

KANSAS FARMER

For the improvement of the Farm and Home

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TOPEKA, KANSAS, MAY 6, 1916.

Established 1863. \$1 a Year



IN PATCHES planted here and there—sometimes well farmed but more frequently neglected—the sorghums have in every sorghum belt locality produced grain and forage year after year. Under difficulties they have proved their supremacy. With useful animals to consume them they have established the occasional settler in a permanent and reasonably prosperous homestead. Through their utility which has been proven by the settler, the sorghums promise the hope for success in the sorghum belt.

The early day settler was encouraged in the belief that rainfall would follow the plow. The records of many years have forever banished this cherished hope. There will be periods of comparatively light and heavy rainfall as in the past, but the annual precipitation will not increase permanently. This, experience has taught at great cost. The same teacher has shown the folly of gambling with wheat, corn, cotton, or any other single market crop in which sole dependence is placed.

While manifesting failure along certain lines, experience has taught success along other lines—the success of the settler who has been able to forestall adversity and whose precedent is worthy of imitation.

—T. A. Borman



MR. BORMAN POINTS OUT—

- AREA 1—For grain, plant dwarf milo, feterita, Freed Sorgo.
- AREA 2—Dwarf black-hulled kafir, white-hulled kafir, feterita.
- AREA 3—Standard black-hulled kafir and other grain sorghums.
- AREA 4—Standard black-hulled kafir is the best variety.
- AREA 5—Here corn outyields kafir. Use sorghums for forage only.

Average Acre Value of Kafir in Kansas for Period of Thirteen Years is \$11.41



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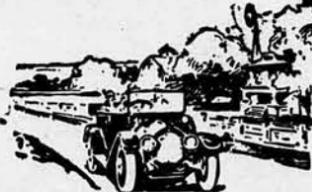
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FARM POWER

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

WHEN an engine is working with the throttle almost closed, as in coasting, or when the car is at rest with the engine running, a partial vacuum forms in the cylinders, particularly in high compression engines, sucking the oil on the cylinder walls up past the piston rings. Invariably the blue smoke exhausted after coasting, or standing with engine running, indicates burnt oil due to the above causes. The result is the formation of carbon deposits in the combustion chamber.

The federal trade commission has sent to Congress a preliminary report on the rise in the price of gasoline. It draws no conclusions but presents masses of statistical information. Among the items noted in the press summary are: Production of crude oil remained virtually stationary; gasoline contents of crude oil decreased; exports of gasoline increased from 188,000,000 gallons in 1913 to 238,500,000 gallons in 1914 and 284,500,000 gallons in 1915; for its 62 per cent of the gasoline produced the Standard Oil Company charged about 1 cent a gallon less than the "independents" charged for their 38 per cent.

In getting the farm machinery ready for spring operations, give special attention to the lubrication of all wearing parts. "A full oil can to every machine" is a good rule to follow. Especially on new machinery and the farm tractor does the use of oil become important. Make sure that all oil holes, wells, pumps, grease cups and bearings are thoroughly cleaned of dirt, grit, paint, and foreign matter before the holes are filled, so that waste matter can not be carried into the bearings. Clean wool or cotton placed in cups will keep out sand and grit. It is a good practice to use a mixture of equal parts machine oil and kerosene in the bearings for the first few hours of operation of a tractor.

Storing Gasoline on Farm

The best and safest way to care for gasoline on the farm is to bury a tank of a capacity to meet your needs, to a depth of from 18 inches to two feet. Then put in two pipes through the top. One pipe should run to the bottom, or nearly so; if run to the bottom several holes may be drilled near the bottom of the pipe, say one-fourth inch from the bottom. It is good practice to solder pipe to both top and bottom for stability. Also put in a small pipe with cock for vent.

The other pipe simply goes through the top of the tank for a filler pipe, and should be long enough to come above the ground and allow for a cap and lock if desired, and should not be smaller than one and a quarter inches, larger is better.

Bury the tank at least 20 feet from the garage or any building, then pipe into garage or shop and get an ordinary suction pump on end of pipe, using a measure or bucket for filling car or engine.

Another very good way to get gasoline out of the tank is to make the top airtight and run a small pipe from garage through the top of the tank with an ordinary tire valve soldered in the end, then use a tire pump and pump air into the tank, forcing the gasoline out.

But with the latter way, care should be used not to put too much pressure on tank and to release the pressure when the gasoline has been drawn.

A very good way to arrange so you won't forget to let the air out is not to have valve cock in and when you disconnect the air pump, the air will escape.

Of course, if you are far enough out that the oil company will not deliver the gasoline to you, you will need a second barrel for filling, into which you can put the filling pipe and use a short pipe for connections between this one and storage tank so you can drain into storage tank without taking from the wagon.—R. A. BRADLEY, Fort Collins, Colo.

Lubrication Saves Wear on Tubes

Lubrication is most important in saving the inner tube, although it is a matter which is given the least attention. However, practically all tire manufacturers treat the inside of cases with a white solution to prevent the tubes from sticking to the adhesive "friction" of the fabric. A good lubricant, therefore, such as soapstone or talcum, should be used. Some users neglect this en-

tirely when changing tubes; still others use it so sparingly that it does little, if any, good; and yet others use so much that more harm than good results. If too much be dumped into the casing it will collect at one point and during hot weather will heat to such an extent as to burn the rubber of the tube, making it very brittle and lifeless—this can be recognized by the honeycomb appearance. The lubricant should be dusted on the fabric all around the casing and the inner tube.—Power Farming.

Price of Gasoline

Paul J. Banker in the March 16 issue of Commerce and Finance discusses the gasoline question illuminatingly from various angles. On the question of gasoline production he says:

"Ten large petroleum fields are being worked in the United States. These vary in their gasoline producing power from 2 1/2 per cent in the California field to 25 and 30 per cent in Pennsylvania and Oklahoma. Under new methods of refining it is possible to extract much more gasoline than heretofore has been supposed so in the future the gasoline problem may prove less serious than is believed. Upwards of 7,000,000,000 barrels of crude oil are estimated to be in the United States fields yet un pumped.

"The production of crude petroleum has increased enormously in the United States since 1880. Approximately from one to twelve billion gallons a year. The United States of course leads the world in gasoline production. In 1915 the next producing country was Russia. Mexico came third in that year.

"When the American supply is exhausted in thirty or forty years as it is predicted it will be, there will doubtless be found other new fields in Mexico, Galicia, India, Japan, Peru, Italy, Germany and the Dutch West Indies where small amounts of petroleum now are being pumped. What with the use of heavier oils for fuel, increased efficiency in distillation and government regulation of fields and oil bearing properties which really are as much as public resource as waterfalls or forests, there is reason for optimism as regards the motor fuel supply of the future.

"I think the public can take heart. The price of gasoline will not soar much higher, and it will probably come down to the price at which it stood before the European War. Many elements are at work that justify this assurance. The war will end before long and dispose of one great big excuse for the present price. If the price does not soon drop and stay where it ought to be in relation to supply and demand, other and existing sources will be developed that will result in competition that will bring the price where it belongs.

"Close analysis of the situation as set forth by those who are in possession of all the real facts and competent to give an authoritative opinion can lead to no other conclusion than that the price of gasoline today is not justified. I am convinced it is but a question of time before gasoline will be cheaper than at present."

Capturing Automobile Thieves

The police departments of large cities are about the only organizations that have any idea of how many automobiles are stolen in a year.

There stands five hundred or five thousand of convertible wealth, all ready to be moved to a point where it can be turned into cash. The man with perverted ideas of property rights, so reasons, and as a result the loss to motor owners has been enormous.

A number of automobile companies and automobile supply companies are furnishing their customers without charge the co-operation of an organization which should result in the rapid recovery of property stolen.

Naturally the details of these organizations methods are not printed. Their efficiency, however, has been proven in several of the larger cities, and the system is being extended to cover the entire country.

The overheating of an automobile engine can be remedied by changing the pitch of the fan blades, so that an increased amount of air will be thrown against the radiator. A little twist to the blades will help considerably in keeping the engine cool.—Popular Mechanics.

KANSAS FARMER

The Standard Farm Paper of Kansas

ALBERT T. REID, President

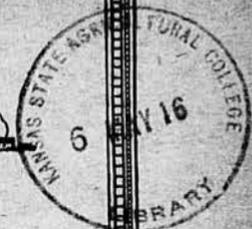
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IMPLEMENT PRICES HIGHER

Farm implements containing steel, such as cultivators, harrows, tractors, drills, etc., are likely to be higher in price in the near future. Steel has already greatly advanced in price. Many manufacturers have not advanced the prices of farm implements in proportion to these advances in the raw product, but this has been because the materials they used in this year's machines were purchased before the advances came.

W. M. Mumm, president of the Mumm-Romer Company of Columbus, Ohio, who is in close touch with the steel situation, writes as follows regarding the future in farm implement prices:

"There are practically no metal products today that have not more than doubled their prices within the last eighteen months. Many of them cost three or four times as much as they did two years ago. The enormous demand created by the war for metal of all kinds is hardly appreciated even by the well informed. This demand, being for war purposes, is urgent enough to justify the payment not only of increased prices, but of premiums for immediate delivery. The result has been that the American manufacturer who does not make his own steel is placed in the position of having to pay the same prices that the war-trenzied nations are willing to pay. Since no agricultural implement manufacturer in the United States makes his own steel, it means that all of them are compelled to pay highly-advanced prices."

The manufacturer cannot do otherwise than advance prices when compelled to buy his materials on this basis. The contracts for next year's output must soon be made. In some instances the material alone will cost more than the manufactured implement is selling for today. Present prices of steel will without question be maintained as long as the war lasts, and will probably advance.

"But if the war were to cease today," says Mr. Mumm, "contracts already made and which will be carried out regardless of war or peace will maintain the price of steel about where it is for another year. That the demand will not lessen is shown by the necessity for reconstruction that will face a large part of Europe, and by the further necessity of European methods being changed so as to call for a larger amount of labor-saving machinery than has been thought of before."

"These facts may reasonably be expected to maintain the present high price of materials for at least a year more, and the effect will be shown on domestic products for two years."

In view of these conditions it would seem that there is nothing to be gained by putting off the purchase of needed implements in the hope that the price will be lower in the near future. The same influences that will compel sharp increases in the prices of field machinery will affect sheet metal devices of all kinds, including roofing, ventilators, silos, silo roofs, and silo equipment generally, spraying machinery, and in fact everything into which metal enters can be expected to remain high and even go higher.

GROW BETTER CATTLE

We seem to be coming into a new era in cattle improvement in Kansas. While range herds may be passing, high class breeding herds are on the increase. Kansas buyers have bought some of the highest priced animals sold the past season. There is no questioning the fact that we have the conditions necessary to make this state a great center for the breeding of beef cattle. Even in our western counties feed can be raised in abundance. Some of the largest pure-bred herds in the country are now in Western Kansas.

The use of better bred animals is increasing on the farms in all parts of the state. The organization of a live stock association in the extreme northwest corner of the state shows the interest being taken in better stock in that section. The prices being paid for market cattle are an encouragement to those growing stock. Last week an Illinois feeder took a bunch of cattle out of the

Kansas City market at \$9 a hundred. These steers cost him over \$100 apiece. With so great a demand for good stock cattle and feeders, there is a splendid opportunity open to the farmers of the West. The best types of beef cattle should by all means be grown—such animals as mature quickly and bring these good prices. There is little excuse for growing "scrub" cattle. By using a good pure-bred sire, even an ordinary bunch of cows will produce calves of excellent beef type.

GROW PLENTY OF FEED

The live stock farmer must plan for an abundant supply of feed for his stock. Nothing is more detrimental to success in handling stock than to have the feed supply run short. Since the seasons are variable, enough feed crops must be planted to provide an ample margin of safety. It is better to have a lot of feed left over than to be compelled to put stock on short rations before the wintering season is over.

In the western part of the state keeping a reserve supply ahead will be almost necessary. The farmer who always has an abundance of feed in reserve will never be under the necessity of rushing stock to market at sacrifice prices when an unfavorable season cuts the feed supply short. We have known of many instances where men with such reserves of feed have been able to buy up stock cattle at bargain prices in short feed years and thus realize good profits on the feed they have saved.

The sorghums, properly handled, will always make some feed and there are years in which they produce unusual yields. In such years much feed goes to waste. This, if properly stored and fed to cattle later could be turned into profit.

No method of storage is equal to that of making silage of these feed crops. Through this means of preserving feed there need never be a shortage. The time to plan for such reserve is when the feed crops are being planted. Be sure and plant enough so that even if the season is an unfavorable one there will be sufficient to carry the stock through.

Shawnee County is now taking up the matter of organizing a county farm bureau. It seems strange that this county has been so slow to take up this means of uniting the agricultural forces of the community. The present movement has the Grange back of it and we trust that a strong bureau will be formed. Every township has one or more local granges and they are all represented on the committee appointed by the Pomona Grange to canvass the county for the bureau. It should be an easy matter to get 250 farmers to enroll. A number of counties now having bureaus have enrollments in excess of this number. We have yet to hear of any county farm bureau wishing to disband and drop the work. As we have visited these bureaus over the state we have found the members' enthusiasm for the plan increasing. The farm bureau with its agricultural agent, has passed the experimental stage.

BUYING STOCK HOGS

Already a number of Kansas stock hog buyers have taken advantage of the new rules regarding the handling of such hogs on the Kansas City market. The hogs purchased and shipped out into the state from the market are accompanied by an inspector's certificate showing that they have been vaccinated either with the serum alone or the serum and virus and have been dipped according to the regulations. They must in addition be held for fifteen days at their destination. Besides this trade direct from the stock yards, a good many stock hogs are being handled from feeding yards near Kansas City where they are immunized before shipment. Hogs have recently gone to Northern Indiana, to Illinois, and to Iowa from these yards. In sections where cholera has been prevalent the buying of immunized hogs is a necessity.

The development of this sort of market for hogs will be a good thing for

Kansas. Hogs have of necessity in the past always been finished on the farms where produced. This has restricted pork production to such farms as could fatten for market all the hogs grown. The opening of a central market for stock hogs where they can be handled with safety, widens the possibility in hog growing. Some farms can grow profitably many more hogs than can be finished, while there are other farms where stock hogs can be brought and finished for market with profit.

LOCAL DAIRY ORGANIZATIONS

During the past two or three years a number of herds of Holstein cattle have been started in Montgomery County, Kansas. This is a county where dairy farming should be quite generally followed. It has been one of the established policies of the farm bureau of that county to promote interest in good dairy stock and improved dairying methods. Holstein breeders have become quite numerous and a county organization has recently been formed.

One of the avowed purposes of this organization is to get cow testing work started in the county. Nothing will do more to improve dairy cattle and dairy methods than a good live cow testing association. The one in Dickinson County is as yet the only one at work in the state. If the recently organized Holstein Breeders' Association in Montgomery County can get cow testing work started, it will have done enough to justify its existence.

There are quite a number of Jersey men in this county also, and the agricultural agent is urging that they, too, get together and strive to advance the dairy interest of the community.

These two groups of breeders would do well to work together in promoting the interest of the industry as a whole. Anything that leads to improved methods will increase the interest in all breeds of dairy cattle. There is considerable to be said in favor of the idea of growing only one breed in a locality. Such method has made counties in older dairy states famous.

This week a Shorthorn buyer from California came to the KANSAS FARMER office to secure information as to where he could buy a carload of yearling bulls and heifers. While there are a good many breeders of Shorthorn cattle in Kansas, there is probably no breeder in the state who could at the present time fill this order. This man reported a strong demand for well bred cattle in California. This incident shows the scope of the field for pure-bred cattle. The whole West and Southwest is in the market for pure-bred live stock. With all our advantages for breeding pure-bred stock, we should by all means endeavor to produce the stock to meet this demand and in addition take such measures as are necessary to secure the attention of these buyers who come from distant states. We put our visitor in touch with a number of breeders having for sale such stock as he wanted, and by assembling from several different places he will be able to make up his carload. It is certainly up to the breeders of this state to see that no buyers pass through our state without at least trying to supply their needs.

The value of farm lands without improvements in the United States has grown as follows: 1900, \$15.57 per acre; 1910, \$32.40; 1912, \$36.23; 1913, \$38.10; 1914, \$40.31; 1915, \$40.85; 1916, \$45.55.

If it is not handy to get the ready-mixed chick feed, you can make it yourself and it will be cheaper than that you can buy and better. Be sure and have plenty of pinhead oatmeal or rolled oats in it, for there is nothing better for young chicks or old than some form of oats.

The surest test of the value of the feed is the result obtained at the pail. There is just one way of determining this definitely and that is through the use of the scales.

WHEAT CROP PROSPECTS

Some of the newspapers are already making their usual estimates of the probable wheat yield for the year. In some instances the figures given are credited to the report recently issued by the State Board of Agriculture. The text of this report, however, did not attempt to give any estimated yields. It is a little early in the season to begin figuring on the bushels of wheat.

Mr. Mohler's report gave the acreage and also the per cent which would likely be abandoned and put into other crops. The percentage condition was also given as compared with an assumed standard. We do not see how anyone could venture to make any very accurate yield estimates on the basis of the report. There are a good many things that can happen in the next few months to influence the crop one way or the other.

The extent of Hessian fly infestation was given in the recent report and this forms a disquieting feature of the wheat crop situation. The statement is being made in various parts of the state that the fly is doing no damage now. The flaxseed sucks no juices from the wheat. The tiny flies which have been emerging from these flaxseeds during the past two weeks, will do no damage. They simply deposit their eggs on the wheat plant and these will later hatch into the maggots. If the conditions are favorable for the hatching and development of the Hessian fly in this larval form, the damage may be great. Unfavorable weather conditions for the welfare of the fly may greatly reduce the damage. There is no getting around the fact that Mr. Mohler's report showed serious Hessian fly infestation in the wheat belt of the state.

