: Cut in one size. The odd style of buttoning over the shoulders almost to yoke line gives the semblance of the cape effect, now good style in other garments. Edging is used to finish the square neck and popular sleeve; an elastic at the waist adjusts the garment, which slips on over the head. No. 6870—Girls' Apron: Cut in sizes 4 to 12 years. Linen, gingham or calico can be used to make this apron. The apron is cut in one piece and fastens with buttons at each shoulder. There is a pocket on each side of the front. No. 7738—Ladies' Negligee: Cut in sizes 36, 40 and 44 inches bust measure. Irresistible, with a touch all its own, this negligee is in empire style and has the body and sleeves in one. The skirt portion is gathered at its upper part to give a ripple in its fall to the desired length.

For Greatest Satisfaction Use DOUBLE SERVICE Automobile Tires

Guaranteed 7,000 Miles Service

Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires.

This 100% greater wearing surface naturally gives that much more mileage and service. The average of 13 miles of tough tread and one inch surface tread rubber makes these tires absolutely punctureproof.

These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service tires are in use in the U. S. government and European War service. Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer.

PRICES

	Size	Price	Size	Price
30x4	12.00	\$2.50	30x4	\$17.45
32x4	12.00	\$3.10	32x4	\$18.30
34x4	12.00	\$3.30	34x4	\$19.15
36x4	12.00	\$3.50	36x4	\$20.00
38x4	12.00	\$3.70	38x4	\$20.85
40x4	12.00	\$3.90	40x4	\$21.70

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order or about special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

Double Service Tire & Rubber Co., Akron, O.
Dept. KF

DOUBLE THICKNESS OF TREAD AND RUBBER. ABSOLUTELY PUNCTUREPROOF.

Pump Comforts

There's nothing that makes farm life more worth while than an abundance of pure water for kitchen, bath, lawn, garden, barns, dairy, troughs, fire protection, etc. Goulds Pumps are reasonable in price, and cost little to maintain. Our service Dept. advises free on selecting from the 300 styles of

GOULD'S PUMPS

—hand, windmill, gasoline, motor. Rigidly tested. Guaranteed. Backed by 65 years' experience. Send to-day for our new free book "Water Supply for the Country Home." Address Department Y.

The Goulds Mfg. Co.

Main Office & Works:

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Fig. 1631 "Pyramid"

GOOD KANSAS LAND CHEAP

Those who located in Central Kansas 20 years ago are farmer-kings today. Their land has made them independent.

Your chance now is in the five Southwestern Kansas counties adjacent to the Santa Fe's new line, where good land is still cheap.

With railroad facilities this country is developing fast. Farmers are making good profits on small investments. It is the place today for the man with little money.

Wheat, oats, barley, speltz, kafir and broom corn, milo and feterita grow abundantly in the Southwest counties referred to. Chickens, hogs and dairy cattle increase your profits.

Write for our illustrated folder and particulars of easy-purchase contract by which you get 160 acres for \$200 to \$300 down, and no further payment on principal for two years, then balance one-eighth of purchase price annually, interest only 6%—price \$10 to \$15 an acre. Address

E. T. CARLIDGE,

Santa Fe Land Improvement Co.,
1870 Santa Fe Bldg., Topeka, Kansas

BEE SUPPLIES Lowest prices
Full line of everything needed. Write for new 1916 catalog.
Clemens Bee Supply Co., 140 Grand Ave., Kansas City, Mo.

When writing advertisers, please mention Kansas Farmer.

The plainer the pattern, the less apt one is to tire of it, and this will add to its value.

The well furnished house is not necessarily the one that is full of furniture, but the one which the furniture seems to fit, and the plain, well made pieces will adorn the space with greater grace than will profusely decorated pieces. And though the initial cost of the plain, heavy furniture may be a little higher, the value received will more than offset the difference in price.

Journal of Female House Fly

1. Thursday, November 2, 1911. Went into winter quarters. Barely lived through the long, hard winter.

2. April 20, 1912. Came out of winter quarters and laid my first batch of eggs—120 in number—in a manure heap.

3. April 21, 1912. My first 120 eggs have hatched.

4. April 22, 1912. Larvæ have undergone first molt.

5. April 23, 1912. Larvæ have undergone second molt.

6. April 26, 1912. Larvæ transformed into pupæ.

7. May 1, 1912. One hundred and twenty full grown flies, sixty of which are females.

8. May 3, 1912. Laid my second batch—120 eggs—this time in the filth of an uncared-for privy.

9. May 13, 1912. One hundred and twenty flies came from my second batch of eggs. Laid my third batch in a kind neighbor's garbage can.

10. May 20, 1912. The city has offered a prize to the school child who will kill the largest number of flies. The boy at the house where I live is killing flies right and left. And to think—we have all been eating at the same table with him.

11. May 21, 1912. Laid my fourth batch of eggs. Left alone and unhindered, by September 10, 1912, my descendants will number 5,598,720,000,000.

—JOHN J. PUTNAM, Indiana State Board of Health.

First Impressions Lasting

Many times our first impressions change as we cultivate acquaintance, but if we meet only once that first impression stays with us, whether it is good or bad.

The truth of this statement was proven to us not long ago as we took a short trip through Eastern Kansas. It seemed to us the country never looked more beautiful. We saw hundreds of well tilled fields, many seemingly perfect stands of alfalfa, and much live stock in the pink of condition. In the sixty-mile trip there was only one thing that marred the beauty of the landscape, but it was a serious mar to the locality where found. In one stretch of a few miles, it seemed to have been the fad a few years ago to permit the painting of all kinds of advertisements on the farm buildings. What remained of these advertisements could be seen a long way off and detracted greatly from the scenic effect. As we drew nearer it could be seen that the general effect on these farms was in keeping with the practice of using the barns as signboards. The fences needed repairing, doors were off the buildings, the stock was a mixture, and nothing seemed to harmonize with the beauties of Nature. And it had its effect in lowering the value of that particular section in our estimation. Ever as we think of

that locality will come to our mind the picture of those faded, partly obliterated signs, and the general poor appearance of the farms of that neighborhood.

Such slipshod methods are bound to leave a lasting impression on all who pass that way and they will think of it as a poor part of the country when in reality it is a good section owned by those who are careless and shiftless and without pride in themselves and their surroundings.

What a contrast these buildings were to the near-by modest but neat and well-painted structures of neighboring farmers. And the impression received by the stranger is bound to be that there is as much difference between the men owning the two classes of buildings as between the buildings themselves.

Preserve Wash Material Colors

It might be well to take precautions to "set the colors" in gingham and other fabrics at the time the shrinking is done, before making them into new spring garments. Any chemical substance used to set colors is called a mordant. Common household mordants are as follows: Brine, sugar of lead, alum and vinegar. They may be used in the following proportions:

To one gallon of water add one-half cup mild vinegar, or two cups salt, or one tablespoonful powdered alum, or one tablespoonful sugar of lead (poison).

In most cases allowing the material to soak several hours in the mordant is sufficient, although with salt and vinegar solution no harm is done if the material soaks over night. The material should be thoroughly dried before being washed, and always hang in the shade. Vinegar is best for pinks, brine for blacks and reds, sugar of lead for blues and browns, and alum for greens, lavenders, purples, etc.

To freshen colors, soak garment in a weak solution of borax before washing. A little ox-gall in the borax water will help keep weak colors bright.—MIRIAM M. HAYNES, Colorado Agricultural College, Fort Collins, Colo.

Strawberry Short Cake

2 cupfuls flour
4 teaspoonfuls baking powder
1/2 teaspoonful salt
1/2 cupful milk
1/2 cupful butter

Mix dry ingredients, sift several times, work in butter with tips of fingers, and add milk gradually. Toss on floured board, divide in two parts. Pat, roll out, and bake 12 minutes in a hot oven in buttered pie or cake tins. Split and spread with butter. Sweeten berries, place on back of stove until warmed, crush slightly and spread between and on top.

Cream Sauce for Short Cake

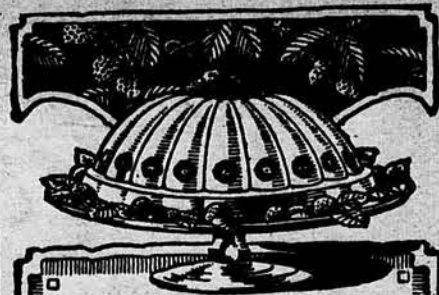
1/2 cupful thick cream
1/2 cupful milk
1/2 cupful powdered sugar
1/2 teaspoonful vanilla

Mix cream and milk, beat until stiff, with egg beater, then add sugar and vanilla.

Cookies

1/2 cupful butter
1 cupful sugar
2 eggs
1 tablespoonful milk
2 1/2 cupfuls flour
2 teaspoonfuls baking powder
1/2 teaspoonful lemon extract
1/2 teaspoonful grated nutmeg

Cream butter, add sugar, egg well beaten, milk, and extract. Mix and sift dry ingredients and add these. Chill before rolling and keep the bowl of mixture in cool place while rolling.



Knox Strawberry Bavarian Cream

1/2 envelope Knox Sparkling Gelatine.
1 tablespoon lemon juice. 1/4 cup cold water.
1/2 cup sugar. 1 cup strawberry juice and pulp.
1 1/2 cups heavy cream, beaten until stiff.

Soak gelatine in cold water five minutes, and dissolve by standing cup containing mixture in hot water. Strain into strawberry juice mixed with lemon juice. Add sugar, and when sugar is dissolved set bowl containing mixture in pan of ice water and stir until mixture begins to thicken; then fold in cream. Turn into wet mold lined with strawberries cut in halves, and chill. Garnish with fruit, selected strawberries and leaves. A delicious cream may also be made with canned strawberries.

KNOX SPARKLING GELATINE (Granulated)

is used by millions of wise and thrifty housewives to create a variety of Desserts, Salads, Puddings, Ices and Candies.

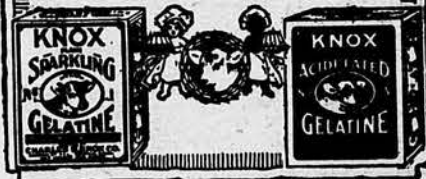
A package makes four pints; four times more than "flavored" packages.

How to make the most delicious desserts and tempting dishes is explained fully in our

New Recipe Book

Sent FREE for your grocer's name. Enclose 2c stamp for a pint sample.

Chas. B. Knox Co., Inc.
432 Knox Ave., Johnstown, N.Y.



O.K. HAY PRESS

Two Men Can Operate With or Without Engine Latest Improved Larger Capacity Best and Cheapest Use Your Engine if Desired.

Write for illustrated catalogue describing this and our Horse Power Presses, Engines and Pileless Scales. Address SCOTT HAY PRESS CO. 1219 Union Ave. Kansas City, Mo.

DAISY FLY KILLER



placed anywhere, attracts and kills flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't tip or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for \$1.

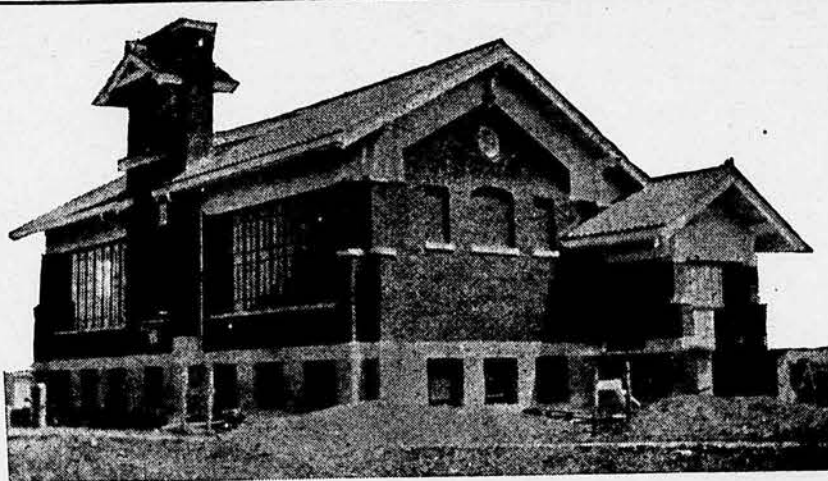
HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

— OTTAWA —
Business College
OTTAWA, KANS. CATALOG FREE

ROPP'S NEW CALCULATOR A BOOK OF GREAT VALUE TO EVERY FARMER FREE

This book is the greatest time and labor saver ever offered the American farmer. It is also a great money-saver and money-maker. It shows you how to accurately and instantly figure out any problem that may come up—how to figure estimates, wages, taxes and interest on any sum of money, any number of days, at any rate—tells bushels and pounds in loads of grain; correct amount at any price; weight and prices of live stock; contents of cribs, wagons, bins, etc. It is a "lightning calculator" always ready when you want it. Bound in red cloth covers, 160 pages, pocket size. One copy of this famous book free to all who send \$1.00 for a twelve months' subscription to

KANSAS FARMER
TOPEKA, KANSAS



THIS artistic as well as convenient building houses Oakland School, District 17, Allen County. It has just been completed and cost \$12,000. Above the front door has been placed a 4x28 steel plate bearing the words, "Standard School," inlaid in gold-leaf.

Few single districts can afford as expensive buildings as this, but if they would do as has evidently been done here—provide the very best possible in the way of educational facilities—their efforts would be rewarded by increased interest on the part of the boys and girls.

RELIABLE POULTRY BREEDERS

LEGHORNS.

PURE-BRED BUFF LEGHORN EGGS, \$4 hundred. Jessie Crites, Florence, Kan.

S. C. W. LEGHORN EGGS CHEAP. D. W. Young strain. G. D. Willems, Inman, Kan.

SINGLE COMB BUFF LEGHORNS—Thirty eggs, \$1.75; 100 eggs, \$4. J. A. Reed, Lyons, Kan.

PURE-BRED SINGLE COMB BROWN Leghorn eggs, \$3 per hundred. Mrs. F. E. Tonn, Haven, Kan.

ROSE COMB BROWN LEGHORN EGGS—Heavy laying strain. M. E. Hoskins, Fowler, Kan.

PURE SINGLE COMB BROWN LEGHORN eggs, hundred, \$3. Eighth year. Mrs. D. A. Wohler, Hillsboro, Kan.

SINGLE COMB BROWN LEGHORN eggs, \$3 per hundred. H. M. Schoepflin, Route 1, Osage City, Kan.

ROSE COMB WHITE LEGHORNS, 200-egg strain. Won 155 prizes. Best eggs, \$1.50 fifteen, \$5 hundred. Ruthie McFarland, Sedalia, Mo.

S. C. B. LEGHORNS, 50c. FIFTEEN: Barred Rocks, 75c. fifteen; W. I. Runner Ducks, \$1, twelve; White Guineas, \$1, sixteen. Mrs. David Johnson, Roxbury, Kan.

FOR SALE—PRIZE WINNING SINGLE Comb White Leghorns, \$2 to \$25 each. Eggs, 5 cents. Chicks, 10 cents. Clara Colwell, Smith Center, Kan.

WINTERLAY S. C. WHITE LEGHORNS—Bred for egg production exclusively. Day-old chicks. Hatching eggs. Barlow & Sons, Kinsley, Kan.

SINGLE COMB WHITE LEGHORNS EXCLUSIVELY. Eggs, fifteen, \$1; hundred, \$5. Fertility guaranteed. Sunnyside Egg Farm, Box C, Hallowell, Kan.

SINGLE COMB WHITE LEGHORN EGGS for hatching, \$4 per hundred, \$1 per setting. Heavy laying, high-scoring stock. Harry Gliven, Madison, Kan.

PURE SINGLE COMB WHITE LEGHORN eggs. Young-Francis-Yesterland strains. Fifteen, \$1; hundred, \$4. Chicks, hundred, \$10. Satisfaction guaranteed. C. G. Cook, Lyons, Kan.

ROSE COMB BROWN LEGHORNS EXCLUSIVELY. Eggs, per setting of fifteen, \$1; per fifty, \$2.50; per hundred, \$3.50. Twenty years careful selection. P. H. Mahon, Route 3, Clyde, Kan.

BABY CHICKS.

YOU BUY THE BEST BABY CHICKS, guaranteed, at Colwell's Hatchery, Smith Center, Kan.

PURE-BRED ROSE COMB RED BABY chicks, 10c each. Mrs. C. E. Hill, Toronto, Kansas.

REDS, BARRED ROCKS, BUFF ORPINGTONS from free range flocks. \$15 per hundred. L. E. Castle, 1920 W. Maple, Wichita, Kan.

BABY CHICKS FROM THE WORLD'S best S. C. W. Leghorns. Trap-nested stock, with record of 200 and 250 eggs. Hundred, \$12.50 up to 500. Fifteen eggs, \$1.50. Order from this ad. Bellevue Poultry Farm, Scammon, Kan.