We are glad the State Board of Agriculture through its many correspondents is able to secure information on the condition of the crop and publish it from month to month. From these reports we can learn the facts as to how the different influences are hindering or helping the development and growth of the crop. The extent of the Hessian fly damage in the next two months will have an important bearing on the probable crop.

GRAIN OR LIVE STOCK

Good grain crops always seem to cause a falling off in the handling of live stock and live stock products. In spite of the experience of those who have made some of the permanent successes in farming, this seems to be true. In a good wheat year the cream receipts decrease and fewer cattle of all kinds will be found on the farms of the wheat grower.

The organization of a live stock association in Northwest Kansas shows that a good many believe in live stock and diversified farming as the safest type to follow, but as yet the idea is by no means generally accepted. Following the meeting at Colby where considerable live stock enthusiasm was displayed, H. T. Nielsen, district agricultural agent, made an extended trip through the counties of Rawlins, Cheyenne, and Sherman, for the special purpose of observing the relationship between live stock and grain farming. In writing of this trip, Mr. Nielsen says:

"It is rather surprising how large an acreage is in wheat and how small is the amount of live stock the average farmer has on hand. At many places I saw great piles of feed but few animals on the place to consume it. It seems to be a poor system of farming and yet it is exceedingly common in this part of the state at the present time. When the grain crops do well the amount of live stock kept is sure to be small. A few farmers are carrying on live stock farming almost to the exclusion of grain farming. These men, while not discouraged with their system, point out that the wheat growers have made more money in the last two years than have the live stock farmers. This is one of the peculiar tendencies of the West which will always have to be met."

The live stock farmers, however, can be sure that when poor grain years come, as they will, the conditions will be reversed. Exclusive grain farming cannot be otherwise than speculative.

GENERAL FARM INQUIRIES

Something For Every Farm—Overflow Items From Other Departments

SUBSCRIBER L. M., Wallace County, asks what precautions are necessary to keep a strain of improved kafir free from mixture with other varieties.

It is difficult to grow several varieties of kafir on the same farm and keep them from mixing. The pollen is distributed by the wind just as is the pollen of corn. Not only does kafir mix with other strains of kafir, but it will hybridize with cane, feterita, and others of the sorghum family. This injures the purity of the strain even more seriously than mixing with other kinds of kafir.

On many farms it may be necessary and desirable to grow kafir or milo for grain and some variety of cane for forage. These should be kept as far apart as possible, and volunteer plants should not be allowed to mature pollen. Cane seed is very persistent and on a farm where it is grown there is liable to be scattering stalks of cane all over the place. To keep the grain sorghums pure, the cane heads should be cut out.

Maintaining pure strains of grain sorghums will greatly increase their value as farm crops. After a certain strain has demonstrated its adaptability to a certain locality it would be better for all concerned if other varieties could be discarded and all grow the one pure strain.

Sweet Clover for Pasture

R. R., a Clay County reader, writes that he has sixty acres of native upland pasture where the grass is nearly all dead. He would like to sow some sweet clover in this pasture and asks if any farmers in Kansas have used sweet clover extensively for pasturing cows.

There can be little question as to the value of sweet clover for pasture. It requires considerable time and patience, however, to get it established in a pasture such as our correspondent describes. The pasture cannot be used much the first season, and usually the young clover plants that start will have a hard time competing with the many undesirable weeds found in a worn-out native pasture. May 1 is about as late as sweet clover is being sown in the southern counties where it is used the most. It is a biennial plant and for this reason is not so well adapted to a permanent pasture as perennial plants.

Many claim stock will not eat sweet clover but many farmers have been pasturing it with splendid results. We have just received the annual report of the Allen County Farm Bureau. This county is growing more sweet clover than any other county in Eastern Kansas. In this report W. E. Watkins, the agricultural agent, has the following to say:

"Stock will not eat green sweet clover as long as nutritious bluegrass is available. Sweet clover can be pastured the first season, beginning about June when the plants are about six or eight inches high. It is the only legume that never causes bloat. The following instances are given to show how prominent a place sweet clover for pasture will occupy in Allen County's agriculture:

"J. A. Wheeler seeded five acres in April 1914, and pastured six cows from June to October. In 1915, six cows and two hogs pastured continuously on three acres of this field from April to August. In August the clover was knee-high and considerable seed had formed.

"George N. Johnson seeded six acres in March 1914, and pastured four cows, four calves, and ten hogs from June to August. In 1915, the same field furnished pasture from April to August for four cows, six calves, and four brood sows and their litters.

"William Laury pastured thirty head of cattle from July to November on twenty-five acres, and in 1915 the same field was pastured from April to July by ten calves, thirty hogs, and twenty-five horses and mules.

"C. G. Staley had thirty acres that grazed sixty hogs, sixty sheep, ten horses, and six cows during 1914, and in 1915 the sheep ate the clover so close that the crop was killed out in spite of the fact that good bluegrass pasture was also available."

A number of other instances are given in this report showing the successful use of sweet clover as a pasture crop.

Alfalfa Bloat

J. L., Decatur County, asks if it is safe to turn some milk cows on a patch of alfalfa.

Many people pasture alfalfa with cattle and never seem to have any serious trouble, but there are a great many

losses from alfalfa bloat every year. Those who turn cattle on alfalfa are taking some risk. There is more danger when the alfalfa is wet with dew or rain. In the early spring when the growth is rank and juicy it seems more apt to cause bloat. If the risk of pasturing alfalfa is taken, it is a wise precaution to always give some hay or fodder before turning them on the alfalfa.

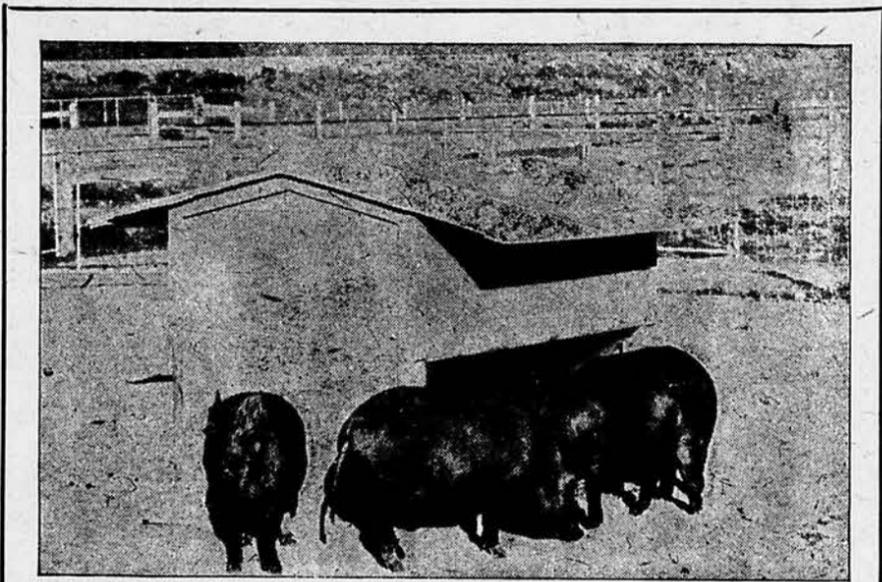
Always watch cattle when they are grazing on alfalfa. At the appearance of the first symptom of bloat, move the animal around and pour cold water on the back and sides. As a last resort if the animal seems in great distress, the paunch can be punctured. This can be done with an ordinary knife although it is better to have the trochar and canula made for the purpose. The point at which to make the opening is on the left side about six inches from the point of the hip in the direction of a diagonal line drawn toward the lower point of the shoulder.

A wooden gag or a piece of rope coated

in Kansas since 1871, writes as follows regarding the handling of native grass pastures:

"A bluestem pasture is like a work horse—to get the most out of it you must not overwork it and must always keep some power in reserve. When once exhausted it takes much time and expense to bring it back so as to secure good results. Stock always want to feed where grass is short and tender, so if you feed off all that grows you soon exhaust it and have a weak, weedy pasture. There should be more or less old grass left in the fall when stock is taken out. This old grass should be left until May 15 or June 1, or until the grass and weeds get a start. Then burn off all that will burn. This not only kills the weeds, but makes fresh tender feed where the stock did not graze it short the year before. Never turn stock into a pasture until the grass has a good start. It is better to pasture two head in June than one in May.

"You cannot start a bluestem pasture



THIS self-feeder designed and improved by the Iowa Experiment Station furnishes an efficient means of self-feeding. The pigs here seen weigh 160 pounds at five months and twenty-five days. They were self-fed on corn, tankage and middlings according to the "free-choice system," receiving in addition a quart of buttermilk a head a day. Their gains cost in dry lot only \$5.58 with 70-cent corn, \$1.45 middlings, \$2.50 tankage, and 25 cents a hundred buttermilk.

with axle grease, tar, or other unsavory substance is sometimes placed in the mouth and held there by tying it to the horns. The efforts of the animal to get rid of this gag stimulates the belching of gas and gives some relief.

Two ounces of aromatic spirits of ammonia given every half hour in a quart of cold water also affords some relief.

When animals bloat badly they may die in a very short time unless relieved. It must be remembered that if the simpler remedies are not effective, the puncturing of the paunch is the only hope of saving the animals in bad cases.

Following an attack of bloat it is a good plan to give one to one and a half pounds of Glauber salts as a purgative.

Renewing Prairie Pasture

The experience of our Clay County reader whose 60-acre upland pasture has run out, is by no means unusual. All over Kansas native grass pastures have failed. Pasture is almost essential to the live stock business. It is hard to find a substitute for our native grasses. As long as there is any wild grass left in a pasture there is a chance of bringing it back to its original condition, and the value of the native grass for pasture purposes is such as to warrant the making of this effort.

In our issue of April 1 we referred to this question of bringing back our native grasses. Those interested in renewing such pastures can with profit refer to that issue and read the article. Renewing the native grass hinges around giving the few plants that remain a chance to grow and mature seed. Early and heavy pasturing is the cause for failure in nearly every instance. The native grasses can stand a great deal, but they cannot survive being grazed close year after year the moment a spear of green grass shows in the spring.

J. N. W., Allen County, who has lived

from the seed. When all the roots are dead your bluestem pasture is gone, but when there are some live roots it will come back if stock is kept off for two years. You can tramp a soft pasture in November until it looks like the road and many times it seems to help, when the same treatment in May would injure it for years."

There is apparently some grass left in the pasture of our Clay County reader, and by keeping stock off during the fore part of the season and mowing the weeds in summer if this is possible, there is considerable chance that the grass will come back. Sowing some sweet clover may help supply a little extra feed while the native grass is spreading.

Abundance of Potash in Soil

Kansas soil contains plenty of potash. It only needs to be liberated. Instead of buying commercial potash at the present exorbitant price apply ordinary roughage to the gardens and fields. This will meet the immediate need of this fertilizer constituent as well as help liberate fertility that is present in the soil in unavailable form, says C. O. Swanson, assistant professor of agricultural chemistry in the Kansas Agricultural College.

Roughage improves the physical condition of the soil and makes it more friable and porous. It increases the water holding capacity of the soil and binds soil particles together, thus prevents blowing. Washing of such soil is retarded while an easy drainage of surplus water is afforded. When straw is burned these benefits are lost.

In a ton of fertilizer of the formula 2-8-2 there are 33 pounds of potassium which is equivalent to 40 pounds of potash. Potassium in salts is quoted at 25 cents a pound or \$500 a ton. No farmer can afford to pay such an exorbitant price.

Analysis shows that in a ton of ordinary roughage there are eighteen pounds

of potassium which is equivalent to about twenty pounds of potash. Two tons of such roughage will give as much potash as is found in one ton of 2-8-2 formula fertilizer.

The average Kansas soil—except in the southeastern part of the state—contains 35,000 pounds or more potassium an acre in the surface seven inches. Little of this, however, is available or in such a form as to be usable by the plants. When roughage, such as straw, corn stalks, or barnyard manure decay in the soil the large amount of potassium which they contain becomes available for plant use. The decomposing material also helps to liberate or make available the potassium present in the soil.

One ton of ordinary wheat straw contains 18 pounds of potassium which is equivalent to 21 pounds of potash. It also contains 10 pounds of nitrogen and 1.6 pounds of phosphorus. One ton of corn stover contains practically the same amount of fertilizer ingredients as the wheat straw. One ton of alfalfa hay contains 50 pounds of potassium which is equivalent to 60 pounds of potash. It also contains 50 pounds of nitrogen and three and a half pounds of phosphorus. This means that at the present market price of potash there is \$15 worth of this element in a ton of alfalfa.

Commercial fertilizer is used because available potassium, nitrogen, and phosphorus is found in the soil in a limited quantity. There is much potassium in the straw while nitrogen and phosphorus abound in the grains. When the grain alone is removed from the field and the straw is applied to the soil it will return to it potassium in organic matter which is available for plant use. Under such condition our potassium supply will last for thousands of years. Potassium, however, will be one of the limiting factors of crop production when the straw and other material is burned and the ash is allowed to leach into the drainage, or when alfalfa and other roughage is sold.

The present price of potassium is so high that the proportion of this element used in mixing the ordinary fertilizer is very much reduced at present. By utilizing the natural resources of the farm—the ordinary roughage—an abundance of potassium for the needs of the crop can be obtained. One ton of wheat straw or corn stover contains as much potassium as 35 bushels of wheat or 50 bushels of corn.—B. K. BAGHDIGIAN.

Bermuda in Nebraska

We have a letter from a Rooks County reader asking if Bermuda grass has been grown successfully as far north as the Nebraska line.

This is a southern grass but is gradually becoming acclimated where the winters are colder than in its habitat. We do not know of anyone growing Bermuda as far north as Nebraska. Some has been growing on the State House grounds in Topeka for several years. It occupies a narrow strip between a sidewalk and a paved road where the heat seems too severe for bluegrass. The Bermuda winter-killed more the past season than it did the preceding year. There is a strip along the edge of the pavement, however, that is alive and now growing vigorously.

If any of our readers have anything to report on the way this grass has revived the past winter we will be glad to hear from them.

Plowing Alfalfa

I. N. Farr of Rooks County, has recently had some experience in plowing alfalfa sod. He writes of his method of rigging the plow used:

"I have just finished plowing an 8-acre field of alfalfa, using a sod plow. I had the lay, which was of the pointed type, turned more flat at the cutting edge than is customary for ordinary sod breaking. I also changed the slope of the two top rods of the moldboard, giving them a sharper curve. I also raised the top rod at the back end. By filing the lay mostly from the under side, especially near the point, keeping the file level, I found it would cut the roots without much difficulty. At the heel end of the lay the filing can be done on either top or bottom side, according to the way the plow tends to run. The fin cutter should be kept sharp. Three horses can readily pull a plow so set and filed. I think the shape of the lay is the most important point in breaking alfalfa. It should cut the roots instead of breaking them off as is the tendency with the ordinary plow."

CARE OF FARM MACHINERY

Money Invested in Implement Shed and Shop Will Return Good Dividend

By E. M. D. BRACKER

A FARMER'S income may easily be much lessened by his neglect to properly care for the machines with which the crops were tended.

It is essential that all machines be protected from the elements while not in use, and a building for this purpose will be a money saver. The plan and elevation of a machine shed suitable for average conditions is shown on this page. The material for such a building should not cost more than \$110.

The bill for materials for this building is as follows: 14 pieces—6 x 6 x 10 ft; 20 pieces—2 x 6 x 14 ft; 3 pieces—2 x 8 x 20 ft; 54 pieces—2 x 4 x 16 ft; 54 pieces—2 x 4 x 16 ft; 12 pieces—2 x 4 x 10 ft; 16 pieces—1 x 8 x 16 ft; 10 pieces—1 x 4 x 10 ft; 140 pieces—1 x 12 x 14 ft; 1800 L. O. G. Batts, 12 M Shingles. 4—24 x 24 x 1 1/2" 2 Its Window Frames, 8 casings for same.

DEPRECIATION OF MACHINERY

Investigations on the depreciation of farm machines made by a government agent working in cooperation with the Minnesota Agricultural College are reported in Minnesota Bulletin No. 117. The items given below are taken from this bulletin, the average depreciation per year being based on original cost as 100%. Depreciation on hay loader, 11.78%; manure spreader, 11.67%; corn binder, 10.03%; harrows, 8.72%; stirring plows, 8.42%; grain binder, 7.91%; mowers, 7.80%; gang plows, 7.40%; hay rakes, 7.80%; gas engines, 7.35%; corn cultivator, 7.25%; grain drills, 6.75%.

These figures on depreciation apply to machines which have been housed. Authorities estimate that machines depreciate twice as quickly when they are not housed.

Just to see how the neglect to protect his machines from the elements affects the farmer's income we will take a farm which requires \$600 worth of machinery properly to equip it. If these machines are properly housed they will depreciate approximately \$48 in value each year, but if they are not carefully housed the depreciation may be at least \$96 a year and in some cases very much more. It is evident that the money invested in the building will yield a dividend which would soon repay the cost of the building. After this is paid for the farmer will find that the dividend is quite a factor in increasing his annual income.

In addition to this, if the farmer should desire to sell some of his machines at any time, he will find that they will bring a much higher price if they bear evidence of careful housing than they would if they were weather-beaten in appearance.

When the farmer does not properly house his machines, the depreciation due to their exposure is not the only loss suffered, for when they are exposed to the elements during idle seasons much more time and effort is required to get them working properly. This extra time and effort is frequently expended during the busiest season when his time may easily be worth several dollars an hour.