WYANDOTTES.

"BEAUTIFULITY" SILVER WYANDOTTES, \$1.50 to \$5. Eggs, fifteen, \$1.50; hundred, \$6. Mrs. Edwin Shuff, Plevna, Kan.

WHITE WYANDOTTE EGGS FROM prize winning stock, \$1.80, thirty; \$4.50 hundred. Mrs. Will Beightel, Holton, Kan.

WHITE WYANDOTTES, GUARANTEED stock. Pen 1, pullets, fifteen eggs, \$2; Pen 2, hens, thirty eggs, \$3; utility flock, \$4 per hundred. Effie Acheson, Palco, Kan.

PURE-BRED R. C. WHITE WYANDOTTE eggs. Choice birds, good laying strain; fifteen, \$1; hundred, \$4.50. G. A. Berglund, Route 4, Clay Center, Kan.

WHITE WYANDOTTES—EGGS FROM birds of best strain in state. These are extra choice. Fifteen, \$1; 100, \$5. I. B. Pixley, Wamego, Kan.

ROSE COMB WHITE WYANDOTTES—Show quality and heavy egg strain, fifteen eggs, \$1; fifty, \$2.50; hundred, \$4.50. Safe arrival and satisfaction guaranteed. Garland Johnson, Mound City, Kan.

DUCKS AND GESE.

ENGLISH PENCILLED RUNNER DUCKS—Eggs, twelve, \$1; hundred, \$5. Frank Hall, Toronto, Kan.

PURE WHITE RUNNER DUCKS—STOCK and eggs for sale. Satisfaction guaranteed. Mrs. H. E. Halle, McCune, Kan.

LARGE WHITE PEKIN DUCKS—GOOD layers, \$1 per 12; \$1.75 per 24 eggs. E. Bauer, Beattie, Kan.

MAMMOTH WHITE PEKIN DUCK EGGS, prize winners, good layers, large white eggs, \$2 per eleven. Miss Greta Dillon, Grant City, Mo.

BRAHMAS.

LIGHT BRAHMAS—FIFTEEN EGGS, \$3. Hens, \$2. Nicholas Bach, Hays, Kan.

LIGHT BRAHMAS, REDS, ROCKS, WYANDOTTES, guineas, Toulouse geese. Stock and eggs. Emma Ahlstedt, Roxbury, Kan.

DARE BRAHMAS—FIFTEEN EGGS, \$3. Pullets or hens, \$2 each. Cockerels, \$5. Nicholas Bach, Hays, Kan.

WARD'S LIGHT BRAHMAS, BARRED Rocks, S. C. W. Leghorns. Send for catalog. Nine yards mated. W. H. Ward, Nickerson, Kan.

LANGSHANS.

BLACK LANGSHAN, BARKER'S strain. Eggs \$1.00 15, delivered. J. Medford, Wheatland, Okla.

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EGGS AT SACRIFICE PRICES AFTER May 22nd from our six grand pens; Rose Comb Reds mated to roosters costing \$15.00 to \$35.00; 15 eggs, \$1.50; \$30, \$2.50; 50, \$4.00. Pure-bred range flock \$3.50 per 100. Also good hens and roosters cheap. Catalog. W. R. Huston, Americus, Kan.

ROSE COMB RHODE ISLAND REDS—I have bred Reds for ten years. I have them as good as the best at live and let live prices. Eggs, \$1.25 to \$4. Big mating list free. Redview Stock and Poultry Farm, A. S. Fellers, Prop., Hays, Kan. (Secretary of the Golden Belt Poultry Breeders' Assn.)

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PARTRIDGE COCHINS—ALL FULL-blooded stock, prize winners. Fifteen eggs, \$3. Hens or pullets, \$2 each; cockerels, \$4 each. Nicholas Bach, Hays, Kan.

FARM AND HERD.

In Potter County, Indiana, where they have an organization known as the "300-pound-a-year Cow Club," 67 head of cows in 1915 produced 300 pounds or more butter fat, and returned to their owners \$92.73 per head, after all feed and other expenses were paid.

At Midland, Tex., in the heart of the range cattle territory, a move has been started to establish farm dairying. A circular has been issued there by promoters of the industry, in which ten reasons are set out why such an industry there would pay. In recent years great quantities of forage grain feeds, also cane, have been raised, which are especially suitable for milk cows. These feeds cannot be shipped out and sold to a good advantage.

Herman Groninger & Sons, of Bendena, Kan., have gained the honor of being one of the most prosperous and the oldest breeders of Poland Chinas in Kansas. Forty-one years Mr. Groninger has been breeding and registering Poland Chinas. During this time he has furnished stock for herd material for a large number of herds. At the head of the Groninger herd are Rexall, Shamrock and Big Bod 2nd, three as good breeding boars as can be found on one farm. These hogs, mated to an extra good lot of brood sows, have produced 140 head of very fine pigs, averaging seven pigs to the litter. Mr. Groninger has given special attention to seed corn. Last year he produced corn that made an average of more than eighty bushels per acre and has proven very profitable. A feature of the Poland China herd at this time is a splendid lot of extra good fall boars that will be reserved for a fall sale.

Geo. C. Tredick, of Kingman, Kan., owner of Tredick Farm herd of registered Holsteins, writes that he has the best lot of calves that he has ever raised. This is one of the Kansas herds of Holsteins that is making a record as profit producers. The herd is made up of representatives of the great producing families of the Holstein breeds. Mr. Tredick reports the sale of two very fine young bulls to head herds. One was sold to Mr. J. M. Curtis, of Stafford, Kan., and the other to Mr. C. Spady, of Hooker, Okla. Both of these young bulls are richly bred and fine individuals, and are backed by records that make herd headers.

Susie Nell has claimed May 23 as the date for a public sale of horses and mules; also jacks and jennets. The offering will consist of one mammoth jack, eleven mammoth jennets, thirty-one head of horses and mules. Holstein cows and farm implements. The sale will be held at the farm near St. John, Kan.

A. J. Swingle, of Leonardville, Kan., is making a great success with his big type Poland China hogs. Mr. Swingle has some of the largest Poland China sows that can be found on any one farm in Kansas. They have been mated with three good boars. One of the herd boars worthy of mention is Gritter's Surprise by Long Surprise by Big Surprise, and his dam was Mollie Fair by Long Prospect. Jumbo No. 71550 by A Wonder Jumbo is a very promising two-year-old boar. This hog came from the famous herd of John B. Lawson. Baron Again No. 75769 by Baron by Big Wonder is making good as a breeder. He came from the herd of E. Gritter. He will be two years old in September, and will weigh right at 600 pounds, just in breeding condition. Mr. Swingle has from these boars and others, seventy-seven spring pigs, and they are all doing well. One feature of the herd is a number of extra large fall yearling gilts that promise to grow into 600-pound sows.

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Roosts Should be Cleaned

IT PAYS to clean off the roosting boards every morning if you can possibly get the time. It is hard where one has a small plant and has to go to work every morning at such a time, for it is not possible always to do this, but on the other hand it is a comparatively easy task if it is done every morning. When the droppings are permitted to accumulate, they soon pile up so high that it is really quite a task to get them off the boards and into a box or basket. If you have a short-handled hoe and a convenient basket you can go through several pens in a short while. When you do this you clean out everything that is foul and ill-smelling in the place. The chicken house need not have an unpleasant odor if you will attend to things in a proper manner. If this not done the chickens have to roost directly over the fumes of an accumulation of manure. This is bad for them, and will soon have affliction, the cause of which you can lay directly to the fouled air in the house. If you will set a time each morning for this work you will find that the unpleasant task of poultry keeping will soon become an easy one, for a small half basket will take care of the droppings of seventy-five hens, and the time consumed will not be over ten or fifteen minutes at the most.