It often falls to the lot of farmers who are indifferent about housing their machinery, to have the trying experience of getting a harvesting machine to do even a poor grade of work when the crops are spoiling. No doubt there are many costly experiences during the lifetime of such farmers, any one of which might pay for the entire cost of building a suitable machine shed. How much better it would have been to get rid of this waste and worry by erecting a building adequate to the needs. A farmer who takes pride in keeping his premises looking shipshape, certainly cannot afford to have machines scattered about the barnyard, lanes, and fence corners. This practice greatly detracts from what might otherwise be a neat and tidy place.

CARE OF MACHINES IN THE FIELD

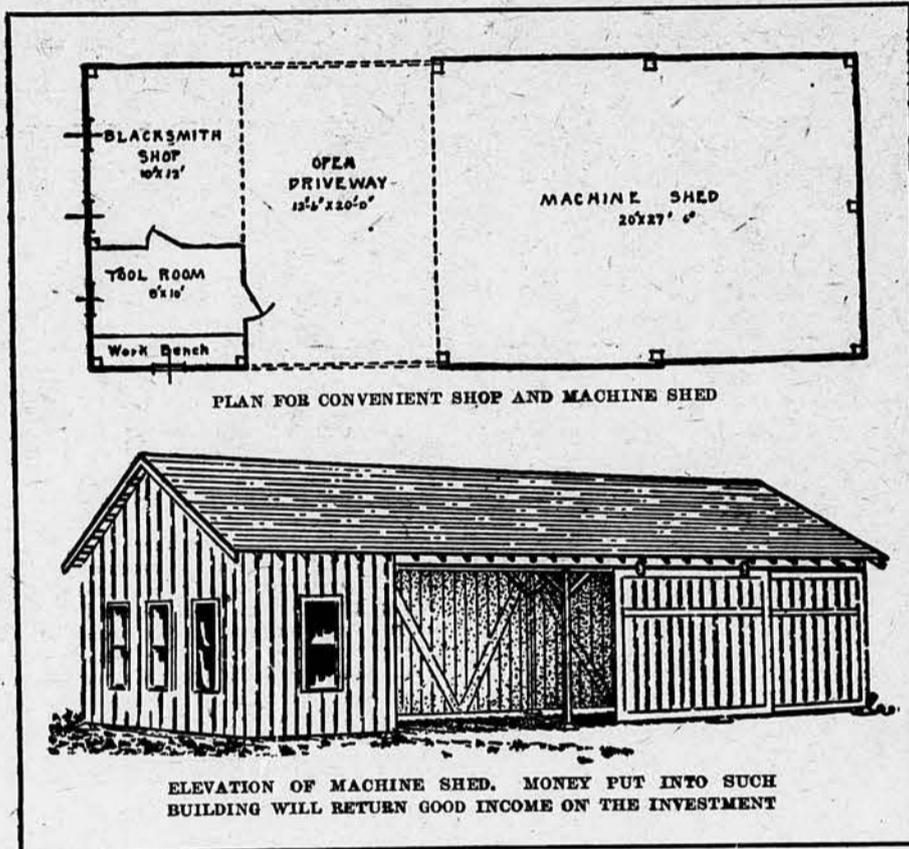
While it is essential that machines be properly cared for while not in use, it is also essential that they be properly cared for while they are being used. When a machine is operating in perfect adjustment it has a characteristic sound. A careful operator of machines, knowing this sound, is able to detect at once when anything is wrong and stops immediately to find the cause of the trouble. It may be that the discordant note was caused by a loose bolt. If this bolt is tightened at once the machine is again in perfect running condition. If, however, the loose bolt is not given immediate attention it means, in many cases, the breakage of a part that causes a de-

lay of several days. The skillful and efficient operator of farm machines takes a keen delight in listening to the hum of machinery operating in perfect adjustment.

ATTENTION AT END OF DAY'S WORK

It is a splendid plan to go over the machine after the day's operations, adjusting bearings and gears for wear where it is possible to do so, tightening loose bolts, making sure that the lubricating devices have been working properly and that the cutting parts are sharp. The machines may be examined at any time it is most convenient after the day's run and before starting again. If this plan is followed systematically, it will require but a few minutes time each day and will prevent many breakages that, because of the delay in waiting for

a machine apart, especially if it is complicated, the parts that go together should be marked. These marks greatly help one in getting the machine back together again. If no marks are provided they should be made with a chisel or a center punch. Gear wheels, especially those that travel in an exact relation to each other, are usually provided with what are known as time marks. A tooth of one gear wheel should come between two marked teeth on the other gear wheel. The reducing gears on gas engines and the gears that drive the binding attachment of grain binders are examples of gears that are marked this way. By noting these marks, or making similar marks before taking the machine apart, one can easily get a machine back together in perfect time.



repairs, are far more costly than the mere expense of their replacement. A machine kept in constant repair will also have a longer life and give more satisfactory service during its lifetime than one that is repaired in a haphazard way.

TOOLS FOR MAKING REPAIRS

Every farmer should provide himself with a kit of tools, containing at least a hammer, screw drivers, punches, cold chisels, pliers, files, and an assortment of bolts, rivets, spring cotters, etc. The tool boxes provided with most machines would not hold these accessories. As it would probably not be possible to equip all the machines with suitable boxes, a canvas bag or a wooden or a metal tool kit could easily be made in which the tools and accessories could be carried to the field and left at some convenient place. With this equipment, most of the ordinary repairs could be made in the field. The more serious breakages could be taken to the work shop, with which every farm should be provided. A kit of tools and accessories as indicated need be used but one season to have their value fully appreciated.

Every farm should be equipped with a workshop where at least minor repairs to machines can be made. This will save many trips to town which are usually made when time is very valuable. Such a shop also provides employment during bad weather and is a place for the farm boys to develop their mechanical interest. The equipment for this shop, to start with, need not be large. The following tools, however, will be needed: anvil, forge, work bench, vise, tongs, hammer, hardies, chisels, punches, and drills. This entire outfit, of quality sufficiently good for the purpose, can be provided for about \$30, the price varying, of course, with the quality of the tools. This outfit will be needed in addition to the ordinary farm tools such as saw, square, chisels, wrenches, plane, etc.

TIME MARKS IMPORTANT

Whenever it becomes necessary to take

These marks also aid one in determining whether or not the machine is running properly timed.

SELECTING LUBRICATING OILS

The operator should use judgment in selecting oils that are to be used on his machines. There are at least three things that should be considered when selecting oils. First, what is the speed at which the shaft or journal runs; second, how much pressure does the shaft exert against the bearing; and third, what are the temperature conditions under which the oil will be used?

The object of a lubricant is, of course, to reduce the friction and thus increase the life of the bearing, and decrease the power required to operate the machine. Two metallic surfaces, which appear perfectly smooth to the naked eye, will show ridges and grooves when viewed with a microscope. Great friction results when metals are brought into contact and then rubbed together, because of the tendency of these rough surfaces to interlock. A lubricant reduces this friction by filling the depressions and coating the shaft and bearing with a thin film of oil, which prevents contact between the metallic surfaces; then, as the shaft rotates in its bearing, the resulting friction is that of the low internal friction of the oil rather than the high friction between the metals. An oil that does not have sufficient body or viscosity, will, of course, be forced out from between the shaft and its bearing, thereby permitting metallic contact and higher friction. An oil that possesses sufficient viscosity or body for average conditions may become either too thin if the temperature rises, or too thick if the temperature falls. Oils are also made to withstand different temperatures. Ordinary lubricating oils are entirely useless for lubricating steam or gas engine cylinders, as they would burn away when subjected to the high temperature existing in an engine cylinder. Again, it is not desirable to use a heavy oil on high-speed shafts, as the internal friction of

the oil is so great that it tends to retard the motion of the shaft. It should now be clear why heavy grease is used on the axles of a wagon and light grease or oils on the axles of a buggy. In this first case the speed of the wheel is not fast and the pressure exerted by the axle in the hub is great. In the second case, the wheel travels faster and the pressure is less. Similar pertinent examples could be given for all classes of farm machines, but it should be evident that special lubricants are made for special purposes and the purchaser should consider well the conditions under which the lubricant is to be used and make his selections accordingly. An oil which is almost invaluable for one purpose will be practically valueless for another. While other tests of oils could be made, the best test is use. It is well to do a little careful experimenting with different oils. These experiments should not be continued indefinitely, but should be carried on for a short period of time, as a poor grade of oil might ruin a bearing. As soon as a suitable oil has been found, the operator should insist that this oil be secured and used. Many times a farmer is urged to purchase a new oil which is claimed to be the "best ever." In actual use such an oil may prove to be the "worst ever."

ADJUSTING BEARINGS

The bearings should be given careful attention while a machine is being used to make sure that they are not too tight or too loose. Those bearings which are subjected to hard usage and which are adjustable for wear, should be given attention every few days. The halves of a split bearing should be separated with enough liners or shims to permit the bolts to be securely tightened without causing the bearing to bind on the shaft. Hot bearings are due to one of the following causes: dirt or grit in the bearing, poor oil, a lack of oil, or a bearing that is too tight. Cylinder oil should, if available, be applied to a hot bearing as it is not so readily burned as ordinary oil. Water may be used to cool most hot bearings. Oil and not water should be used to cool a hot brass bearing. It is advisable to put cotton waste in open and exposed oil holes, as this aids in keeping dirt and grit out of a bearing and it also causes the oil to feed down more slowly.

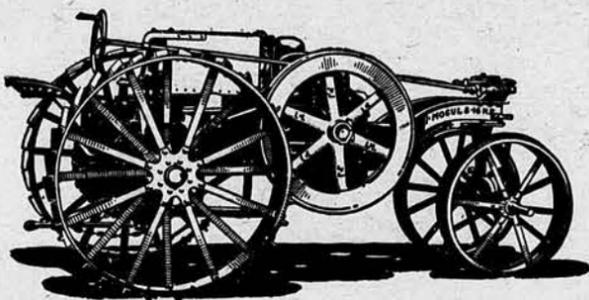
USE OF PAINT

There are many reasons why it is desirable to keep the machines well painted. Farmers' Bulletin No. 474 entitled "The Use of Paint on the Farm," covers this and other painting problems so thoroughly that the reader is strongly advised to ask his congressman for it, or write the Secretary of Agriculture, Washington, D. C., for a copy. The following paragraph is quoted from this bulletin:

"There is probably no one point more neglected by the average farmer than the judicious use of paint, not only on his house and outbuildings, but also on machinery and various agricultural implements. It is, perhaps, the rule rather than the exception in some sections to see houses and agricultural implements on the farm sadly in need of paint. The idea seems to be prevalent that paint is used solely for ornamental purposes, and its use is regarded as a luxury rather than a necessity. While paint does, of course, serve the purpose of improving the appearance of property, it is far more useful for protection than for ornament. A small amount of money and work expended in keeping a valuable piece of machinery properly painted will add greatly to the length of its life. The same may be said of buildings. Another useful object which is accomplished by painting is the improved sanitary conditions of buildings and outhouses. It is not the purpose of this bulletin to give instructions for artistic painting, or even for doing the class of work which would be expected of a first class master painter, for such work cannot be expected of one engaged in another business. But any man can do an average job of painting and can thereby not only improve the appearance of his place but can add to the durability of all articles painted. The cost of such work is small, the necessary equipment is not expensive and, with proper care, will last a long time. An attempt will be made to give directions for the care of paint and of the necessary points used in its application and for the proper selection of different paints for various purposes, their preparation and application, and their approximate cost."

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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ARE YOUR CROPS PROTECTED ?

You know the deadly work of hail. Within a few hours all your crops can be destroyed. Your income is gone. Your labor is wasted.

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Bumper Grain Crops Good Markets—High Prices

Prizes Awarded to Western Canada for Wheat, Oats, Barley, Alfalfa and Grasses

The winnings of Western Canada at the Soil Products Exposition at Denver were easily made. The list comprised Wheat, Oats, Barley and Grasses, the most important being the prizes for Wheat and Oats and sweep stake on Alfalfa. No less important than the splendid quality of Western Canada's wheat and other grains, is the excellence of the cattle fed and fattened on the grasses of that country. A recent shipment of cattle to Chicago topped the market in that city for quality and price.

Western Canada produced in 1915 one-third as much wheat as all of the United States, or over 300,000,000 bushels. Canada in proportion to population has a greater exportable surplus of wheat this year than any country in the world, and at present prices you can figure out the revenue for the producer. In Western Canada you will find good markets, splendid schools, exceptional social conditions, perfect climate, and other great attractions. There is no war tax on land and no conscription. Send for illustrated pamphlet and ask for reduced railway rates, information as to best locations, etc. Address

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Early Corn Cultivation

PROPER cultivation is essential to the successful growing of corn or kafir. The primary object of cultivation is to destroy weeds. Unless kept in check, weeds will smother the crop. Every corn grower knows what happens when a spell of wet weather keeps him out of his corn field for any considerable period of time while the corn is small.

The careful corn grower kills many weeds before the crop is planted. Cultivation in advance of planting can be more cheaply and quickly done than after the crop is planted. This advance work is of great advantage to the corn grower because on the general farm corn-cultivating-time is a busy season and many jobs are crowding the workers.

In the early cultivation of corn it is a cardinal principle to cover as large an area as possible at just the right time. In spite of what may have been done in killing weeds before the crop was planted, there will be plenty of seeds left and as the soil becomes warm they will germinate and grow rapidly, frequently outstripping the crop.

For rapid work in destroying these germinating weeds, the ordinary spike-tooth harrow is a tool that can be used to good advantage on both listed and surface planted corn. The surface planted corn can be harrowed before the crop is up. The weeds will be just in the germinating stage, many of them not even having the shoots above ground. Harrowing will kill a very large proportion of them. If left for the cultivator to destroy later, they will do considerable damage while the corn is small and it will be a more expensive job to get rid of them. In addition to killing the weeds, the harrow puts the surface in a fine state of tilth.

Corn cannot be safely harrowed just as it is coming through the ground for the shoots are very tender at this time. When it is two or three inches high the harrow can be used if the weeds have not grown too large. The weeder is a tool made specially for this work and is a most valuable implement for the corn or kafir grower. Its teeth are not so rigid as those of the harrow and it can sometimes be used when the harrow would injure the crop.

The breaking of the crust following a dashing rain can be quickly done with either the harrow or weeder. This has a wonderfully stimulating effect on the growth of the crop. A free circulation of air in the soil is necessary and this cannot take place when the surface is hard and compact. Maintaining this loose, open condition of the surface soil, is another important purpose of cultivation. It encourages the development of plant food because warmth, moisture and free circulation of air are factors in promoting these activities in the soil.

There is not so much advantage in using the harrow on listed corn because the lister cultivators now in use are admirably adapted to the early cultivation of corn or kafir in lister rows. One who knows how to adjust this tool can do a splendid job of destroying weeds in small corn. The first time over the disks should be set to throw the soil from the corn. The small shovels should be adjusted so as to stir the soil very close to the row. This first time over is the only chance to break up the soil close to the growing plant. It helps warm the soil in the bottom of the furrow and lets the air in around the roots. Enough fine soil can be allowed to sift around the plants in the row to cover and destroy weeds just starting. It will pay well to study carefully the adjustment of this tool in going over the listed crops the first time. Weeds that get well started in lister rows are hard to kill later.

A study of methods actually being followed is of interest. The Federal Department of Agriculture has made an extensive investigation of corn growing practices in various parts of the country and in a recent publication the results were given. In Kansas, Russell County was selected for the study, the methods there being typical of those followed where listing is the common practice. The report says:

"The rows are usually 3 1/2 feet apart, with one stalk every 18 or 20 inches. In this operation most of the land is broken, but there is a strip directly between the rows which is not plowed but is afterward broken up during the cultivation. After the corn is up, the first cultiva-

tion is given most often with a 4-horse, 2-row disk cultivator, designed for cultivating listed corn. At this cultivation the dirt is thrown away from the corn and the ridges made higher. These ridges are next harrowed with a spike-tooth harrow or a plank drag, and partly torn down. The next cultivation is given with the same implement, with the disks adjusted so as to throw the soil to the corn, tearing down the ridges between the rows. The next and last cultivation usually is done with a 2-horse, 4-shovel or 6-shovel cultivator, leaving the land about level."

No matter what the method of planting or what tools are used in cultivating, the important point is to do the early work promptly and thoroughly. The best corn growers have found the harrow and weeder especially adapted to this early work.

Acid Soils Require Lime

Alfalfa and clover refuse to grow on acid soils because the bacteria that aid legumes by supplying them with available nitrogen from the air cannot thrive in these acid soils. Such soils are found in Southeastern Kansas and lime is the common way of correcting them. Apply lime now to fields that are to be summer fallowed for fall seeding to alfalfa or clover. If the soils are acid the lime should be applied to the preceding crops or from six months to a year before seeding to the legumes. This allows sufficient time for the weathering agents to start the sweetening of this kind of soil.

The safest form is finely ground limestone because it cannot possibly injure the soil. Careless handling or too heavy applications of burnt or quick lime will injure the soil by burning out the organic matter. The amount of ground limestone to apply largely depends on the previous handling of the soil but usually varies from two to four tons to the acre. One application in a four or five year rotation is sufficient for most soils.

The lime should be used as a top dressing on plowed fields and then it should be thoroughly worked into the soil with a harrow or disk. It may be scattered from a wagon with a scoop, spread with a manure spreader, or applied by means of a regular lime drill.—R. I. THORCK-MORTON, K. S. A. C.

Cedar Apple Rust

The cedar apple rust belongs to a class of fungous plant diseases called rusts, which require two hosts upon which to complete the life cycle. In the case of cedar apple rust it is the red cedar and the apple tree.