Value of Charcoal for Poultry

If you are not in the habit of furnishing your birds with a supply of charcoal, you will do well to purchase a sack and place some in hoppers within reach of all. While there are no healing values in charcoal it is very essential in absorbing noxious gases which arise from various foods given the birds. Where there is bowel trouble the chickens will eat greedily of charcoal if it is within reach, and it would seem that they know what they want if they can get to it. The charcoal will check the trouble and harden the droppings. Charcoal can be purchased in sacks of fifty or a hundred pounds. It comes pulverized for use in a mash, or broken to the size of cracked corn to be mixed with a scratch food, or fed alone in hoppers. This is not expensive and a sack of fifty pounds will last a flock of a hundred hens a long time. It is well to keep this on hand, for one will find that the birds are kept in better condition where they have charcoal before them all the time. Where a moist mash is used, the pulverized charcoal can be added to the mash, say a handful to a dozen hens. This should be fed in the mash a couple of times a week. The guaranteed charcoal can be fed in the scratch feed about once a week. You can easily observe whether the birds are eating it or not. If you find some left over don't feed any more until that is eaten. If you want to make your own charcoal, you can easily do it by making a bonfire of brush or logs and quenching the fire before it is all burned out by throwing earth on it. The refuse can be scooped up, placed in boxes, and used when desired.

Cure for Feather-Eating Habit

Feather-eating is a very bad habit for the chickens to get into. It is sometimes caused by the desire of the birds for meat. If you will get some meat bones at the butcher's and hang them where the birds can pick at them, it will help to break up the trouble. Where the hens are bare in spots from the mischief done already, it will be well to rub on some carbolated vaseline. This will heal up the small sores where the feathers have been pulled out, and also stop the birds from picking at this spot. If the fowls have picked any particular one very badly she should be taken out of the pen and isolated till her feathers have grown again. Give the birds exercise by scattering their grain in deep litter and making them work for what they get, for it is the idle ones that get into this habit. If you feed a mash it is well to salt it pretty freely as this will help satisfy the abnormal taste for feather-eating.

Hens Save Much Waste

We often think that many farmers do not fully appreciate the value of poultry on a farm. Some think they eat more than their produce is worth, but

this is a mistake because the farmer doesn't keep an account of what the hens produce. He eats eggs once a day and perhaps oftener. If he had to pay out the cash for his eggs, he probably would realize that his hens are saving him some money. He probably eats chicken once a week or oftener. If he had to pay out real money for this meat, or its equivalent, he probably would be convinced that his purse would be lighter if he had no chickens to depend upon for his Sunday dinner.

Another thing the farmer should remember to the credit of the hen is the work she does as a scavenger around the farm. She goes around and picks a grain here and a grain there that would otherwise prove a complete loss to him, for nothing else can gather the scattered grains on a farm like a flock of fowls. On many farms the hens get their own living altogether by picking up the waste material. The hen should be credited with all that she gathers as pure profit, for otherwise it could never be utilized.

Duck Hints

In duck raising three things are essential to success: frequent feeding, plenty of good drinking water and abundance of sand or other grit. If incubators are not used, hens are better than ducks to incubate the eggs, and the best practice is to take the ducklings away from the hens as soon as hatched, keeping them in a covered box in a warm room, or in a regular brooder until feathered. During the day they should be kept in a movable pen or fresh grass. Don't let the ducklings puddle in the water or they are liable to get soaking wet, and dampness is more fatal to young ducks than to young chickens. The drinking water should be given in a patent drinking fountain where they can get enough water to drink, but not any to play with.

Turpentine and Kerosene Useful

Turpentine and kerosene will kill every insect and worm it touches. If a louse survives these oils, it is safe to say that they never touched him. By making a warm mash of bran and corn meal and adding a teaspoonful of turpentine to a mess for twenty-five fowls, it will give the gapeworm plenty of grief if present. These substances should be constantly kept on hand and used quite freely the whole year through, and without stint in the season of vermin activity. It can be given internally in consistent doses, externally applied, or used as an insecticide on roosts, nest boxes, and everywhere where lice or mites are liable to be. These substances in the well-regulated poultry house, are as essential as pure air and wholesome food.

This is the season of sudden storms, and the chickens ought to be penned up when a storm is raging. The exposure to the wind and rain will cause the chicks such a set-back that they will not recover from it for several days.

If you are selling dressed poultry, be careful not to break the skin, as this greatly mars the appearance. They can be made to look plump, after being picked, by first dipping them in water almost boiling and then in cold water. They should be hung in a cool place and allowed to remain several hours.

At the present high price of feed it costs from fifty to sixty cents to produce a laying hen. This is from the time the chick begins to eat until she lays her first egg. Feed enough, but never let any go to waste. Strict watch should be kept on the feed bins and no waste permitted, for this often spells the difference between profit and loss in the poultry business.

Because a hen is non-sitter, it does not imply that she is a better layer than the sitter or as profitable. The non-sitter thrives best in the spring and summer, and is an active forager. There is a time when she takes a rest, even if she does not sit. She may lay more eggs in the summer than the sitter, but in the long run, the sitter overtakes her, and at the end of the year, will have laid as many eggs, as well as produced one or two broods of chicks, giving fully as much profit and being more contented in confinement.

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MEN AND WOMEN WITH SELLING ability earn \$3 to \$10 a day. Staple goods and straight business proposition. C. W. Carmen, Department D, Merchants Bank Bldg., Lawrence, Kan.

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WE WILL PAY YOU \$120.00 TO DIS-tribute "Successful Farming" in your locality. Money making book for farmers. Write at once for our new Institute plan. Sixty days' work or less. No money required. International Institute, 423 Winston Bldg., Philadelphia.

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U. S. GOVERNMENT LAND OPENING—Over 500,000 acres fruit, farm and dairy land in Colville Indian Reservation, Wash-ington, will be thrown open to settlement this summer. Our new book, "Description of Colville Indian Reservation," copyrighted by Smith & McCrea, publishers, gives full information and map and shows how to lo-cate any piece of land without the assist-ance of a locator. Postpaid, \$1.00 Smith & McCrea, 533 Eagle Building, Spokane, Wash.

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GUERNSEYS OF ALL KINDS, ESPE-cially high grade heifers and registered bulls. Klement Bros., our representatives, will drive you to the different breeders. This service furnished to all purchasers by Jefferson County Guernsey Breeders' Asso-ciation. H. A. Main Secy., Fort Atkinson, Wis.

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ABSOLUTELY PURE RECLEANED SU-dan seed, well matured and very fine for planting or sowing. Less than fifty pounds, 10c; more than fifty pounds, 8c per pound. Cash with order. J. W. Bowiby, Chat-tanooga, Okla.

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BACK AGAIN! THE IMPROVED, BIG, creeping, hardy Bermuda grass, bigger and better than ever. One sack, \$1; six sacks, \$5. Rates on larger orders. Inquiries solic-ited. "Bermuda" Mitchell, Chandler, Okla.

SILOS.

MONOLITHIC SILO BUILDER, BUILDS a reinforced concrete silo on your ground. Manufactures every detail from chute to window. Any farmer can operate it. Only ten days to have complete silo set up and in use. Is absolutely a great money saver. Details, photographs and experiences of others sent you for the asking. Address E. H. Euler, 114 Kansas Ave., Topeka, Kan.

MISCELLANEOUS.

FOR SALE—24-INCH BELLE CITY grain separator in perfect order. Handled easily by 8-16 engine. W. A. Wood, Elm-dale, Kan.

A SUCCESSFUL MANURE AND GRAVEL loader is now being built and marketed by the Iowa Manufacturing Company of Ban-croft, Iowa.

DO YOU NEED A WAGON OR BUGGY? We have some high grade wagons and buggies at a Kansas point for sale cheap. All new and up-to-date stock. Write us for circular and prices. Miller Wagon Co., Edina, Mo.

PATENTS.

PATENTS PROCURED. INQUIRE ABOUT our \$100 cash prize. Free advice. Free search. Free official drawings. Capital Patent Co., Dept. E, Washington, D. C.

BEE SUPPLIES.

FOR SALE—BEE SUPPLIES. ROOT'S Good. Send for catalog. O. A. Keene, 1600 Seward Ave., Topeka, Kan.

LUMBER.

LUMBER! BUY FROM US. HIGH GRADE. Bottom prices. Quick shipment. Keystone Lumber Co., Tacoma, Wash.

SITUATION WANTED.

YOUNG MAN, SINGLE, WANTS STEADY employment on a farm; experienced. Ad-dress Ezra Asbill, Grimes, Okla.

When Writing to Advertisers, Please Mention Kansas Farmer.

JERSEY CATTLE.

SEVENTY HEAD REGISTERED JERSEYS.



Forty cows and thirty heifers for sale. 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

Must Reduce Herd

Forty head of registered cows, heifer and bull calves for sale. Of the best blood lines among the breed.

I am a member of the Southwest Jersey Cattle Breeders' Association.

SWEET SPRING STOCK RANCH

Box 241 Monett, Missouri

Brookside Farm Jerseys

Registered Jersey bulls for sale. Flying Fox and Eminent breeding, good enough to head any herd. Also a few females.