Gelatinous masses of tissue grow out and project from the cedar galls in the spring when the warm rains come and from these masses spores are developed. These are noticeable at present on the cedar tree. The wind distributes the spores, and any that by chance get on an apple tree will cause an infection which produces a spotted condition of the foliage and a roughened pimple-like condition on the blossom end of the fruit. In severe cases this disease may cause premature defoliation but does not cause the direct rotting of the fruit. It merely produces a blemish on the fruit which reduces its market value.

If the general spray schedule is carefully followed the damage to the apple crop from this fungous disease will be a negligible factor.

There are three other methods advised in some states for controlling the disease—cutting down the red cedars, choosing a place for the orchard that is not close to red cedars, and planting varieties of apples resistant to rust. The first method is not to be advised in Kansas because the red cedar is far too valuable to be sacrificed and, furthermore, this species of evergreen is not abundant enough to require such drastic control measures. The planting of the red cedar is being encouraged because it is one of the most important evergreens in Kansas and therefore holds a prominent place in the list of trees recommended by the department of forestry of the agricultural college.

When new orchards are planted, one should see that red cedars are not planted nearby. For a windbreak, plant the Austrian pine—it will serve the same purpose and is not affected by the cedar apple rust.—L. E. MELCHERS, K. S. A. C.

Allen County Silage Tests

The relative desirability of the different crops for the silo has been tested by the members of the Allen County Experiment Station during the past two years. It was assumed in the start that there was little difference in the feeding value of silage made from cane, kafir, and corn, so tonnage yields only were considered. Three years ago in that county, in most other parts of Eastern Kansas, most of the silo owners preferred to fill their silos with corn, but kafir is coming more and more into favor. It is adapted to a wide range of soil types, stands dry weather better than corn, and is much easier to handle at filling time. This last point is of considerable consequence, for labor is always an important consideration in filling silos. Many object to the use of the silo on the ground of the difficulty in securing help at filling time.

A bundle of corn is bulky and difficult to get to the cutter. In Eastern Kansas at least, cane gets so tall as to be difficult to handle. The kafir bundle is compact and stiff, of medium length, and requires a minimum of labor in getting it from the field to the cutter. Even self-feed machines usually require a man at the table when corn is being cut, but kafir bundles can be fed into these machines direct from the wagon.

W. E. Watkins, agricultural agent of Allen County, in his report summarizes these silage crop tests made on eight different farms. The average tonnage yield per acre of Orange cane for 1914 and 1915, was 11.08, black-hulled kafir 9.73, and corn 8.87. Some of these test plots were on upland and some on bottom land. A number of other crops were grown, but these three were the only ones having any special merit as silage crops.

In order to make a study of the best type of kafir for the silo, a head-to-row test was conducted on the farm of Curtis Strong. Thirteen heads were planted, the seed from each head being planted in a separate row. The seed had been selected from the field in the fall of 1914. There was no difference in the soil or in the handling of the rows. A few plant characters were closely studied for the purpose of noting their relation to the acre yield of forage. Among these were the height of stalk, length of head, and number of blades. The stand was taken into consideration in estimating the acre yields. The field presented a curious sight late in the season, because of the differences in height and foliage. A study of the table given in the report, showed that the heights varied from six feet two inches to eight feet. The head lengths ranged from eight inches to ten and one-half. The number of leaves to the stalk from eight to eleven, and the acre tonnage yields from 10.28 to 18.74. In determining these figures, a number of stalks in each row were averaged.

The heaviest tonnage yield was in a row having stalks seven feet six inches in height, ten and one-half inch heads, and eleven blades to the stalk. Such a test as this suggests the possibilities in improving the crop by breeding. In commenting on the test, Mr. Watkins stated that a heavy stalk from seven to seven and a half feet tall, with plenty of leaf surface and large, uniform heads, seemed to be the best type where large yield of forage is desired. Mr. Strong, who did this row work, is very much interested in both kafir and corn breeding and wants to continue the work.

Undoubtedly kafir has a number of advantages over corn as a silage crop and this sort of work will develop and fix the best types to grow in different localities and for different purposes.

Depth to Cover Corn

Corn should be planted sufficiently deep to insure the kernels being placed in moist soil without danger of drying out. The depth is governed largely by the nature of the soil, by its moisture content when the corn is planted, and by the time of planting. As a rule, two to three inches is about right. On wet, heavy soils two inches, or possibly less, may be sufficient, while on light or sandy soils three, or perhaps four, inches is necessary for best results. Planting to this depth is often necessary in Western Kansas to prevent the soil around the corn from drying out. Corn need not be covered so deeply early in the season as when planted late, as the ground does not dry so early in the season dry out so rapidly. — C. C. CUNNINGHAM.

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Essentials

THE claims made for motor cars are varied and many.

You have been told of the speed of one engine; you have read reams of oratory on the great power of another engine; you have observed the stress laid on the virtues of multi-cylinder construction; elsewhere you have been confronted with a wide sweeping array of superlatives carefully substituted for concrete and pertinent facts.

To make a thoughtful and intelligent selection, it is necessary to sift the essentials from the non-essentials, because there are a lot of things said that are not important, even if true.

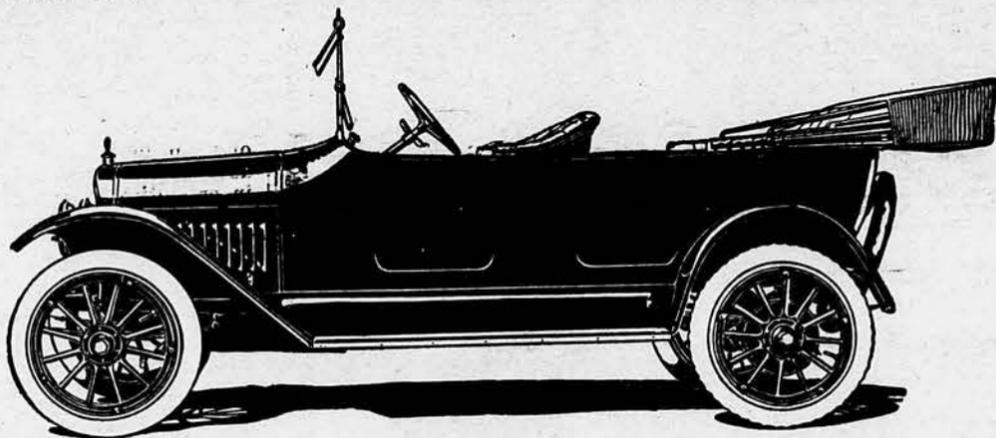
Deciding on a motor car for your particular needs is just the same as making any other kind of a decision. You must disregard the unimportant elements and weigh the remaining facts against your individual requirements.

If you are interested in a car that is inexpensive in first cost and after-cost, you will want to investigate the Maxwell. If you attach importance to sturdiness and reliability, you should know that the Maxwell is the World's Champion Endurance Car—it having traveled 22,000 miles last January without repairs, re-adjustments or without a single motor stop.

If you are concerned with gasoline and tire mileage, you will recall that on this 22,000-mile endurance run the Maxwell stock touring car averaged almost 22 miles to the gallon and over 9,000 miles per tire.

In the end you must be the judge, but just remember that there must be a definite reason for a production approaching 80,000 Maxwell cars this year, and for 40,000 having been sold last year in American farming districts alone.

Brief Specifications — Four cylinder motor; cone clutch running in oil; unit transmission (3 speeds) bolted to engine, 1/4 floating rear axle; left-hand steering, center control; 56" tread, 103" wheelbase; 30 x 3 1/2" tires; weight 1,960 pounds. *Equipment*—Electric head-lights (with dimmer) and tail-light; storage battery; electric horn; one-man mohair top with envelope and quick-adjustable storm curtains; clear vision, double-ventilating windshield; speedometer; spare tire carrier; demountable rims; pump, jack, wrenches and tools. *Service*—16 complete service stations, 54 district branches, over 2,500 dealers and agents—so arranged and organized that service can be secured anywhere within 12 hours. *Prices*—2-Passenger Roadster, \$635; 5-Passenger Touring Car, \$655. Three other body styles.



Touring Car, completely equipped, including Electric Starter and Lights, \$655, f. o. b. Detroit. Four other body styles.

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A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases on Parasites, Thrush, Diphtheria. Removes all Bunches from Horns or Cattle.

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For the up-to-date, practical hog raiser. Designed and made by specialists—best and most satisfactory can buy. Admits direct sunshine and makes hogs healthy. Made of galvanized steel, will not leak, rust, or warp.

Blue Prints of New Hog Houses Free. Write today for our FREE hog house plans—4 complete plans prepared by experts. Embody all modern features—full details and specifications. Worth money to you. We'll tell you about our other specialties—Chief Steel Ventilating Cupolas, New Chief Ventilating Windows, Chief Sidewall Windows, etc.

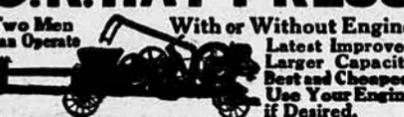
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Write for Illustrated catalogue describing this and our Horse Power Presses, Engines and Pitless Scales. Address SCOTT HAY PRESS CO., 1210 Indiana Ave., Kansas City, Mo.




EARLY LAMB EXPERIENCE

EARLY lambs have been profitably produced for several years by H. C. La Tourette of Decatur County. His registered ewes have produced a 150 per cent lamb crop this year. Two of his neighbors have recently started in sheep, one with a flock of 800 ewes, and the other with 250. Both are doing well.

Mr. La Tourette says the lambs dropped in January or February require a little more care than the ones coming in April or May, but it is a time when he does not have much to do and the extra care is paid for by the increased returns from the early lambs.

"Last season," writes Mr. La Tourette, "I raised 75 lambs dropped from February 15 to March 15. They sold June 29 at \$9.00 a hundred on the Kansas City market, weighing 63 pounds each. Another advantage of the early lambs is that they are kept in feed yards or on rye or some other pasture near the barn while young, so there is no loss from dogs or wolves. By the time spring work begins, they are large enough so that they require but little attention.

"In order to handle these early lambs successfully I have my shed well bedded and stop all cracks to keep out the wind and snow. The shed has an opening on the south side two and a half feet wide, running the entire length of the building. Muslin curtains are provided that can be rolled down at night or in severe weather.

"A young lamb always likes to lie down close to the side of the building so as to be protected from being run over by the older sheep. I nail a 12-inch board around the building close to the ground and fill in back of it with straw or litter. This adds greatly to the comfort and security of the young lambs as they will lie on this narrow bed and are not disturbed by the older sheep.

"I have some extra panels and can partition off sections of the shed. Each morning I take out the new-born lambs and their mothers and place them in one end of the building, moving the panels back as the flock increases. I also have a number of small pens two and a half by three feet in size, to put ewes and lambs in if necessary. I keep gallon syrup pails handy and in case lambs come in very cold weather I fill a pail with hot water, tie it in the corner of one of the small pens, and place the lamb near it. I raised 180 lambs during the coldest weather in January this year, and lost only three or four from chilling. This would not have been possible without the use of the pails of hot water. Jugs would be better than the pails.

"To succeed with sheep it is necessary to provide suitable feed. This is easily done in this part of the state by storing silage, and growing alfalfa on the bottoms. A little bran can be fed with profit when rye or wheat pasture is not available."

New Service Lien Law

There seems to be some misunderstanding regarding the new Kansas service lien law. This law gives a lien on the mare from the time she is bred and expires in twelve months if the mare fails to produce a colt and in twenty months if she produces a colt. How-

ever, mares bred, together with the name of the owner, must be filed with the Register of Deeds of the county where mares were bred before the lien becomes effective. The fee for filing is fifty cents a list, and each list may contain as many as one hundred mares.

The law provides, further, that a mare cannot be sold, traded, or removed from the county after breeding until the owner of the mare, at the time of breeding, has settled for the service fee or has secured, from the owner of the stallion to which she was bred, written permission for such sale, trade, or removal. Selling, trading, or removing a mare from the county where bred without complying with this requirement is punishable by a fine of from \$25 to \$100. But it must be remembered that in Kansas a lien does not apply, and service fees for a stallion cannot be collected unless the stallion in question is registered by the State Live Stock Registry Board at Manhattan, Kansas, from which copies of the lien law may be secured without charge.—C. W. MCCAMPBELL, Secretary Kansas State Live Stock Registry Board.

Work the Stallion

Too many of our pure-bred stallions are spoiled by being hampered. To be a success as a breeder, a horse must be in a vigorous condition. If he is not fit to work, he is not fit to sire work horses. A horse must have plenty of exercise. There is nothing better than performing a definite amount of regular work each day. There is seldom much difficulty in keeping a stallion that is broke to work, in good condition. This may not be practical in many cases, and where it is not the horse must have a good-sized yard or paddock in which to exercise. In addition a certain amount of road work should be given each day.

It is a mistake to keep a horse hog-fat, but it is possible to go to the other extreme. The ideal is to have the horse in good flesh and preferably gaining somewhat at the beginning of the breeding season. Feeding of corn exclusively is not a good plan as it is too heating. Oats make a safer grain ration, but corn can be supplemented with wheat bran and a little oil meal. A pound of hay to each 100 pounds of weight is enough. The common practice of keeping the manger full of hay is not a good one. The horse is almost sure to eat more than is good for him. There is more danger where alfalfa or clover hay is fed than where prairie hay is a part of the ration. The amount of grain will depend upon whether or not the horse is working. The horse at hard work requires about a pound and a half of grain to each 100 pounds of weight. Ordinarily the stallion will not require quite so much.

Worm Remedies

L. J. N. Wyandotte County, asks for a remedy for worms in sheep, also wants to know if borax is a good worm remedy for horses.

These inquiries are not very specific, but we are assuming that our correspondent refers to the stomach worm in sheep. This parasite causes serious losses in farm flocks unless measures are taken to keep them in check. It is a small, round worm about an inch in length, white or reddish brown color, and is found in the fourth stomach. These



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Absolutely Punctureproof

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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 Bureau of War Service. Our outputs limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer.

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Size	in.	Tires Tubes	Size	in.	Tires Tubes
32x4	14.50	\$2.20	32x4	14.50	\$2.20
32x4	16.50	\$2.10	32x4	16.50	\$2.10
32x4	18.75	\$2.30	32x4	18.75	\$2.30
32x4	15.75	\$2.20	32x4	15.75	\$2.20
32x4	16.75	\$2.35	32x4	16.75	\$2.35

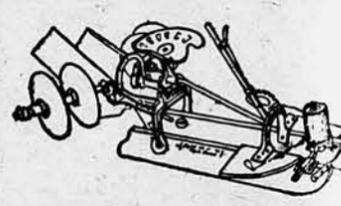
All other sizes not included in above list also furnished. Non-skid at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

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

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Will run lighter and steadier than any sled or wheel cultivator built; will throw dirt to or from corn. Will cultivate or BUST RIDGES with equal success. Price \$18.00, delivered. We make five different styles of cultivators. Write for catalogue.

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

forms may easily be overlooked by one unfamiliar with them, especially if there is much food in the stomach when the examination is made. By carefully examining the contents these small, thread-like worms will be found. When animals are seriously affected the worms will be present in large numbers. Mature sheep are usually able to resist the disease. They nearly always have a few worms. There are no serious results. It is among the lambs that the losses occur. There can be no success in sheep raising if lambs are allowed to become badly infested with stomach worms.

Prevention is the best remedy. The eggs of the worms are hatched in the pasture where they are dropped the year before. They hatch and crawl up the blades of grass and thus gain entrance to the lambs' stomachs. They are also more numerous in moist weather and in damp, marshy pastures. The drinking places become infested and if the lambs are allowed to graze in such pastures where sheep ran the year before they are certain to become badly infested with these worms.

Long before anything was known of the stomach worm it was recognized that sheep must have frequent changes of pasture. On the farms where few sheep are kept the lambs should always have fresh pasture proved for them. The early-dropped lambs are far less likely to be seriously affected. Patches of rape or other annual crops can be grazed and later in the season when the lambs are weaned they can be turned into the cornfield. If they are kept from running on pastures that are grazed with mature sheep there will be little danger of the lambs being injured by these parasites.

When a bunch of lambs is found to be badly infested they should be removed to a high and dry location and supplied with pure water. Gasoline is one of the most successful internal remedies. The dose for a lamb weighing from 60 to 100 pounds, is one tablespoonful shaken up in four ounces of sweet milk. The lamb to be treated should be kept from feed for ten or twelve hours and allowed no food or water for three or four hours following the dose. To be most effective this treatment should be given for three successive days. The usual practice is to shut the lambs up at night, giving them the dose about ten o'clock the next forenoon. They are allowed to graze in the afternoon and again shut from feed at night. In drenching a lamb it should be set up on its rump but its head must not be tipped back or it will strangle.

We never heard of borax as a worm remedy for horses. There are, however, scores of worm remedies, many of which are of little value. Worms seldom cause serious trouble where horses and colts are fed well and kept in vigorous, healthy condition. The following is a good formula for a horse condition powder: Pulverized sulphate of iron, four ounces; pulverized nitrate of potash, two ounces; ginger root, two ounces; gentian root, two ounces; nux vomica seed, two ounces. The dose is a heaping teaspoonful in the feed two or three times daily. Turpentine is frequently given as a worm remedy. The dose for a horse is from one to two ounces, diluted with milk, olive oil, or raw linseed oil. It should be given once daily for two or three days, always on an empty stomach, and should be followed by a purgative. One or two pints of raw linseed oil may be given a horse for this purpose.