THOS. D. MARSHALL, SYLVIA, KANSAS

LINSCOTT JERSEYS

Kansas' First Register of Merit, Estab. 1878. Bargain in month-old bull calf from one of the heaviest milkers in our herd. Flying Fox blood. Fully guaranteed. A beauty. \$25.00.

R. J. LINSKOTT, HOLTON, KANSAS

SUNFLOWER HERD JERSEYS

For Sale—Two yearling bulls and a few cows and heifers. All sired by Coster's Splendid. Imported and a grandson of Golden Jolly.

H. F. ERDLEY - HOLTON, KANSAS

Sunset Jersey Cattle Herd

Will offer at private sale fifty head cows, heifers, bulls, calves. The famous Blue Belle-Golden Rosebays. Send for special circular before buying elsewhere. Bargains.

Ennis Stock and Dairy Farm, Horine, Mo.

(Just south of St. Louis)

SMITH'S JERSEYS

For Sale—White Hall's Baron 138966, solid color, 26 months, fine individual. Sire Blue Boy Baron 99918; dam White Hall Duchess 299731, used on a few of our best cows. Females all ages and three bull calves. \$25 up.

S. S. SMITH, CLAY CENTER, KAN.

REDHURST JERSEYS

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

REDMAN & SON - TIPTON, MISSOURI

FOR SALE—Nine registered Jersey cows and heifers. Excellent unrelated bull, Oakland's Sultan 2d.

PERCY LILL - MT. HOPE, KANSAS

FOR SALE—Three registered Jersey bulls, richly bred.

L. E. Pendleton - Dodge City, Kansas

TAMWORTH SWINE.**TAMWORTH HOGS**

My specialty is pigs at weaning time. Male pigs \$9 each
Sow pigs 10 each
You can take one or more as you like at the price.

F.M. Hartzell, Carthage, Ill.

Breeders' Directory

PERCHERON HORSES.

M. E. Gideon, Emmett, Kan.

ANGUS CATTLE.

Geo. A. Deltrich, Carbondale, Kan.

Geo. McAdam, Holton, Kan.

SHORTHORNS.

C. H. White, Burlington, Kan.

HOLSTEINS.

C. E. Bean, Garnett, Kansas.

DORSET-HORN SHEEP.

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

JERSEY CATTLE.

J. B. Porter & Son, Mayetta, Kan.

MULEFOOT HOGS.

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

BERKSHIRE HOGS.

Seventy choice bred Berkshire sows, to farrow every week from March 1 until June. Bred to as good boars as the breed has. Cholera immune.

E. D. KING - BURLINGTON, KANSAS

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

FARM AND HERD

G. C. Wheeler, Live Stock Editor
W. J. Cody, Manager, Stock Advertising.
O. W. Devine, Representative

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CLAIM SALE DATES.

Herefords.

Oct. 7—J. O. Southard, Comiskey, Kan.

Poland Chinas.

Oct. 18—W. B. Brown, Perry, Kan.

Oct. 13—Dr. J. H. Lomax, St. Joseph, Mo.;

sale at farm near Leona, Kan.

Oct. 19—H. B. Walter, Edinham, Kan.

Oct. 24—Leonard & Russell, St. Joseph, Mo.

Oct. 25—U. S. Byrne, Saxton, Mo.

Oct. 26—Walter W. Head, St. Joseph, Mo.

Oct. 20—James Arkell, Junction City, Kan.

Nov. 1—Fred B. Caldwell, Howard, Kan.

Nov. 4—L. R. Wiley, Sr., Elmdale, Kan.

Durocs.

Nov. 2—Lant Bros., Dennis, Kan.

T. T. Langford & Sons, of Jamesport, Mo., owners of one of the great herds of big-boned Spotted Polands, reports a fine lot of spring pigs this year that are growing out fine. They also report a good demand for Spotted Polands at prices ranging from \$25 for pigs to \$100 for hogs of breeding age. Their herd is drawn upon heavily for breeding stock by farmers and breeders from a number of states.

E. E. Heacock & Son, of Hartford, Kan., are among the live boosters for improved live stock on Kansas farms. Their specialty is high class registered Shorthorn cattle, and their herd is one of the good ones in this state. The best blood lines of the breed will be found in their herd, and they are breeding a type that is proving to be the profitable kind.

F. C. Gookin, of Russell, Kan., is among the O. I. C. breeders who have succeeded in building up a herd of the right type. For foundation stock, he purchased the best in breeding and in individuals that he could find, and has adhered to that rule for years when buying new blood for his herd. At the present time his herd is headed by Dude 3rd 28887, a prize winner at Topeka State Fair in 1914. He was sired by King, another winner that traces to the Grand champion, St. Louis, 1904. The second boar in service in the herd is White King 36445 by Chief of All and out of Minnehaha. Chief of All is the sire of the great boar, International Boy. The sows in this herd are equally well bred. Many of them coming direct from the most noted herds in existence.

According to a Washington dispatch, the House has passed the agricultural appropriation bill carrying a total \$24,500,000. The sum includes \$50,000 for experiments in manufacture of dyestuffs, \$2,500,000 for foot and mouth disease; \$250,000 for eradication of coyotes and other predatory animals in western states; \$200,000 increase in appropriations for fighting cattle ticks; \$250,000 to eradicate citrus canker; \$200,000 increase in the appropriation for fighting hog cholera and \$50,000 for extension of the weather bureau service to the Caribbean Sea. Attached as riders are three bills providing for a tax on cotton futures, for the supervision of the grading of grain carried in interstate commerce, and for a permissive system of licensing warehouses for cotton, wheat and other staples.

S. W. Cooke & Son of Maysville, Mo., owners of one of the very high class herds of Holsteins, report their herd doing well. This is one of the herds that is drawn upon heavily for breeding stock. From May 1, 1915, to May 1, 1916, this firm sold over \$12,000 worth of young breeding stock and a good share of it was purchased by Kansas breeders.

Fred B. Caldwell of Howard, Kan., has claimed November 1 for fall sale of Poland China boars and gilts. Mr. Caldwell has 125 spring pigs, mostly sired by Caldwell's Big Bob by Big Bob Wonder. This hog is proving a great breeder and will probably be shown at the leading fairs this fall. Mr. Caldwell has a splendid lot of herd sows on the farm and the way they are handled they have returned a nice profit.

Ira Romig, owner of Bonnie Brae Holstein herd, left Saturday for Wisconsin to select a carload of Holstein cows from the best herds in that state. The increased demand for dairy cows on account of the Kansas Farmer Dairy Club and the limited number of good cows that are offered for sale, has caused some trouble in securing cows for club members. Mr. Romig expects to select cows that will meet all requirements. He will ship them by express and expects to have them on his farm about May 20.

O. E. Torrey of Towanda, Kan., has just returned from Wisconsin, where he bought five carloads of registered and grade Holstein cattle, both cows and heifers. Mr. Torrey has had great success with Holstein cattle. He breeds both registered and high-grade cattle. He has now on hand about 250 head.

E. L. Barrier of Eureka, Kan., has probably the best herd of Angus cattle in Kansas and is making a great success, but this is only one part of his farm interests. He has one of the best herds of Poland China hogs in Greenwood County and some sows and spring pigs as good as can be found on any farm. At the head of the Poland China herd is King Jumbo by Elmore Jumbo. King Jumbo was the first prize pig at the Topeka fair last year. Mr. Barrier has sows that have litters by Caldwell's Big Bob, Orphan Boy and Big Hadley Jr. About forty spring pigs that are very promising prospects are on the farm.

Harley A. Martin, secretary of the Red Polled Cattle Club of America, Gotham, Wis., has prepared a booklet of 116 pages on Red Polled "Facts and Figures." It contains a condensed history of the breed,

HOLSTEIN CATTLE.

CLYDE GIROD, At the Farm.

HOLSTEIN FRESIAN FARM, TOWANDA, KANSAS

Pure-bred and high grade Holsteins, all ages. Largest pure-bred herd in the Southwest, headed by Oak De Kol Beesie Ormsby 156789, a show bull with royal breeding.

Pure-bred bulls, serviceable age, from A. R. O. dams and sires. A grand lot of pure-bred heifers, some with official records. Choice, extra high grade cows and heifers, well marked, heavy springers, in calf to pure-bred bulls, constantly on hand. High grade heifer calves 6 to 10 weeks old, \$25. Bargains. Send draft for number wanted. All prices f. o. b. cars here. Inspect our herd before purchasing. Write, wire or phone us.