Silage for Horses

Silage has been looked upon with disfavor as a horse feed, but each year more silo users seem to be finding that silage can be used to cheapen the cost of wintering horses. This use will probably enter into the calculations of a great many who will build silos the coming year. Horses cannot consume as large quantities of silage as cattle, and it is important that only silage of good quality be given them. At the Missouri Experiment Station silage has been experimentally fed to horses during the last two winters with very favorable results. There was one exception, that being the case of a three-year-old mare which refused to eat the silage at first. When her other feed was reduced she began to eat it, but soon after had to be taken out of the test because of having distemper and indigestion. With this exception, the horses that were fed the silage were more thrifty, came through the winter in better condition and cost less than those fed the usual wintering rations.

One of the breeders, with whom the college has kept in touch, has been feeding silage to about 100 draft horses for twenty-five years without any sickness which he thinks could be directly charged to silage. During the breeding season he feeds silage to the mares as usual, but

gives none to the stallion, because he has difficulty in getting the mares in foal when the stallion was fed on silage. At other times he feeds eight pounds of silage at each of the three feeds per day to his aged stallions in addition to some hay and grain. His two-year-old stallions get 20 pounds of silage a day, and the yearlings about 15 pounds in addition to some hay and grain, while the mares with foals at side receive 20 pounds. At weaning time this amount is divided and about 15 pounds is given to the mare and 5 pounds to the colt, which is given more as it grows and becomes accustomed to this feed until at a year old he is getting 15 pounds of silage a day.

One importing firm has fed silage for five years, following about the methods just outlined, and reports excellent results and a reduction in the need for veterinary services.

Some of the horsemen who have fed inferior silage have not had such uniformly good results, but it is a poor plan to give a horse moldy or rotted feed of any kind. Silage that has been frozen or that was made from immature corn is regarded with suspicion. Some owners have thought that their horses died as a result of being fed such silage, and while the station has not been able to learn definitely that silage was the cause of death in these cases, or find out exactly how the supposed poison acted, it is well to take every precaution.

As silage is low in dry matter, and the horse has not sufficient digestive capacity to live entirely on such bulky feed, it is important to remember to use alfalfa, cowpeas, or other legume hay, or perhaps even a little grain for horses that are not at work, while growing horses, or horses at work should certainly have grain.

The 1915 Yearbook

The 1915 Federal Department of Agriculture Yearbook has just been received. This is a book of 600 pages and contains many interesting articles as well as much statistical information. Requests for the book should be made to members of congress.

Among the articles on cooperation are: "The Cooperative Purchase of Farm Supplies"; "A Successful Rural Cooperative Laundry"; "How the Department of Agriculture Promotes Organization in Rural Life"; and "How the Whole County Demonstrated", the last an account of how the business men and farmers of two southern counties got together to increase community prosperity. "How Engineering May Help Farm Life" deals at once with improving the sanitation of the farm and with increasing farm efficiency through the use of water systems and machinery and through better arrangement of the farm plant with reference to its manufacturing problems. The application of farm management, or business principles, and efficient marketing to the farm are discussed in such articles as: "Some Outstanding Factors in Profitable Farming"; "Unprofitable Acres"; "Pointers on Marketing Woodlot Products"; "How Hawaii Helps Her Farmers to Market Their Produce"; and "How Seed Tests Help the Farmer." Some of the methods employed for encouraging the next generation to adopt modern agricultural methods are outlined in the articles on the boys' pig club work and poultry club work in the South, which cite striking examples of what boys and girls have accomplished under the guidance of the specialists of the Department and the state colleges.

The meat question is dealt with in three articles: "Animal Disease and Our Food Supply"; "Economic Importance of the Federal Inspection of Meats"; and "Improvement and Management of Native Pastures in the West." There are also a number of other papers of general interest, such as that on "Winter Crow Roosts" and "Stories of the Atmosphere," "China a Fruitful Field for Plant Exploration," etc.

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Have you planted a bed of flowers in the garden this spring? If not, do so without further delay. If you have, plant some more. The wonderful influence of a garden of flowers is a real pleasure to the owner, not in material profit in dollars and cents, but in happiness from the satisfaction you will obtain—and that is what you spend money for. Help to make the world a little brighter for yourself and your neighbor.

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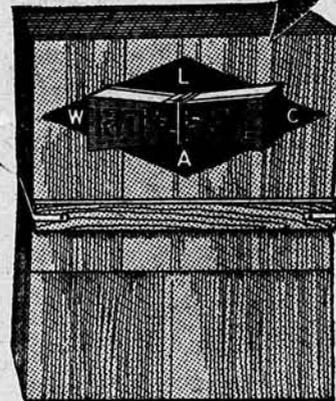
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You can have a forty-five year roof with ordinary cedar shingles, or a hundred year roof with RITE-GRADE Red Cedar Shingles, if properly nailed—because they are rigidly inspected for NO SAP, which means no rot, for grain, for thickness, for drying, for size; in a word, RITE-GRADE means an honest shingle as sold—true to specifications. Demand RITE-GRADE of your lumber dealer, always. Nature guarantees her Red Cedar—the Association guarantees the quality.



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My Dip is a positive lice killer. I don't care how lousy your hogs are, dip, spray or sprinkle them with my preparation and you will get rid of these pests. Add it to the hog wallow occasionally during summer. It also kills ticks on sheep; in fact, my Dip will stamp out all parasitic skin diseases.

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1 gallon makes from 70 to 100 gallons solution

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Dr. Hess Fly Chaser

It does not gum, color or blister. Makes stock comfortable.

DR. HESS & CLARK, Ashland, Ohio

One gallon cans \$1.00
Smaller pkgs. as low as 25c (except in Canada and the far West).

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ON THE MARKET FOR 25 YEARS
Clean up, disinfect with "Car-Sul." Kill the lice on your stock with "Car-Sul." No better disinfectant ever made for general use around your farm and home than "Car-Sul." Your druggist or hardware merchant has it or direct from us with freight charges paid at \$1.25 for 1 gallon, or \$5.00 for 5 gallons. Don't take a substitute. If your dealer does not have "Car-Sul," write us. Take nothing but the original package.
THE MOORE CHEMICAL CO., Room 15 Simpson Bldg., Kansas City, Mo. 5 GAL \$3.99 DELIVERED

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Proper Milking Important

It is important to milk cows completely. Milk left in the udder at one milking period remains there until the next. Complete milking will result in getting from a half pint to a pint more milk at each milking during the lactation period. The more a cow is made to produce the more capable she is of keeping up the performance.

Strength, physically, is gained by exercise and using strength. An athlete who uses his strength properly becomes more proficient and capable of performing greater feats. The same is true, to a great extent, with the milk-producing qualities of a dairy cow. When she is milked completely each time her capacity to produce the maximum quantity is maintained and she will "get the habit" of transforming her food into milk and butter fat instead of so much into body fat and growth.

Careless systems of milking will be just as detrimental to the possible performance of a cow as careless systems of exercise will be to an athlete who is training for physical strength and endurance. Anyone knows when he wants to dry off a cow, even in the flush, that he simply has to leave part of the milk in the udder at each milking, skip once in a while, and in a short time the desired result is accomplished. The production of milk is decreased and kept down just the same when the cow is not milked completely.

In order to get the best results in hand-milking it is essential that the cows be milked by the same persons at each milking time. A frequent change of milkers means loss in milk every time a change is made. In some dairies where there are several milkers the practice is for each milker to sit down to whatever cow happens to be next in order instead of the same persons milking the same cows each time. This is a poor practice. Certain cows should be assigned to each milker and as few changes made as possible. Then a cow becomes accustomed to the milker and the milker to the cow. The result will be more milk. Secretion of milk is largely a nervous process.

Excitement is another factor that will make it impossible for a cow to give all the milk she is capable of yielding. Everyone has experienced sensations of fright, when the mouth would be dry, and the saliva refuses to flow. It is the same with the secretion of milk when the cows are frightened or excited.

Sufficient time ought to be taken to milk the cows completely even if so much other work on the farm cannot be accomplished. A little extra time required to work and manipulate the udder by hand after the usual amount of milk has been obtained will pay dividends and often makes a profit where otherwise there would have been a loss. In order to do complete milking, conditions must be favorable in the barn, the cows treated with kindness and regular milking hours practiced.—W. H. UNDERWOOD, in Pacific Dairy Review.

Clean Barn Not Expensive

Every up-to-date dairyman takes pride in the appearance of the place where his cows are housed and milked. Many years of experience have shown that the following points must be considered:

Milk drawn from filthy cows, or from cows kept in a stable that is not well lighted or ventilated, or that is filthy from an accumulation of manure, or milk exposed to foul or noxious odors cannot be lawfully sold or manufactured into an article of food for sale.

Keep the barn clean, well ventilated, well lighted and free from dust.

Whitewash the barn at least once a year. It will add to its appearance, increase its value, lighten the dark corners, and make it more sanitary.

It is desirable to have dairy cattle in a barn by themselves. The odor from horse stalls, filthy calf pens or hog pens is objectionable, because it will taint the milk when it is drawn.

When constructing a new barn, or if the old one is remodeled, see that the walls are smooth and that the ceiling is tight. The floor and the base of the walls should be constructed of cement in order that the liquid manure may be saved and removed.

Give the cow a chance to keep clean. She cannot do it if the stall is too long or too short or not high enough. Cow stalls should be so constructed that the

cows will lie with their heads in the manger, otherwise they will be compelled to step backward before lying down, in which case they have no chance to keep clean. A large gutter and adjustable stalls that line all the cows up to the gutter are important factors in keeping the cows and floor clean.

An abundance of bedding in the cow stalls makes for clean milk, clean, contented cows, clean floors, and the saving of the liquid manure. If bedding or other absorbents are placed in the empty gutter, the liquid manure will be absorbed and held at the bottom. To some extent that practice prevents the cows from soiling themselves.

The manure should be removed daily and the manger kept clean. Cobwebs should be swept down and bespattered walls washed.

Manure should not be placed against the barn or where the cows will be compelled to wade through it in going to and from the barn.

Even when the cows live out of doors in summer and are in the barn only at milking time, failure to clean the floor and gutter regularly will result in foul odors.

During the summer months cows should not be kept in the barnyard over night. They should have a clean place to lie.—Wisconsin State Dairy Commission.

Save Skim Milk for Feed

Setting the separator to skim rich cream saves more skim milk for feeding to the calves and pigs. The cream is sold on a butter fat basis and the skim milk it contains brings nothing. At this season of the year heavier cream can be skimmed than in the winter. Reducing the quantity of cream to a minimum also lessens the labor and expense of hauling it during the warm weather. It can be more quickly cooled and express will be saved in shipping as well. The skim milk which remains in the cream forms lumps of curd when it sours, and this is a disadvantage to the butter-maker. Creamerymen always prefer the heavier cream, and there is a place on the farm for all the skim milk produced.

Of course, those who cater to a sweet cream trade during the summer season sell by the pint or quart. Their trade calls for cream of a definite per cent of butter fat, and the separator must be set to skim the cream accordingly.

Wherever the grading system of cream buying is in operation every bit of skim milk sold in the cream is worse than wasted. Neither the buyer nor the seller is benefited.

Cow Testing Report

Records of cows in the Dickinson County Cow Testing Association which produced more than forty pounds of butter in the 30-day period ending March 31, 1916. "H" stands for Holstein; "J" for Jersey; "S. H." for Shorthorn; "R. P." for Red Polled.

Owner—	Pounds Milk	Per Cent Fat	Pounds Butter 80% Fat
George Lenhart, H.....	975	3.5	42.8
George Lenhart, H.....	906	3.7	41.9
George Lenhart, H.....	1,074	3.1	41.6
George Lenhart, H.....	1,080	3.1	41.9
George Lenhart, H.....	1,269	3.47	55.0
George Lenhart, H.....	1,287	3.43	55.1
Ralph Sterling, J.....	645	5.2	42.5
Ralph Sterling, J.....	756	4.3	40.1
Ralph Sterling, J.....	954	4.6	54.8
Ralph Sterling, J.....	576	6.2	44.6
Ralph Sterling, J.....	888	5.0	55.5
Ralph Sterling, J.....	699	5.1	44.5
Ralph Sterling, J.....	978	4.2	51.4
H. S. Engle, H.....	1,197	3.5	52.4
H. S. Engle, H.....	1,357	3.2	55.8
H. S. Engle, H.....	843	4.2	44.3
H. S. Engle, H.....	1,029	3.2	41.2
Will House, S. H.....	804	4.0	40.2
Will House, H.....	972	3.7	45.0
Will House, J.....	822	4.2	43.1
Dr. E. N. Farnham, H.....	1,056	3.8	50.1
Dr. E. N. Farnham, J.....	1,002	4.8	60.1
A. H. Diehl, S. H.....	1,185	3.4	50.4
A. H. Diehl, S. H.....	870	4.6	50.0
Mott & Seaborn, H.....	1,089	3.2	43.6
Mott & Seaborn, H.....	849	3.9	42.1
Mott & Seaborn, H.....	786	4.3	42.1
Mott & Seaborn, H.....	1,299	3.1	50.3
Joe Bryor, H.....	1,242	4.1	63.6
J. R. Collins, R. P.....	1,011	4.1	51.9
J. R. Collins, H.....	1,209	2.9	43.8
J. R. Collins, H.....	1,260	3.2	50.4
E. S. Engle & Son, H.....	1,008	3.8	47.9
E. S. Engle & Son, H.....	984	3.5	43.1
E. S. Engle & Son, H.....	1,113	3.1	43.1
E. S. Engle & Son, H.....	777	4.6	44.7
E. S. Engle & Son, H.....	900	4.1	46.1
E. S. Engle & Son, H.....	930	4.0	46.5
E. S. Engle & Son, H.....	1,044	3.7	48.3
E. S. Engle & Son, H.....	888	3.6	40.0
E. S. Engle & Son, H.....	822	4.5	46.3
E. S. Engle & Son, H.....	1,512	3.4	64.3
E. S. Engle & Son, H.....	1,731	2.79	60.4
A. B. Wilcox, H.....	1,263	3.6	56.8
A. B. Wilcox, H.....	1,347	3.0	50.5
A. B. Wilcox, H.....	1,449	3.0	54.4
A. B. Wilcox, H.....	1,272	2.9	46.1
A. B. Wilcox, H.....	1,779	3.64	77.0
A. B. Wilcox, H.....	1,646	3.5	72.0
A. B. Wilcox, H.....	1,194	3.52	52.5

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Kansas Farmer Dairy Club

Here Will be Found Information of Great Importance to Our Dairy Club Members

A NUMBER of the contestants in the Kansas Farmer Dairy Club are now beginning their records. The second one to start is Byron Allen of Butler County. His Jersey heifer presented him with a fine heifer calf, and he started his year's record April 11. M. D. Smith of Douglas County, began his record April 22. The first girl to start is Lela Mae Haynes, Rawlins County. Lela writes that her heifer is a grade Red Poll and is very gentle. She began the year's work April 24. Glen Romig of Shawnee County started April 26 with a grade Holstein cow, and Robert Perkins of Labette County, started the same day with a grade Jersey.

The interest in the Dairy Club increases as the members begin the actual work. Those who cannot start until later can make good use of their time in learning all they can about feeding and caring for the cow when she freshens. Cows that freshen late in August stand even a better chance of making a good year's record than those freshening in the spring. A cow gives her largest flow of milk early in the milking period, and if this period comes in the winter the prices received will be higher than those paid in summer. It is always difficult to keep up the milk flow in hot weather and when a cow has once gone down in the milk produced it is hard to get her back again. The best dairymen usually plan to have most of their cows in full flow of milk during the fall and winter season.

When the club member's cow freshens the real work begins. The milk must be weighed at each milking and the weight recorded on the milk sheet. These blanks will be sent as soon as you report that your cow is fresh. In keeping this milk record, the totals must be carried forward from column to column. At the end of the month the record will show the total pounds of milk the cow has given for that month. Of course, the first month's record may be only a part of a month, but the last month's record of the year will supply the missing days, so that the year will be complete. For example, in the case of Glen Romig, who started April 26, the April record will have only five days, but his year's record will close with the night milking April 25, 1917, making a full year. Where the record starts past the middle of the month the butter fat test for the following month will be used in calculating the total butter fat for the fractional month. When the milk record is complete and ready to turn in, it will show in addition to the total pounds of milk for the month, the butter fat test and the total pounds of butter fat produced. This will furnish a problem in percentage, which will be something like this: A cow gave in one month 924.3 pounds of milk; the average butter fat test was 3.3 per cent; how many pounds of butter fat were produced.

The keeping of the feed record involves the weighing of the grain fed at each feed. This can be done with the same scale that is used in weighing the milk. If a mixture of several grains is fed, it

is not necessary to put down each day the exact amount of each different grain. The mixture should be made up by weight. For example, 100 pounds corn chop, 50 pounds bran, and 5 pounds cottonseed meal, might be carefully mixed in a large feed box. This is in the proportion of four parts corn chop, two parts bran, and one part cottonseed meal. If 49 pounds of the mixture is fed in a week, four-sevenths or 28 pounds will be corn, two-sevenths or 14 pounds bran, and one-seventh or 7 pounds cottonseed meal. The cost of each of these different feeds can be determined and recorded for the week. It is not necessary to weigh the hay and other roughage regularly. This can be estimated. It is a good plan to weigh some hay or roughage occasionally so as to get some idea of how much a forkful of hay weighs. When the cows are on pasture this fact should be noted on the feed record.

It is important to keep the records as accurately as possible. If a cheap, unreliable scale is used for weighing, the milk record will not be right and the cow may be charged with more or less feed than she is actually consuming.



We want the members of the dairy club to form habits of accuracy in their work. They should know to a cent what it is costing in feed to produce a pound of butter fat or a gallon of milk. The scale illustrated on this page is the best kind to use. There is a red hand on the dial that is movable. By loosening a screw it can be set so as to stand at Zero when the milk pail hangs on the hook. This hand will then show the amount of milk in the pail. The scale illustrated can be purchased with the graduations in

ounces or in tenths of pounds. It is much more convenient to use the decimal graduations.

From now on this page will be devoted to the interests of the Kansas Farmer Dairy Club. Members should preserve every article pertaining to the dairy club, adding to those which have been saved from back numbers those which will appear in this space. This can be most conveniently done by pasting the articles in a scrap book. We want our boys and girls to use this space. Letters telling of the work will be of great interest to other club members. We will gladly answer any questions concerning the care and feeding of the cows or anything that pertains to the work of the club. It will be necessary for those now milking to take a sample of their milk on May 15 and send it to Manhattan to be tested for butter fat. Next week we will tell how to take this sample and how to mail it.

DO IT NOW

THERE are only 25 days left in which boys and girls can join this club. The membership blanks must all be in KANSAS FARMER office by June 1. This does not mean that you must be ready to start milking your cow June 1, but it does mean that you should talk to your banker at once and see whether or not he is willing to loan you the money to buy a cow to be used in the club work, and if he will, you should then write at once for the necessary blanks to be filled out and signed by you and which blanks are necessary for you to do the work of the club.

If you are interested in the club but for some reason failed to read about it at the start, write us at once, so stating, and complete information will be sent you promptly.

The interest shown by our young readers and the reception our Kansas Farmer Dairy Club plan has received at the hands of the bankers are very gratifying to us, and prompt us in here urging that every KANSAS FARMER reader—especially the boys and girls—know the simple requirements of the club and ponder the benefits to be gained by joining. If you could talk with those who have already begun their records, you would not be content until you, too, had joined and had started milking your cow.

Remember—you have only until June 1 to join the club. You can buy your cow and start your club record any time between now and September 1, 1916. The age limits for members are 12 to 18 years.

If you want fuller information on any point in connection with the Kansas Farmer Dairy Club, write Albert T. Reid, President Kansas Farmer, Topeka, Kansas.



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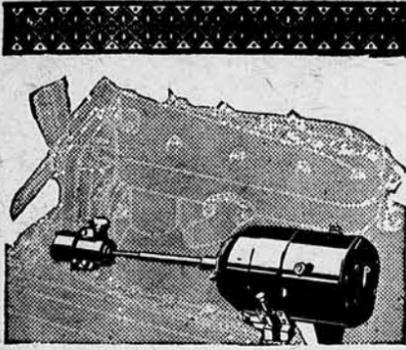
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POULTRY NOTES

Chickens hatched in May, if properly cared for, will develop into as good specimens as many that were hatched earlier.

Chicks that are hatched from this time on are apt to grow and thrive very rapidly, for as a rule, there will be no cold weather to give them a setback. Moral: Set another hen.

If brooder chicks show signs of leg weakness, let them get on the ground out doors as quickly as possible. This will do them more good than all the bone meal or lime you can give them.

The growing chicks should have free range to do well. While you can raise chicks to good advantage in inside brooders, by giving them extra care and attention, still they would do much better if they could have the free run of the grounds, to have all the green stuff and bugs that they want.

When the hens have quit laying for the season, should be good time to dispose of them. That is unless they are required for breeding purposes next season. It won't pay to have hens lying around all summer doing nothing. More is lost by keeping unprofitable fowls than in any other way. As soon as the hatching season is over, all the roosters should be slaughtered, except a few good ones that are needed for next season.

An inquiry comes to us as to the proper weight for broilers. The proper weight is considered to be about one and a half to two pounds each, and the sooner they are sold after that weight, the better it will be for the purse. You can get about twenty-five cents per pound for them at the present time. If broilers are kept after they are two pounds in weight, it won't pay for the added feed that is given to them. This refers to market stock and not to the pure breeds. In regard to the latter, the fancier does not wish to sell his growing stock till he finds out how good or how bad they are going to be. However, as soon as he can discover that some of them will never come up to Standard requirements, he should dispose of them as if they were common market stock, and if he sells them when they are about two pounds in weight he will get a better price for them than he will get when they are larger, for the feed he gives them later will have to be taken into account.

During warm weather it is well to keep pegging away at the lice question. Hens bothered with lice will not thrive well. When the hens are busy scratching themselves and working as well as they can in the dust bath, they are not doing much business on the nests. They cannot be covered with lice and lay well at the same time. The houses should be frequently sprayed with some good lice exterminator and the roosts painted with the same. If upon examination you find the birds covered with the pests, then give each one individual attention. Insect powder should be sprinkled in the fluff and rubbed to the skin. Some should be rubbed well into the feathers under the wings. These are the places where the lice are most apt to stick. One cannot be too careful about this work, and should give special attention to it. A little work now will save lots of hard work when warmer weather comes. Remember that a lousy hen is a losing proposition on any place.

Poultry writers are continually saying that hen houses should be whitewashed, so as to keep them sanitary and free from lice and mites. To many people this brings a vision of a slow and laborious task with a pail of whitewash and brush. To use a whitewash brush even on a smooth wall is no easy task, and when a person attempts to whitewash a lot of dirty-rough boards, full of cracks and knots and splinters, the job is so formidable that no one wants to go far with it. And if that was the only way of whitewashing a poultry house, it would be almost worse than useless to attempt it on houses of any size. But there is a better way, and that is to use a spray pump. With this, every part of the building, no matter

how rough the boards may be, can be reached. Have the liquid thin enough so that it can easily be sent through the pump, and force it into every crack and crevice. Any disinfecting solution, such as kerosene, carbolic acid, copperas, or even soap suds, may be added, so as to insure the destruction of vermin of all kinds. Spray pumps can be bought from fifty cents up, and a good compressed air pump of five gallons capacity for four dollars. A few pumps of air into this will cause the whitewash to spout out automatically at whatever you aim it. The writer bought one of these this spring and finds it very handy in spraying his fruit trees as well as in whitewashing his poultry houses.

Hens should have all the milk they can readily drink. No kind of food is better adapted to egg production. Some milk mixed with bran will not fatten them, but if given freely the vessels in which it is fed will need frequent cleansing to prevent them from becoming offensive. With milk to drink, fowls having free range will do well enough on one meal a day, as this will encourage activity in scratching and picking up what they can find. This meal should be given very early in the morning, and should be steamed clover or alfalfa, with a little corn chop mixed with it, and a little salt to make it palatable. The birds will have a ravenous appetite and they can eat all of this feed that they want without injury. Fresh milk is preferable for chicks, but sour milk or buttermilk can be used for mixing ground grain food for the adult fowls. For ducklings it matters little whether the milk be sweet or sour, as they will devour either voraciously. There is twelve per cent of solid matter in milk before it is skimmed and from six to eight per cent after skimming. Fresh milk does not contain any more egg-producing material than skim milk, except carbon, which is easily obtained from other foods. So give the hens all the skim milk and buttermilk they will drink. For young chicks sour milk as a good preventive of white diarrhea. Curds are good for young and old fowls and the whey can be given in liquid form or mixed with their mash of corn chop and alfalfa leaves.

You will have to be on the lookout for rats these days, or they will get away with most of your young chickens before you are aware of the fact. If there are rats on the place, try and get rid of them by all means, for they eat a lot of good feed anyway, even if they don't get your chickens. Rats are very intelligent creatures and it is a hard matter to poison them. We have just heard of a new way to catch them in a wire trap. A man writes, "I want to tell you that the best bait for a wire trap that I have ever found is a few good sized live rats. I caught one in a new trap, concluded to leave it there a few days, thinking it would probably scare the others away. Imagine my surprise the next morning to find seven or eight very large rats in the trap. This gave me an idea, and killing part of them, I left the others in the trap as bait, putting a large meat bone in with them. I made a good catch this way every night until I got all of them. I loaned a neighbor two of my catch for bait, and the next morning he had sixteen, completely filling a large wire trap. He caught over a hundred, using the live rats as bait every night. A good many have tried it with good success. If rats are bothering you, get a wire trap, put in a fresh meat bone and then use the bone and one or two rats and you will get them." The catching of the first rat will be the hardest part of this problem, for but few will have neighbors that will have live rats to loan. We hope it may help someone to catch chicken-killing rats, who may have tried other means of catching them and failed.

Save Your Chicks—Free
Send the names of five poultry raisers to The Wight Co., Box 18, Lamoni, Iowa, and they will send you a free sample of Chictone (a positive preventive of White Diarrhea), enough to save from 50 to 75 chicks. They will also tell you how you can get a full sized 50c box absolutely free.—(Adv.)

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

"Concrete for Permanence"

DEWEY PORTLAND CEMENT

Sold by Dewey Dealers Everywhere.

40,000,000 BABIES

Died in Kansas last year. Not real babies—but little baby chicks. And by losing them, Kansas lost thousands—yes, millions—of dollars worth of real valuable eggs and meat—lost it all in one year. Think of it!

A positively needless loss, too. For, of the forty million lost little chicks, fully 34,000,000 could have been saved, had they been raised on

OTTO WEISS CHICK FEED

Made to make chicks healthy and grow twice as fast! Made of oats, wheat, meal, beef, bone and "teeth" (grit). Aids digestion. Put up in 10, 25, 50 and 100-lb. sacks. At your dealer's. Write for free circulars.

OTTO WEISS COMPANY, Wichita, Kan.

TRACTOR BARGAIN

I have a big bargain to offer in a new All-Work tractor, made by the Electric Wheel Co. Used only to plow ten acres. Cost \$1,200 cash. Will sell for \$900 cash.

Ed. H. Witte, Sixteenth and Oakland, Kansas City, Mo.

White Plymouth Rocks

Hard to beat as all-purpose fowls. Excellent layers, with yellow legs and yellow skin. Eggs, \$2 per 15, \$5 per 45, express or postage prepaid. Have bred them exclusively for twenty-four years.

THOMAS OWEN, Route 7, TOPEKA, KAN.

ONE SCHOOL'S ACTIVITIES

Covers Both Educational and Social Needs

NEAR Lowmont in Leavenworth County, is a district school administering the needs of the pupils educationally and socially as well. The school is also the social center for the community. The building is furnace heated, having two rooms which can be thrown together, and it is here that many good times are enjoyed and helpful neighborhood meetings are held.

The teachers—Miss Rose Ode and Thomas Cahill—have taught in the district several years, and will again take up their duties here next fall. Their success at Junction School is due not only to their efficient direction in carrying out the course of study outlined—they consider themselves a part of the community and that their duty is to promote every movement which will make the district a better place to live. We were recently told of an incident which serves to illustrate the faithfulness of these teachers. A Christmas entertainment was in the making and at the time the school vacation for the holiday season opened, there was still two days' work to be done for the affair. These teachers cheerfully spent the two days helping the boys and girls and their parents in arranging for the entertainment. Though not a requirement, the labor was gladly contributed. One teacher lives in the district, the other does not. We cannot imagine the non-resident having a hard time finding a home in the district for the eight months' school term.

During the school year of 1913-1914 a home industry class was organized and school credit was given for work done at home, one credit being allowed for ten minutes' work. There were twenty-two members in the class. The following year fifteen names were entered, but 48,000 credits were earned. The members petitioned the school board to cash the credits at twenty-five cents a thousand, the money to be used for a school library. Their request was granted and their names were placed on a roll of honor.

The district is also making its way to the top in the agricultural and home economics club work. In the spring of 1915, State Leader Otis E. Hall and County Agent Ross held a meeting in the school house, presenting the plans and work of the different clubs, at the close of which clubs in sewing, corn, poultry, and tomato growing were launched, with a total membership of fourteen. Six of these won country prizes for their work. One of the club girls, Katherine Martin, won first prize in biscuit-baking in the state contest at the agricultural college during Farm and Home Week.

Another line of activity in this district is the canning of vegetables for winter use. Demonstration work is done at the school and the same principles are applied by the children in the canning work done at home. Four of the girls, ranging in age from eleven to thirteen years, conducted a canning demonstration at the Leavenworth Fall Festival last October. This was one of the most attractive features of the festival. Misses Esther Roach, Gertrude Steinbach, Helen Mottin, and Marie Bonaly did this work under the supervision of their teachers. Four demonstrations were given each day for the benefit of the interested visitors, the methods of canning four different vegetables being shown. There was a popular booth, as it was the first time many who watched

them realized vegetables can be successfully canned.

This year the club work in the community has a membership of twenty-one boys and girls and with the increase in number has come increased interest.

Much credit for the work accomplished in this district is due the school patrons. They are unanimous for school improvement and consider nothing too good for their children. There is no limit to the possibilities in this community with so faithful and loyal a support for the untiring efforts of the teachers and the interest of the children.

A recent club meeting which was attended by more than 100 people, was planned by the girls' club, the chairman and secretary being between the ages of eleven and thirteen years.

Junction School is not a standard school but at the time of the rural supervisor's visit the few changes needed to standardize it were pointed out to the board members, and knowing the progressive and co-operative spirit that pervades the community, we feel sure it soon will be among our standard schools.

An improvement which is being contemplated in this school is the installation of "circus" seats to be used for social gatherings and meetings outside of school hours. These will greatly improve the view from the rear of the room. They will be so made that they can be taken down and removed conveniently.

Other improvements planned for recreation purposes are a basket ball court, grounds for horse shoe playing, and a baseball diamond.

Though not an imposing structure, in the work undertaken and accomplished the school is one of the best, and the general attitude of the community is excellent, which bespeaks steady and natural advancement.

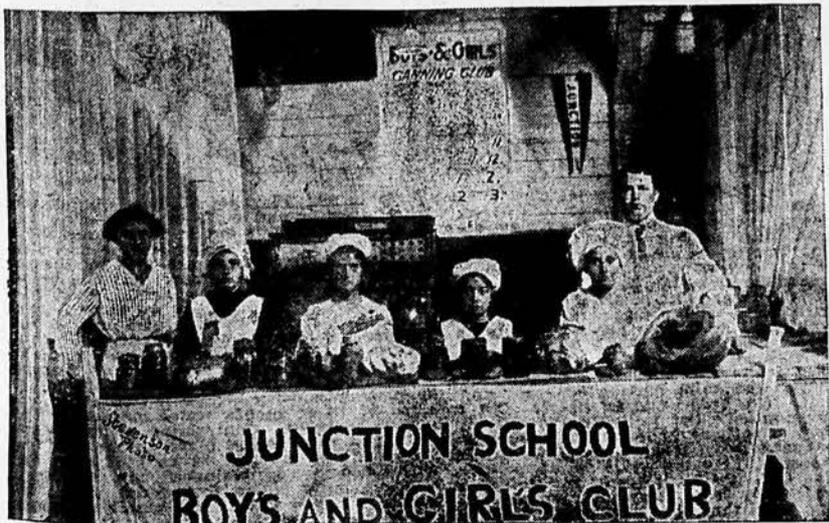
Gobblers Are Dying

Please answer in your columns the following questions: First, I have lost a gobbler from my six turkey hens, how long will the eggs be good for hatching after the gobbler's death? Second, in the last three years I have lost four gobblers, neither of them were over two years old. Can you have an idea why they are dying? Every one died in 12 or 18 hours after getting sick.—Mrs. J. T. JILKA, Lucas, Kan.

One gobbler is sufficient for ten or twelve turkeys, and one copulation fertilizes all the eggs in one laying clutch, and sometimes all the eggs laid in the season. Anyhow you needn't be afraid to set the eggs from the turkey hens now laying for they are pretty sure to be fertile. We would not very well answer your second question without more data as to the symptoms of the dead gobblers. Turkeys do not attain full size till they are two or three years old and the gobblers may have been too young for service.

In a note last week in reference to the reduction of the prices on pure-bred eggs it should be Modlin's Poultry Farm, Route 7, Topeka, and not the Modern Poultry Farm, although Modlin's farm is modern and up to date in every respect.

The time between night and morning feeds is, at best, rather long and can be shortened by feeding early and late. This is as essential as it is to feed little and often.



CANNING DEMONSTRATION BOOTH AT LEAVENWORTH FALL FESTIVAL



Your Opportunity State Thirty Million Bushels

—of grain was produced in Montana along the Great Northern Railway in 1915. Six years ago this same territory produced only Five Million bushels.

Big facts that make you realize that Montana leads the world in rapid development of farm lands. What is more, Montana leads in quality of grain produced—was awarded the Grand Prize on Exhibits of Grain over all the rival nations—over every other state—exhibiting at the San Francisco Panama-Pacific Exposition—winning a total of 513 medals.

Learn More About Montana

Then you will understand the wonderful tide of immigration to the Agricultural Treasure-State where every furrow is a pay streak for the profit-seeking crop-raiser. U. S. Land Commissioner, Washington, D. C. reports more than Twenty Nine Million acres Government and Indian lands in Montana disposed of to settlers in the past six years. During the past fiscal year, over Twenty Three Thousand original and final homestead filings have been made in that part of Montana reached by the Great Northern—a record absolutely unequalled by any state, in the operations of the General Land Office.

The homestead lands of agricultural value in Montana are going fast, but you have remarkable opportunity to purchase deeded land at very low prices. Come to the great, new, golden Montana country. Rich soil, favorable climate, convenient market and good prices for all you grow. Get the information—then decide for yourself. Send coupon today for

FREE—Montana Bulletin

Illustrated and fully descriptive, with experience-letters from settlers—affidavits of crop yields and information concerning opportunities offered home-seekers. Special Low Fares for Home-Seekers. Please use coupon.

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I will send this today to
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Please send me free booklets and full information regarding money-making farms along the Great Northern Railway in Montana.