GIROD & ROBISON.

TORREY'S HOLSTEINS

High grade cows and heifers and registered bulls. The best breeding. Call and see them.

O. E. Torrey - - - Towanda, Kansas

**Regier's Holsteins**

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

G. REGIER & SONS, WHITEWATER, KAN.

BUTTER BRED HOLSTEINS

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

J. P. MAST - - - SCRANTON, KANSAS

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.

CORYDALE FARM HERD

Jewel Paul Butter Boy No. 94245 One of the best bred bulls in the state. We offer three bulls ready for service out of good producing dams.

L. F. CORY & SON, Belleville, Kansas.

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

HOLSTEINS

If you want to buy Holstein calves, heifers or cows, at reasonable prices, write to the Whitewater Stock Farm, Whitewater, Wis.

Alb. M. Hanson, Prop.

RAISING Registered Holsteins. Trying hard to keep herd healthy. Living close to Nature. Cows calving regularly.

TREDICO FARM

Route 2 - - - KINGMAN, KANSAS.

23- HOLSTEIN-FRIESIAN BULLS -23

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

Breeders for Thirty Years.

MOKAY BROS., Waterloo, Iowa

Golden Belt Holstein Herd

Canary Butter Boy King No. 70508

in Service.

Herd has won more prizes from Holstein-Friesian Association for yearly production than any herd in Kansas. Young bulls for sale from heavy producing cows.

W. E. BENTLEY, MANHATTAN, KANSAS

HOLSTEIN BULLS

For Sale—A number of very fine bull calves, sired by Wauseona King Korndyke and out of cows that produce 80 pounds of milk per day. Price reasonable.

T. M. EWING, INDEPENDENCE, KANSAS

BONNIE BRAE HOLSTEINS

Will have a carload of choice Holsteins from best herds in Wisconsin about May 20. They will be suitable for Kansas Farmer Dairy Club.

IRA ROMIG, STATION B, TOPEKA, KAN.

a statement concerning the organization of the club, articles relating to the adaptation of the breed, and detailed figures setting forth Red Polled accomplishments in both slaughter tests and at the fall. The booklet is to be had upon request.

Sullivan Bros. at Moran, Kan., are among the successful breeders of Poland China hogs and Shorthorn cattle. At the head of the Poland China herd is Jumbo Tim by Ferguson's Big Tim and out of a Jumbo dam. They have saved sixty spring pigs that are fine prospects. They also have a number of yearling boars sired by Long Scamp by Long Wonder. The Shorthorns number about thirty-five head of cows and heifers and are headed by a pure Scotch bull of the very desirable type. A feature of the herd is the young bulls eight to ten months old that are herd header prospects.

J. R. Ely of Marion, Kan., is making a success with his herd of Shorthorn cattle. He now has about forty head of Scotch topped cows and heifers. The herd is headed by a Scotch bull, Pride of Aulne, by Silver Knight. A feature of the herd is the number of spring calves. Each cow old enough to breed has a fine calf at her side.

T. M. Ewing of Independence, Kan., is making great success with his herd of registered Holstein cattle. Mr. Ewing has at the head of his herd probably one of as well bred bulls as can be found in the state. A number of cows in the herd have produced eighty pounds of milk per day. The real value of this herd sire is the extra fine lot of calves now on the Ewing farm, and among them are a fine lot of splendid young bulls.

J. J. Thorne of Kinsley, Kan., owner of one of the good herds of Shorthorn cattle, reports his herd doing well. His herd bull, Bampton Archer, is proving a fine breeder. A feature of Mr. Thorne's herd at this time is the choice lot of young stock, including a number of outstanding young bulls.

HOLSTEIN CATTLE.

F. W. ROBISON, Cashier Towanda State Bank

HOLSTEIN FRESIAN FARM, TOWANDA, KANSAS

Pure-bred and high grade Holsteins, all ages. Largest pure-bred herd in the Southwest, headed by Oak De Kol Beesie Ormsby 156789, a show bull with royal breeding.

Pure-bred bulls, serviceable age, from A. R. O. dams and sires. A grand lot of pure-bred heifers, some with official records. Choice, extra high grade cows and heifers, well marked, heavy springers, in calf to pure-bred bulls, constantly on hand. High grade heifer calves 6 to 10 weeks old, \$25. Bargains. Send draft for number wanted. All prices f. o. b. cars here. Inspect our herd before purchasing. Write, wire or phone us.

GIROD & ROBISON.

TORREY'S HOLSTEINS

High grade cows and heifers and registered bulls. The best breeding. Call and see them.

O. E. Torrey - - - Towanda, Kansas

**Albechar Holstein Farm**

Offers young bulls, bred cows and heifers for sale. Write for breeding, description and prices. Our herd absolutely from tuberculosis. Satisfaction guaranteed.

ROBINSON & SHULTZ, Independence, Kan.

IN MISSOURI

Prince Segis Walker Pietertje 123955 heads herd. Dam 30.13 pounds milk, test 5.97 per cent. Average of his dam, granddam and ten nearest dams of his sire, 29.75 pounds. Six of these are 30-pound cows. His five nearest dams all test over 4 per cent fat. Bulls 2 to 8 months old, \$150 to \$250. Always have some cows and bred heifers for sale. Nothing but registered Holsteins.

S. W. COOKE & SON, MAYSVILLE, MO.

CHOICE HOLSTEIN BULLS

Five registered bulls, out of A. R. O. cows. From 1 month to 2 years. Best breeding. Choice individuals. Price reasonable.

BEN SCHNEIDER, NORTONVILLE, KAN.

HOLSTEIN CALVES, fifteen-six months pure, \$20 each, crated. Also carload heifers 1 and 2 years old. Write us for Holsteins.

EDGEWOOD FARM, Whitewater, Wisconsin

BRAEBURN HOLSTEINS

A. R. O. Bull

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

REGISTERED HOLSTEIN BULL CALVES

Fine individuals and breeding.

PLEASANT VIEW FARM, Altoona, Kansas

HOLSTEIN BULLS, "REGISTERED"

Two ready for service. Smith & Hughes,

Breeders, Route 2, Topeka, Kansas.

HEREFORD CATTLE.**Hereford Bulls**

We can furnish carload of coming three-year-old Hereford bulls. Have both polled and horned. Good ones cheap. Address

J. C. HOPPER, Ness City, Kansas

Herefords and Percherons

Two choice Hereford bulls, 2 and 3 years old, well marked, both will make ton bulls. The 3-year-old weighs 1,950. Also some choice yearling Percheron stud colts.

M. E. GIDEON - EMMETT, KANSAS

WILLIAMS & SONS HEREFORDS

For Sale—Seven cows bred to drop calves in summer. Sixty bulls from 8 to 10 months old. Priced reasonably. Come and see us.

PAUL E. WILLIAMS, MARION, KANSAS

SOUTHARD'S MONARCH HEREFORDS

For Sale—Choice cows and heifers bred to Monarch No. 449994 and Repeater 66th. A few extra good herd bull prospects. Annual sale October 7, 1916. Send for catalog.

J. O. SOUTHARD - COMISKEY, KAN.

RED POLLED CATTLE.**RED POLLED BULLS**

TWENTY 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

RED POLLED CATTLE

FOR SALE—1915 bull calves by Rose's Grand Champion 17998, a 2,400-pound bull; also a few good cows and heifers.

AULD BROTHERS, FRANKFORT, KAN.

RED POLLED CATTLE

A few choice young bulls for sale, priced reasonably. T. A. Hawkins, Hill City, Kan.

DUROC JERSEYS.

BOARS! BOARS! BRED GILTS! Eighteen big husky boars, thirty bred gilts, a few tried sows. Crimson Wonder, Illustration II, Colonel, Good Enuff, Defender breeding. Either by or bred to sons of the greatest champions of the breed. Priced for quick sale. Immune.

G. M. SHEPHERD - LYONS, KANSAS

DUROC BOARS

For Sale—Five fall boars, sired by a son of Long Wonder and out of a B. & C. Col. dam. Price \$25. First check gets choice.

CHAS. STITH - EUREKA, KAN.

"VERIBEST" DUROC JERSEYS

Choice fall boars from 150 pounds up to \$20. One yearling boar at \$30. Good bone length and quality.

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

WANTED

Man to take charge of our herd of hogs. We have about one thousand brood sows and are raising hogs strictly for the market. Man must be thoroughly familiar with vaccination and capable of handling a large curation of hogs. Plenty of help furnished. Salary \$60 per month with house. **MILLER BROTHERS 101 RANCH** Oklahoma

HORSES AND MULES.**FAIRVIEW STOCK FARM**

Home of World's Grand Champion Jack, Kansas Chief 8365

More registered jacks and jennets than any farm in the West. Prices reasonable. Written and terms with every jack. Car guaranteed if stock is not as advertised. Young jennets bred to Kansas Chief. Reference, any bank in Oklahoma.

H. T. HINEMAN & SONS Kansas

Fifty-four extra heavy 3, 4 and 5 yr. old registered Percheron stallions ready for heavy stand; 38 growthy 2 yr. olds ready for some service and develop on 19 Belgian stallions. Just above Kansas City. **FRED CHANDLER PERCHERON FARM** Route 7, Charlton, Iowa. 47 Trains Daily

ANGUS CATTLE**EDGEWOOD FARM****ABERDEEN-ANGUS CATTLE**

I have for sale several good yearling and two-year-old bulls, also a few good cows. If you are looking for the good kind, write me or come and see them. They are offered at reasonable prices.

CLEMENTS, KANSAS
On Main Line of Santa Fe, 145 Miles West of Kansas City.

ABERDEEN ANGUS

We Offer For Sale Bulls and Heifers, Any Number, Single or Carload Lots.

These cattle have size and quality and are bred in the purple. See them at Lawrence, forty miles from Kansas City, on Santa Fe and Union Pacific railways.

SUTTON & PORTEOUS

Phone 8454. Route 6, Lawrence, Kan.

SHORTHORN CATTLE.**Tenneholm Shorthorns**

For Sale—A number of good bulls 8 to 18 months old. Some Scotch, others Scotch-topped. Some herd headers among them. Two outstanding ones. Can spare a few females. Farm one mile from town.

E. S. MYERS - CHANUTE, KANSAS

VAIL HERD SHORTHORNS

For Sale—Four Scotch-topped bulls, eight months old, all reds. They are extra good. Priced at \$100. First check gets choice.

W. H. VAIL - HUME, MISSOURI

SHORTHORN BULLS

For sale, two bulls, 10 and 11 months old; solid reds, sired by Brompton's Son. Price, \$125. First check gets choice.

SULLIVAN BROS. - MORAN, KANSAS

HILL'S SHORTHORNS

One red Shorthorn bull 11 months old, sired by Bettie's Albion 399451, pure Scotch, well built, weight between 800 and 700 pounds. Ready for service. Priced to sell.

C. E. HILL - TORONTO, KANSAS

Sycamore Springs Shorthorns

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

H. M. HILL - LAFONTAINE, KANSAS

RIVERSIDE SHORTHORNS

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

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

LOWMONT SHORTHORNS.

Branded Herd 351808 heads herd. Inspection invited. **E. E. Heacock & Son, Hartford, Kan.**

POLAND CHINAS

500 Head Registered Poland Chinas. Bred sows and bred gilts. 200 spring pigs. A few fall boars. Farmers' prices.

DEMING RANCH - OSWEGO, KANSAS

HENRY'S BIG-TYPE POLANDS

Fall boars, also gilts bred or open, sired by Mammoth Orange. Spring pigs by Mammoth Orange and Big Bob Wonder.

JOHN D. HENRY, Route 1, Leocompton, Kan.

POLAND CHINAS

For Sale—A few large type bred gilts; all vaccinated by the double process. Price reasonable for quick sale.

A. J. SWINGLE - Leonardville, Kansas.

OLD ORIGINAL SPOTTED POLANDS.

Booking orders for spring pigs.

A. S. ALEXANDER, R. 2, Burlington, Kansas

LANGFORD'S SPOTTED POLANDS.

Mr. Farmer, look this way. Pigs ready to ship. **T. T. Langford & Sons, Jamesport, Mo.**

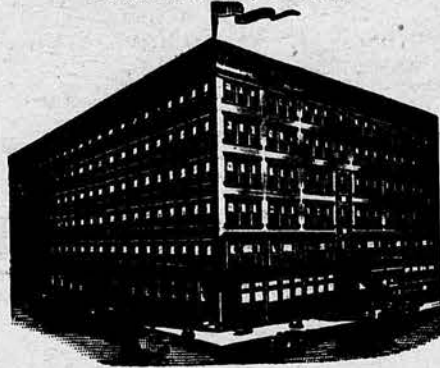
GALLOWAY CATTLE.

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

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

HOTEL KUPPER

KANSAS CITY, U. S. A.



Located in the center of the shopping district, convenient to car lines, stores, and all points of interest. The hotel of quality, comfort and refinement.

European Plan, \$1.00 to \$2.50 per Day.

Cafe in Connection.

ROBINSON-MARS HOTEL CO., PROPS.

Eleventh and McGee Streets

OHIO IMPROVED CHESTERS**IMMUNE O. I. C. PIGS**

ALVEY BROS. - MERIDEN, KANSAS

Choice August and September Pigs

Weight 125 pounds, \$25. Booking orders for spring pigs, \$15 each; pair, \$25; trio, \$35. Registered. Express prepaid anywhere in Kansas. **F. C. Gookin, Route 1, Russell, Kan.**

FARM LANDS FOR SALE**A Modern Topeka Home****TO SELL AT A BARGAIN**

Inside location, on a good street, near school. Seven-room house, all modern conveniences. Good barn. This proposition will interest anyone wanting a choice location and a good home. Priced to sell. No trades. Address

BOX 5, Care KANSAS FARMER

THIS WILL INTEREST YOU

Do you want to move to Topeka to educate your children? If you do, this modern five-room home near Washburn College will just suit you. New, only occupied ten months. A choice location. Must sell quick. \$3,200 takes it. Address **S. CARE KANSAS FARMER, TOPEKA.**

Come to Fowler, Meade Co., Kansas

Where great opportunity awaits you; where you can buy the finest of alfalfa lands set to alfalfa with flowing artesian wells; fine orchards and homes at from \$50 to \$75 per acre. Finest of wheat land, improved, at \$25 to \$50 per acre. Friends, Catholic, Christian and Baptist churches with large congregations. Write

THE HADDICAN LAND CO., Fowler, Kan.

UTICA, NESS COUNTY, KANSAS

On main line Missouri Pacific. Send for list of sixty wheat, corn and stock farms, any size you want, map of Kansas and other literature. If you don't want to buy any land, do you know of anyone who does? If you do, send us the names of parties who might buy land here. If we close a deal with any of them, will pay you well for your trouble. **Buxton Rutherford Land Co., Utica, Kansas.**

SEVENTY ACRES

One mile of pavement, Ottawa, Kansas. Seven-room house extra fine, large barn, other splendid improvements; everything up in splendid condition. Owner wishes to sell on account of business opportunity. Write for full description and view of improvements.

MANSFIELD LAND CO., OTTAWA, KAN.

A REAL BARGAIN

320 ACRES, 2 1/2 miles good live town; 250 acres tillable, balance good pasture land, all fenced 3 wires; soil is good, a black sandy loam, small house. Terms on one-half purchase price. For quick sale, \$7 per acre. Many other good bargains. Address

THE JIREH LAND CO., JIREH, WYO.

WANTED

A buyer for a quarter of Rush County, Kansas, bottom wheat land, all in crop, at \$5.600. Terms. It's a bargain. Write **JAS. H. LITTLE - LA CROSSE, KAN.**

FINE SECTION UNIMPROVED

Only eight miles from Leoti, county seat of Wichita County, Kansas. Fine wheat land and can all be plowed. Price for quick sale, \$10 per acre. **CARTER REALTY & ABSTRACT CO., Leoti, Kansas.**

TWENTY ACRES 1/2 ml. McAlester, city 15,000; 15 a. in cultivation, 12 of which is dry bottom. Fair improvements. Price, \$40 per acre. Terms. SOUTHERN REALTY CO., McAlester, Okla.

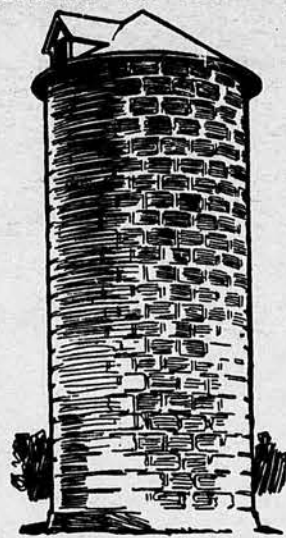
John D. Henry of Leocompton, Kan., one of the prosperous Poland China breeders, reports sixty head of choice big-type spring pigs by such boars as Mammoth Orange and Big Bob Wonder. He also has a choice lot of fall boars and gilts by Mammoth Orange.