GREAT NORTHERN RAILWAY

The "Jayhawk" Disc Cultivator

We are making a "direct from factory to you" offer on these Jayhawk 1 and 2 Row cultivators. None better made—each one guaranteed. Exclusive features such as easy adjustment of discs

1 Row \$1700
2 Rows \$2500

and shovels, patent roller leveling device that absolutely prevents binding, new roller connection taking care of any variation in width of rows, etc., puts the Jayhawk in a class by itself.



Our lever arrangement allows you to raise discs and shovels together or either discs or shovels separately. Float wheels spread well in front and prevent tipping. Bearings are dust proof and provided with hard oil cups. Sold completely equipped and at a saving of from \$15.00 to \$25.00. Write today for full particulars or order yours at once. They will not last long at these prices.

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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 outfits.

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Solid steel construction. Sandwich Gas and Oil Engine, with magnet, 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.

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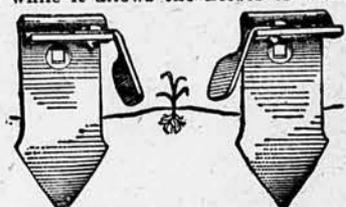
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by using Berg's Famous Bent Cultivator Tooth. Only one pair needed on each cultivator. Prevents covering up of small plants; allows deeper and closer cultivation; destroys weeds absolutely. With

BERG'S FAMOUS BENT CULTIVATOR TOOTH

you can do double the work, and better work too, while it allows the horses to walk at an ordinary gait. All of which means saving of labor and horseflesh, with a substantial increase in crops. Used by progressive farmers everywhere. Price per set, \$1.00. With attachment for round shank, \$1.20. Made 2 1/2 and 3 inches wide. Fully guaranteed. If not satisfactory, money back by return mail. If not at your dealer's, send order and price to us.

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Agents wanted everywhere. Write for catalog



New Perfection Oil Cook Stoves



No Odor No Smoke No Ashes

Truly that is the housewife's idea of paradise. And those features are only a few of the many advantages of cooking with *New Perfection Oil Cook Stoves*.

No longer is it necessary for you to suffer from the intense heat of the wood or coal burning range long before you are ready to begin operations.

Just touch a match to the wick and your fire is ready when you want it.

You can have a slow fire or an exceedingly hot one; just as you wish.

You don't have to watch it either. The flame will not creep up or diminish.

The Long Blue Chimney

is the key to the efficiency of the New Perfection Oil Cook Stoves.

The flame never touches the bottom of the utensils. Every atom of oil is burned and converted into usable heat in the long blue chimney. No waste—no dirt—no odor. It makes your summer cooking easy.

Write for booklet giving full description and prices of the various types.

Standard Oil Company (Indiana)
72 W. Adams St., Chicago, U. S. A.

For best results use Perfection Oil



Little Talks to Housekeepers

Helpful Hints Here for the Women Folks of the Farm

Not worlds on worlds in phalanx deep,
Need we to prove that God is here;
The daisy, fresh from Winter's sleep,
Tells of His hand in lines as clear.

For who but He who arched the skies
And pours the day-spring's living flood,
Wondrous alike in all He tries,
Could rear the daisy's purple bud?

Mold its green cup, its wiry stem,
Its fringed border nicely spin,
And cut the gold-embossed gem
That, set in silver, gleams within?

And fling it, unrestrained and free,
O'er hill and dale and desert sod,
That man, where'er he walks, may see
In every step the stamp of God?
—John Mason Good.

made more for the sake of effect than for friendship. The age-old expressions—"the latch string is always out," "come any time and take pot luck," are full of meaning and such hospitality will never lose its value.

The woman of the country home is overworked. There is need of conservation of farm womanhood more than of any one other thing in America.—JOSEPH E. WING.

A sprig of green or a flower or two on the dining table will cheer the atmosphere and make the hour more enjoyable. And everyone can find flowers now and different ones almost every day. Even the hated dandelion can be used for this purpose with good effect.

Not how elaborately we are entertained, but how cordially we are received, causes the day and hostess to be long remembered. To most of us, the simple entertainment sincerely offered, is much more enjoyable than the lavish spread

Remember the time for the annual warfare against the clothes' moth is here. Already the moth millers are making their appearance, which means that eggs are being laid in the woollens and later these will hatch and the larvae will thrive on these same woollens. Sunshine, air, and beating, are the greatest enemies of this pest, and the earlier the work against them is begun the less liable they are to cause damage. Do not neglect the beating or thorough shaking process, for the air and sunshine will not do the work alone. These will make the clothing less desirable lodging places for the moths because they harbor in undis-

FASHION DEPARTMENT — ALL PATTERNS TEN CENTS

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



No. 7696—Girls' Dress: Cut in sizes 6, 8, 10 and 12 years. Linen, gingham or serge can be used to make this dress, with the collar and cuffs of contrasting material. Long or short sleeves may be used and the skirt is cut in four gores and a sash hides joining of waist and skirt. No. 7697—Ladies' Dressing Sacque and Cap: Cut in sizes 34 to 42 inches bust measure. Style requirements are met by the cut of this one-piece sacque and the use of ribbon alone, but we know that the broad, embroidered collar, with a frill following its edge, doubles its charm. No. 7034—Girls' Dress: Cut in sizes 6, 8, 10, 12 and 14 years. In this dress we have a waist with large side bodies cut in one with the sleeve. The skirt is attached to this waist and has three gores. The tunic is entirely separate and closes at the shoulders. No. 7698—Ladies' Apron: Cut in sizes 34, 38 and 42 inches bust measure. Norfolk straps in front extending to form the large pockets are the odd features that make this model an original one. The front forms a panel—in back a belt-marks the skirt portion separate and the closing is with straps buttoning to this belt. No. 7745—Ladies' Skirt: Cut in sizes 24 to 43 inches waist measure. This three-gored skirt is up to the minute in style features. Contrasting goods is used very effectively in forming the outside belt and at the "pocket place." The belt may be used or omitted. No. 7741—Ladies' Dress: Cut in sizes 36 to 44 inches bust measure. Having style in abundance, with pockets and plainness but fullness of line. Contrasting goods for collar and sleeve cuffs. The four-gored skirt falls gracefully from the waist, surrounding which is a belt fitted with small pockets in line with the large side pocket in body part of skirt.

This Useful Outfit Given to Subscription Helpers

1 Butcher Knife - - - - - 1 Meat Cleaver
1 Meat Saw

THREE-PIECE IDEAL MEAT SET

Given as a premium to anyone sending a club of three NEW subscribers to KANSAS FARMER at the special trial rate of 50 cents to January 1, 1917.

USE THIS ORDER BLANK

KANSAS FARMER, Topeka, Kansas.

Gentlemen: Inclosed please find \$1.50 to pay for the following three new trial subscribers to KANSAS FARMER for the rest of 1916.

NAME OF NEW SUBSCRIBER	TOWN	STATE
1.....		
2.....		
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In return for my help you may send me, postpaid, the Ideal Meat Set.

Name..... Town..... State.....

ALLIGATOR WRENCH AND HANDY TOOL FREE



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

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

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

KANSAS FARMER -:- -:- TOPEKA, KANSAS

READ KANSAS FARMER'S CLASSIFIED ADVERTISING PAGE FOR READY BARGAINS

turbed places, but if the eggs are left undisturbed in the sunning and airing, they will hatch and damage will result.

Index Clippings

Many helpful ideas are found in the magazines and papers, which, if saved, would be valuable references. Whether or not these can be put to their greatest use depends upon how carefully the selections are made and how they are saved. If pasted in a scrap book without being classified, they are hard to find.

A good way to keep clippings is to place those about one subject in a small envelope, and a number of these can be put into a large envelope. For instance, one large envelope can be labeled "Cookery" and this contain a number of smaller envelopes marked "Vegetables," "Meats," "Desserts," etc.

Another good way to keep clippings is by filing them in an inexpensive card index box, in front or behind the guide cards. A man or boy handy in the use of hammer and nails can make a neat covered box to fit the guide cards which can be purchased at any book store. And even these cards can be made at home by cutting pasteboard into small-sized cards and leaving a slight projection on the upper edge on which to print.



STAND STILL, DADDY—I'M GOING TO TAKE YOUR PICTURE

Letters

A good, well written business letter is never discounted. It is a real pleasure to receive such letter, for it is easily read and one reading reveals its meaning. If its mission is to describe sale stock or market grain, it will receive more consideration than will the poorly written letter in which the description of the offerings is less clearly stated. Farming is one of the highest types of business, and the more good business methods used the better will be the business. Business-like correspondence is an asset.

So much for the value of good business correspondence, but is it enough that we give careful attention only to those letters through the writing of which we seek material gain or business?

What of those letters to the far-away relatives and friends who yearn for the written word from us that will keep them in touch with our lives and in which they are as deeply interested as ever? Perhaps in past years we answered their good letters promptly and told them of our daily duties, the progress the little folks were making in school, and the many interesting little things that helped them make a mental picture of us in our new home. But as time wore on, the miles between us seemed to lengthen, our obligation to write the little interesting particulars seemed less binding, and the last few years we haven't written at all, or perhaps only once or twice to tell them "all are as well as usual and as busy as ever." Or, do we feel we have passed the time when we should be expected to keep up our correspondence, and have we even lost interest in their letters?

The friends far away feel the loss of our friendship and interest, but is not

our own loss the greater? Every helpful habit dropped brings our so-called declining years nearer, for it is not long before we find ourselves saying—and we really feel it is so—that "we cannot do this or that as we once did," and this very belief and admission tends to age us prematurely.

As we lose interest in others we narrow our own lives, and the time will come when we, too, will long for that contact and communication with others and which is quite apt to be withheld from us for the reason that we ourselves broke the connecting link.

Let us never allow ourselves to treat lightly the joy we experience upon receiving the helpful letters that are tokens of the kindly esteem in which we are held, and let us never become so selfish that we are willing to allow them to go unanswered.

Father and Son Good Chums

Among our young friends is a lad of ten of an investigating turn of mind. He also possesses a new bicycle—and this combination helps him fill many an hour brimful. This young man lives in the city, so does not have access to the many interesting farm machines and animals that every country boy knows about, and much of his attention is centered on his one man-made horse. Another way in which this little friend is unfortunate is that his very companionable father is a traveling man and must be separated from him much of the time.

A few weeks ago the little fellow decided his bicycle was in need of a general overhauling, having been used constantly since the day of its receipt—almost four months ago. The machine was carefully and studiously taken apart, and the different pieces and bolts and nuts were laid aside in order. A full can of sewing machine oil was used in cleaning and lubricating and all went well until the point of re-assembling was reached. This proved to be a heavy tax upon his mechanical ability and he found he had several extra parts. As a consequence the bicycle had a few days' rest, pending the time the boy's father would return.

Upon his arrival, the solution of his son's problem was the first order of business. The two worked for an hour or two, and the time passed quickly and pleasantly for each was learning something. The father realized his son had unconsciously gained quite a knowledge of mechanics, and the son was learning the proper places for the few parts which had bothered him.

The most valuable thing about this incident was not that the boy learned how to take his bicycle apart and put it together again—though this was quite worth while—but that he had such confidence in his father's ability to show him where he had made his mistakes and felt free to go to him with his difficulty. The attitude of this father is one of constant encouragement and this helpful companionship will influence more than can ever be estimated, the son's progress in life.

One on Grandmother

Bobby (to grandmother)—Grandma, have you ever seen an engine waging its ears?

Grandma—No, nonsense, Bobby, I never heard of an engine having any ears.

Bobby—Why, haven't you ever heard of engineers?

Muffins.

- 1 tablespoonful butter
 - 1/4 cupful sugar
 - 1 egg
 - 2 cupfuls flour
 - 2 teaspoonfuls baking powder
 - 1 cupful milk
 - 1/4 teaspoonful salt
- Beat well.

Creamed Lima Beans.

Soak cupful dried beans over night, drain, and cook in boiling salted water until soft. Drain off water and season with cream, butter and salt.

Spanish Rice.

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

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GATHERING SUGAR CANE

We are so used to sugar that we are likely to forget to give it its properly important place. Right now if somebody asked you what sugar was good for you'd probably say—"Oh! to put in coffee and tea and for making candies and desserts." That's it—we all think of sugar as a sweetener and overlook its value as a food.

The chemists classify sugar as a hydrocarbon—that name may or may not be interesting to us, but what is interesting is their statement that it has, as a hydrocarbon, equal food value with the starchy foods and by digestion largely adds to the fatty tissues of the body.

Why do we eat sugar anyway? Your first answer might be: "Because it is sweet and tastes good." Of itself the answer would be correct, but the more important fact is that the body craves sugar because it needs it. And when the body craves something it gives us an appetite for it. So primarily that's why we like sugar and things made with sugar and not just because they are sweet.

In view of the fact that sugar has gone up so tremendously of late these facts

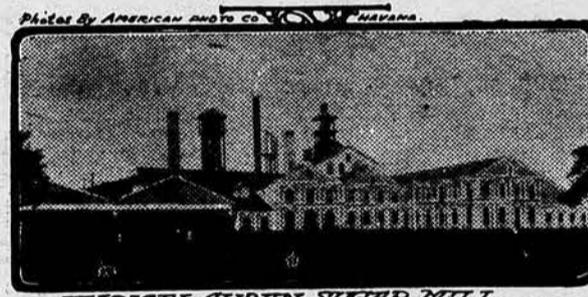


HOW SUGAR CANE GROWS

are interesting because we find that instead of the luxury sugar having gone up it is the FOOD sugar that has raised its price. Yet—even though the price is up we have to have our sweet food just the same.

Certainly the makers of that delicious beverage Coca-Cola must have discovered that sugar is up, because one of the principal ingredients in making Coca-Cola syrup is fine cane sugar. Think of it!—they use an average of 80 tons of sugar a day—about 4 carloads. But unlike many manufacturers that company has itself borne the raise and so you and I pay just the same today for our bottle or glass of Coca-Cola that we've always paid. Incidentally, this phase of the situation is a good reminder

of the benefits one gets from drinking a beverage as pure and good as Coca-Cola. Not only do we please our palates and derive wholesome refreshment from the drink but we also give our systems that bit of sugar sweetness that they crave and which is necessary to health and tissues. Is it any wonder then that Coca-Cola is so popular and so universally drunk that it has been called "the drink the nation drinks"?



TYPICAL CUBAN SUGAR MILL

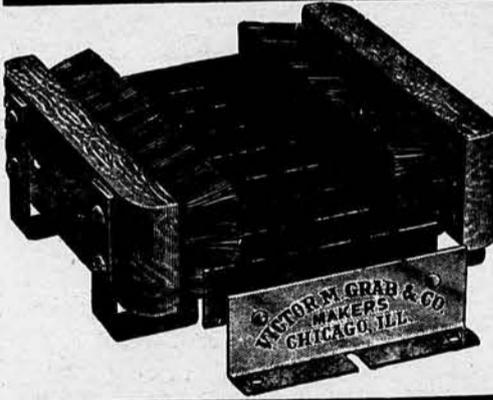
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ROSE COMB RHODE ISLAND REDS—I have bred Reds for ten years. I have them as good as the best at live and let live prices. Eggs, \$1.25 to \$4. Big mating list free. Redview Stock and Poultry Farm, A. S. Fellows, Prop., Hays, Kan. (Secretary of the Golden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

FARM AND HERD.

Investigation of recent deaths in droves of hogs near Sedalia, Mo., has revealed cocklebur poison as the cause, according to announcement of Dr. Ralph Graham, inspector in charge of the United States hog cholera station there. Doctor Graham said the first two oblong leaves of the cocklebur are poisonous at this time of the year. Usually death occurs, he declared, in a very short time. The animals generally die squealing and no symptoms are shown until death is near. Doctor Graham says pastures should be examined for the cocklebur plant and if found the hogs should be removed at once and fed lightly for several days.

Secretary F. W. Harding reports the receipts at the office of the American Short-horn Breeders' Association for recording pedigrees and transfers during March of 1915, compared with \$11,849 in March of 1914, a ruling made by the association a year ago, requiring the registry prior to January 10, 1916, of all animals one year old, otherwise subject to a penalty fee, naturally forced registry prior to that date. Yet, in spite of that, February, instead of showing a decrease as was expected, showed an increase in registration receipts of \$500, which is followed in March by an increase of \$5,655. This comparison, Secretary Harding says, furnishes evidence of a steadily increasing production of Short-horns. The demand for Short-horn breeding stock surges in extent and in volume any period in the breed's history.

J. O. Southard of Comiskey, Kan., is the owner of one of the valuable herds of Hereford cattle. At the head of this herd is the great breeding bull, Monarch 449994. This noted sire furnished sons to head seventeen pure-bred herds last year and is probably one of the best breeding herd bulls in Kansas. Monarch 449994 is assisted by a very promising two-year-old, Repeater 66th, bought at a long price. Mr. Southard will hold a public sale on October 7 and sell a draft of Monarch heifers bred to Repeater 66th. This cross should prove valuable to produce a correct type of Hereford cattle.

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FOR SALE--240 ACRES

Good land, good improvements, part creek bottom alfalfa land. Entire farm hogtight and fenced into fields, fine hog farm, has two wells with windmills and can all be cultivated, is located in the alfalfa belt of Central Kansas near Osborne, a section noted for its prosperous farmers. Am offered this farm for a short time at \$62.50 an acre and will give liberal terms on a large part of it, for here is where you can buy a farm and pay out. Lots of good improvements on this place. For further particulars address S. W. COX, 1715 W. Boone Ave., Spokane, Washington.