NATIONAL TILE SILO CO.**NATIONAL TILE SILOS LAST FOREVER**

Test of Years Has Proven the Strongly Reinforced Tile Silo to Be the Most Permanent, Efficient and Economical Silo in Use.

CHEAPEST TO INSTALL—FREEDOM FROM TROUBLE

A tile mason with two or three helpers can erect the National Tile Silo in a short space of time.



Extract from State Experiment Station Bulletin: "Silos may be divided into two classes, temporary and permanent. In the first class should be included all silos which use perishable building material in their construction. Permanent silos are constructed of building material which is imperishable. Materials that will not burn, rot or rust."

No repairing or upkeep. No painting. No blowing in or blowing down. No cracking. No rusting or rotting. No freezing.

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Preparedness with a National Tile Silo means more live stock, plenty of good cheap feed in the winter, wealth and comfort.

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511 R. A. Long Building KANSAS CITY, MISSOURI

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I expect to build a silo of about.....tons capacity,.....feet

in diameter by.....feet in height, about the month of.....

Please send me information and prices.

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TOWN.....STATE.....

HORSES AND MULES.**The Champion Breeder --- Missouri Chief 8365**

Sire of the World's Grand Champion Jack, Kansas City 8743 In public service at our ranch south of Ellinwood. Excellent facilities for handling any number of healthy jennets.

Write Us for List of Winnings of His Get.

Most liberal terms and other information about this sire possessing excellent size, quality, bone, finish, and unexcelled style and action. Winner first as sire at Kansas State Fair, Hutchinson, 1915.

M. E. RICHARDSON - STERLING, KANSAS

DEIERLING STOCK FARMS

Have fifteen large, heavy boned, black, registered jacks, 15 to 18 hands high, good heads and ears, good style, good breeders. I have a number of jacks sired by the champion, Pride of Missouri, also several other good herd prospects. In my 1914 sale I sold the champion of Kansas State Fair, 1915, Eastern Lightning, also Demonstrator, first prize aged jack Missouri State Fair. Reference, Peoples Bank. Written guarantee with each animal. Have a number of Percheron stallions for sale, also saddle stallions. Barn in town. Wabash Railroad. **WM. DEIERLING, QUEEN CITY, MISSOURI.**

PERCHERON STALLIONS FOR SALE

A pair of coming fours and a coming three-year-old, two blacks and the other a bay, sired by the herd stallion Sirco (51358), which we sold to go to Northern Nebraska. They have the size, bone and quality, and are priced to sell.

A. M. DULL & SONS - WASHINGTON, KANSAS

AUCTIONEERS.**P. M. GROSS****LIVE STOCK AUCTIONEER**

"Twelve Years on the Block"

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Sales Made Anywhere

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Authorized state agent of Kansas Rural Credit Association. Write me your wants. **H. M. JUSTICE - PAOLA, KANSAS**

J. P. OLIVER Live Stock and Real Estate Auctioneer. Twenty years' experience. Newton, Kansas.

Live Stock and Farm Auctioneer

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

Secretary Charles Gray of the American Aberdeen Angus Breeders' Association reports that the recent series of sales by the association were very satisfactory. The general average for the 260 head sold in the series of public sales was \$160.

HORSES AND MULES.**Public Sale**

At farm, near St. John, Kansas, May 23rd; 31 head of horses and mules. One high class mammoth jack, eleven mammoth jennets, some Holstein cows and farm implements.

SUSIE NEILL.

GUERNSEY CATTLE

A GUERNSEY BULL is a sure way

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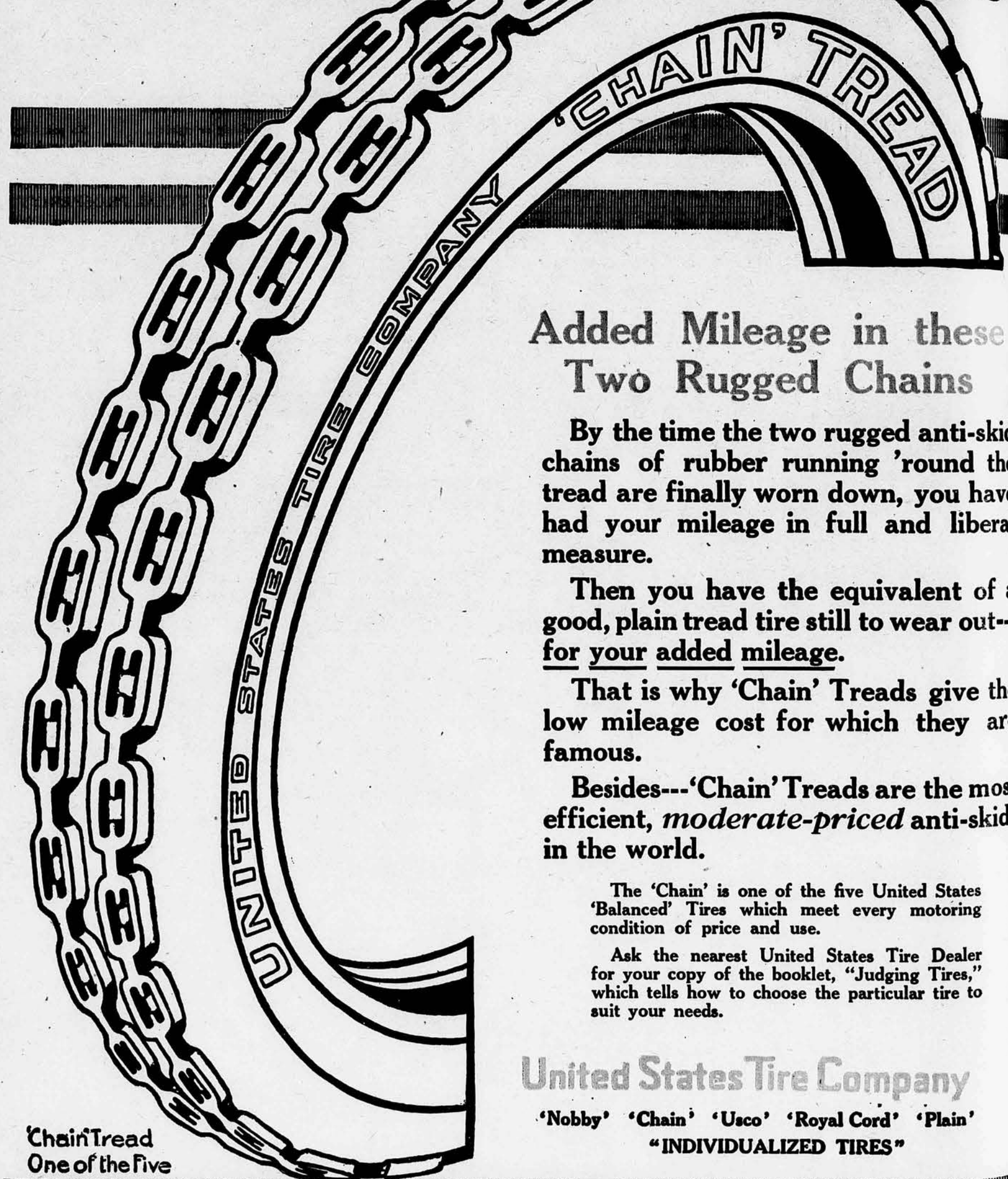
Box K, Peterboro, N.H.

Guernsey Bulls For Sale

A few promising bulls from 2 to 14 months old from A. R. O. cows and sired by the May Rose bull, Langwater Hambro 21011, whose six nearest dams average 720 pounds fat A. R. At reasonable prices.

RALPH TRATT - WHITEWATER, WIS.

United States Tread 'Chain' Tires



'Chain' Tread
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Added Mileage in these Two Rugged Chains

By the time the two rugged anti-skid chains of rubber running 'round the tread are finally worn down, you have had your mileage in full and liberal measure.

Then you have the equivalent of a good, plain tread tire still to wear out--for your added mileage.

That is why 'Chain' Treads give the low mileage cost for which they are famous.

Besides---'Chain' Treads are the most efficient, *moderate-priced* anti-skids in the world.

The 'Chain' is one of the five United States 'Balanced' Tires which meet every motoring condition of price and use.

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