GENUINE BARGAIN—Quarter section 3 1/4 miles from market, no buildings; 120 acres in wheat; average rental for three years, over \$360. Surrounding lands, \$40 an acre. This goes for \$30 for quick sale. Terms. No trade.

JAS. H. LITTLE, LA CROSSE, KANSAS

UTICA, NESS COUNTY, KANSAS

On main line of Missouri Pacific. Well improved 480 acres, 4 miles out; 200 cultivated, balance pasture. R. F. D. and phone, an ideal home, corn, wheat and stock farm. Before locating, get our list of sixty fine farms for sale in Central Western Kansas, map of Kansas, and other literature. Agents wanted.

BUXTON & RUTHERFORD, Utica, Kansas

SPLENDID 65-ACRE TRACT

Situated 1/4 mile from the city limits; good 8-room house and other improvements, all rich dark soil, no waste land. Splendid school and church facilities. Your opportunity to buy this home right. Write for full description and post card picture of house.

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.

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.

Cards—Free

If you will send us the names of ten persons who are not now subscribers to KANSAS FARMER, we will send you a set of Twentieth Century Travel Cards free for your trouble. Address KANSAS FARMER, Travel Dept., Topeka, Kansas.

The Rural High School

No school measure in recent years has attracted so much attention in the communities of Kansas as has the new Rural High School Law. About forty-five high school districts have now voted bonds and organized. Yet, it is less than a year since the bill was printed. Many others are contemplating this step. It affords an opportunity for the country boy and girl to secure a high school education while living at home. The people of the community decide about the bounds of the proposed district. If two-fifths of them sign a petition to call an election the county commissioners must call it, and if a majority carries the proposition with bonds and site defined in it, the county superintendent must call a school meeting to elect board, etc. The course of study is decided by the district board under the advice of the State Board of Education. Township boundaries and even county lines do not bar in the formation of the district. If they did, many communities could not have one. Of course, some are not ready for this step, but where they are it makes it possible.

The district should be made so that those in favor of it are included, but parts of the community that are opposed can often be left out in describing the boundaries. It should be large enough to carry the burden, although that is not proving to be so much as was thought by many people. It should be thoroughly explained that this is not consolidation, and has no relation to it. The building should be well planned to allow for the practical instruction in real manual training, agriculture, domestic science, etc. The growing demand among our people is for an education for their children that shall be 'not for school but for life.' School should be taught in "terms of life." Less than two per cent of our boys and girls ever enter college or university, and less than six per cent enter a high school, and the 73 per cent of all children who are in our third class cities and country districts have proportionally so little spent upon them as compared with the magnificent provision made for the 27 per cent by the first and second class cities, that it is time we were thinking.

In a recent report upon Sabbath School work, an experienced worker suggested that inevitably the cities would be as the life from the country that is going into them; in other words that the young manhood and womanhood of the country will determine the life and progress of the cities. What is this great force then? Is it ready to set the pace for our civilization? It is full of virility, "red blood" coursing through its veins, but is it equipped as it ought to be—is it efficient to produce results? A body of churchmen meet sometimes, discuss the country questions at long range, view the needs with a mental telescope, and go home to manage their large city churches with their varied activities. Little do they realize that the Christless country will determine what shall be the religious life and influence of the city church of the near future. Like the educators, it is so easy to magnify the work and apparent results of the large, financially-able, well-manned, and what is far more efficient now-a-days "well-womaned" city church center. Some very good men are even commending and urging imitation of the "gasoline zeal" which would eliminate the country community center. But, there are still a very large number who must find the things worth while in the country center. What of these? They are the yeomanry of our land, and in every land that speaks our tongue they have ever been the backbone of stability and real progress. There is where the "unit" of our civilization—the American home—is making its last stand in some features, spared to some extent the unceasing round of attractions and distractions that scatter the family and destroy family spirit and solidarity. And these homes seek to hold the children during the years when they ought to be under father's and mother's care, and give them school work that fits for life, in terms of life, and educates toward the farm instead of away from it. — ALFRED DOCKING.

The cattle will soon be on pasture. One necessity is salt, and plenty of it. It should be conveniently placed, so the animals can get it when they choose. A box full of salt kept under a shed is best.

A bucket of paint and a brush cost very little but with them and a little time a wonderful change can be made about the place. Not only will paint improve appearances, but it will make the buildings last longer.

Classified Advertising

Advertising "bargain counter." Thousands of people have surplus items of stock for sale—limited in amount or numbers hardly enough to justify extensive display advertising. Thousands of other people want to buy these same things. These intending buyers read the classified "ads"—looking for bargains. Your advertisement here reaches over 300,000 readers for 4 cents a word per week. No "ad" taken for less than 60 cents. All "ads" set in uniform style, no display. Initials and numbers count as words. Address counted. Terms, always cash with order. SITUATIONS WANTED ads, up to 25 words, including address, will be inserted free of charge for two weeks, for bona fide seekers of employment on farms.

HELP WANTED.

SUITS \$3.50; PANTS \$1.00, MADE TO measure. For even a better offer than this write and ask for free samples and styles. Knickerbocker Tailoring Co., Dept. 451, Chicago, Ill.

LADY OR GENTLEMAN TO TRAVEL for old established firm. No canvassing. Staple line. Salary, \$18 weekly, pursuant to contract. Expenses advanced. Address G. M. Nichols, Pepper Bldg., Philadelphia, Pa.

MEN AND WOMEN WANTED EVERY-where. Government jobs, \$70 month. Short hours. Vacation. Big chance for farmers. Write immediately for list of positions now obtainable. Franklin Institute, Dept. K 82, Rochester, N. Y.

WANTED—RESPONSIBLE REPRESENTATIVE. Twelve tools in one. Sells to farmers, teamsters, contractors, etc. Lifts three tons, hoists, stretches wire, pulls posts. Many other uses. Free sample to active agents. One agent's profit \$45 in one day. Another \$1,000 in December. We start you. Write for big color plate. Secure exclusive sale. Harrah Mfg. Co., Box M, Bloomfield, Ind.

AGENTS WANTED

SUITS \$3.50; PANTS \$1.00, MADE TO measure. For even a better offer than this write and ask for free samples and styles. Knickerbocker Tailoring Co., Dept. 451, Chicago, Ill.

REAL ESTATE.

WANTED—FARMS. HAVE 3,357 BUYERS. Describe your unsold property. 679 Farmers' Exchange, Denver, Colo.

SQUARE SECTION FINE WHEAT LAND, small cash payment, long time. L. E. Pendleton, Dodge City, Kan.

SCOTT COUNTY, 160 ACRES, LEVEL, close to town and school, 70 acres wheat; \$20, terms. R. H. Crabtree, Scott City, Kan.

WANTED—TO HEAR FROM OWNER OF good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

IF YOU WANT TO SELL OR EXCHANGE property, write us. Black's Business Agency, Desk C, Chippewa Falls, Wis.

FREE—320 ACRES LAND, EASTERN Colorado; good level land in the best stock country on earth. Write me for particulars. W. O. Orr, Granada, Colo.

FARMS WANTED—WE HAVE DIRECT buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 43 Palace Bldg., Minneapolis, Minn.

SNAP—GOOD WHEAT FARM, EIGHT thousand dollars. 130 good wheat, all goes. Thirty acres pasture, trees, lots, two good wells. Barn, five-room house, granaries. Five miles good wheat market. F. U. Dutton, Excelsior, Penasola, Kan.

IDEAL DAIRY, POULTRY AND TRUCK farm of forty acres, just outside a good live town, 800 population. Good six-room house, barn, poultry house with cement floor, shop, garage, buggy shed, coal shed, two good wells of never-falling water with wind mills and tanks, one irrigating tank holds 200 barrels, one stock tank 10 barrels. Trees, shrubbery and flowers to make it homey and cozy. Price, \$6,000. Address C, care Kansas Farmer.

CATTLE.

SEE E. L. ENSIGN FOR GRADED HOLSTEIN cows and heifers and registered bulls. Cameron, Mo.

HOLSTEIN CALVES, 15-16THS PURE, \$20 each, express prepaid. Write us for Holsteins. "Edgewood," Whitewater, Wis.

FOR SALE—HIGH-GRADE HOLSTEIN heifer calves, \$15 each, crated. Edward Yohn, Watertown, Wis.

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

100 HOLSTEIN HEIFERS AND COWS—Consisting of big springing heifers and pure-breds, young springing cows and a number of heifers, six to fifteen months old ones. A carefully selected well bred lot. High grades. Paul E. Johnson, South St. Paul, Minn.

GUERNSEYS OF ALL KINDS, ESPECIALLY 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' Association. H. A. Main Secy., Fort Atkinson, Wis.

DOGS.

WANTED—WHITE ESKIMO-SPITZ PUPPIES, six to eight weeks old. Fancy price for good ones. Brockway's Kennels, Baldwin, Kan.

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

PATENTS.

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

TANNING.

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

TREES, SEEDS AND PLANTS.

WHITE TEPARY BEANS, 10 CENTS pound. W. A. Miller, Garden City, Kan.

SEED CORN. BRUCE SAUNDERS, Holton, Kan.

100 BUSHELS PURE BLACK-HULLED kafir, choice seed, \$1 per bushel. f. o. b. Ness City. Sacks, 25 cents. E. J. Kuffhead, Ness City, Kan.

PURE BLACK-HULLED WHITE KAFIR corn graded and tested, \$1 per bushel; bur-lap sacks free. A. J. Rymph, Harper, Kan.

SEED CORN IN THE EAR—PURE-BRED Yellow Dent and Boone County White, \$2 per bushel. Woestemeyer & Shuyler, Bethel, Kan.

PURE BRED SEED CORN, FULLY tested and guaranteed. Boone County White, Hildreth and Reid's Yellow Dent. M. T. Kelsey, Northwood Farm, Topeka, Kan.

NANCY HALL, DOOLY YAM AND Pumpkin Yam potato slips. Any amount from assorted seed, \$1.75 per thousand f. o. b. McCloud. Satisfaction guaranteed. Orders and correspondence solicited. L. M. Baker, McCloud, Okla.

BUSINESS CHANCES

DEMOCRATIC NEWSPAPER, 8,000, state wide circulation, with plant. Incorporated. Will sell or trade for clear real estate. Will sell half interest or all. X-Rays Democrat, 217 W. Fifth St., Topeka, Kan.

FREE FOR SIX MONTHS—MY SPECIAL offer to introduce my magazine, "Investing for Profit." It is worth \$10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the real earning power of money, and shows how anyone, no matter how poor can acquire riches. Investing for Profit is the only progressive financial journal published. It shows how \$100 grows to \$2,200. Write now and I'll send it six months free. H. L. Harber, 431-38 W. Jackson Blvd., Chicago.

LUMBER.

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

HORSES AND MULES.

SHETLAND PONIES, GELDINGS, MARES and colts, all colors. C. H. Clark, Leocompton, Kan.

FOR SALE—THREE SPOTTED SHETLAND ponies, good size and style. Also buggy and harness. J. H. French, Topeka, Kan.

FOR SALE—THIRTY JACKS AND JENNETS, the big kind. A four-year-old registered black French draft stallion, the ton kind. Theodore Conrad, Groom, Carson Co., Texas.

MISCELLANEOUS.

BINDER TWINE—SISAL STANDARD 500 feet 10c f. o. b. Minneapolis, Omaha, Kansas City. Cooper Twine Company, Minneapolis, Minn.

HOGS.

FOR SALE—BERKSHIRE BOAR, 12 months old, registered. G. D. Willems, Inman, Kan.

CHESTER WHITE SOWS AND GILTS bred for summer farrow or open. Also a few boars. Prices reasonable. Pedigrees and crates free. Leo Handlon, Farmington, Iowa.

BEE SUPPLIES.

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

BERMUDA GRASS.

ACCLIMATED BERMUDA GRASS ROOTS—Bran sack full, \$1; six sacks, \$5. Frank Hall, Toronto, Kan.

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 solicited. "Bermuda" Mitchell, Chandler, Okla.

BERMUDA GRASS—HARDY, RANSE growing variety. Stands floods, droughts, hot winds and severe freezing. Best and hardest pasture grass. Great milk producer. Write today for leaflet telling how to get started. Henry Jefferies, Ottawa, Kan.

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.

SITUATION WANTED.

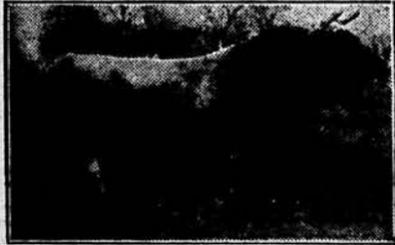
WANTED—PLACE AS HOUSEKEEPER by middle-aged woman. Address Housekeeper, Route 4, Box 30, Clay Center, Kan.

WANTED—BY EXPERIENCED FARMER, job on good stock or grain farm. Good references. Address James Wood, Burns, Kan.

A FIRST CLASS FARMER AND MACHINIST wants position on farm. Can handle any tractor or car; also good thresherman. Reference furnished. N. E. Courter, Paola, Kan.

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.

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

SUNSET "CORRECT TYPE" JERSEYS

The famous Blue Belle-Golden Rosebay breeding. A few bred heifers and young bulls for sale, singly, pair or trio. Send for circular giving description of herd, breeding, production, etc., and mention your wants.

The Ennis Stock Farm, Horine Station, Mo. (Just South of St. Louis.)

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. LINSCOTT 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 Jolley.

H. F. ERDLEY - HOLTON, KANSAS

JERSEYS BACKED BY RECORDS.

Calves, yearlings and two-year-old bulls, sired by Sultan's Trinity King, Fern's Baby Boy and Majesty Western King. From dams that will give 1,000 pounds of 5 per cent or more, a month. Also some choice young Poland Chops boars.

DR. J. H. LOMAX, Station D, St. Joseph, Mo.

BISONTE FARM JERSEYS

\$25 buys a 4-months-old bull from long line of heavy producing cows. Noble of Oaklands and Eminent breeding. Write for pedigree.

BISONTE FARM - LAWRENCE, KAN.

JERSEY BULLS

For Sale—A few great young bulls, ready for light service. Splendid individuals of most popular breeding, sired by Blue Belle's Owl 79641 and H. F. Golden Fern's Lad 9th 101728, all out of great dams. Only bulls from our very best cows, raised and offered for sale. You must buy a good one if you buy here. Address

ROLLA OLIVER, Box 701, St. Joseph, Mo.

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. Deitrich, 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, Mo. JERSEY CATTLE. J. B. Porter & Son, Mayetta, Kan.

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.

Shorthorns. May 11—E. O'Day, London, Ohio.

Aberdeen Angus. May 26—E. H. Salisbury, Kirksville, Mo.

Jersey Cattle. May 20—Robt. I. Young, Route 5, St. Joseph, Missouri.

Charles Stith, Eureka, Kan., is making a great success breeding Duroc Jerseys. He used in his herd the great boar Model Duroc by Dandy Duke that was grand champion at the American Royal Show in 1911. Mr. Stith has in his herd several large sows sired by old O'Ron. This strain of breeding is large, heavy boned, with size and quality. Mr. Stith has at the head of his herd now a son of Long Wonder, and a feature of his herd at this time is the choice fall boars that are very promising for herd headers.

F. C. Gookin of Russell, Kan., owner of one of the good herds of O. I. C. hogs in the West, writes that his herd is doing well. This year he has succeeded in saving a large number of early spring pigs and they are growing out fine. He breeds the big early feeding type and has found them very profitable as a market hog. He keeps his herd immune at all times.

The home on Hallwood Farm near Carthage, Mo., was destroyed by fire at an early hour Saturday morning, April 23. For years Hallwood has been the home of E. M. Hall, well known as a Shorthorn breeder. His mother and a servant girl lost their lives in the fire. E. M. Hall was also severely burned.

F. J. Searle's second consignment sale of Holstein cattle, held at the Searle farm, Oskaloosa, April 25, was largely attended and buyers from a number of states were present. A large per cent of the offering was taken by Kansas buyers. Missouri, Nebraska and Oklahoma buyers were successful bidders on a number of good ones. Prices on females ranged from \$100 to \$340, a large number selling at from \$200 up to \$340 and a number for \$300 and over. Prices on bulls, including calves, ranged from \$95 to \$475. Consignments were sold from the herds of F. J. Searle, Oskaloosa, Kan.; J. H. Holston, Topeka, Kan.; H. C. Glissman, Omaha, Neb.; Roy Johnston, Oskaloosa, Kan.; Spring Lake Dairy Farms, Algonquin, Ill.; Riverside Stock Farms, Algonquin, Ill.; Charles Holston & Son, Topeka, Kan.

Alvey Bros., Meriden, Kan., well known as pioneer breeders of pure-bred O. I. C. hogs, report their herd doing fine. They now have sixty head of choice early spring pigs. This is one of the oldest established O. I. C. herds in the state and they make a specialty of high class breeding stock. Their type of O. I. C.'s are the kind that have size and quality and are profitable as feeders.

H. F. Erdley of Honton, Kan., is making a great success with his registered herd of Jersey cattle, Berkshire hogs and seed corn. These three combined yield good profits to the farm. Mr. Erdley raised 103 bushels of corn to the acre last year. He claims more profits from his well fenced fifty acres adjoining the town of Honton than is produced on the average 160 acres. He is a firm believer in a small farm well taken care of and registered stock well cared for. The herd of Jerseys now numbers about forty head, including two yearling bulls sired by the imported grandson of Golden Jolly.

The second annual spring sale of Aberdeen Angus bulls held at St. Joseph, Mo., April 25, attracted buyers from Kansas, Missouri, Iowa and Nebraska. Fifty-nine head of bulls sold for an average of \$160.25. Only one female was offered. A March yearling Heatherbloom heifer sold for \$240. A. D. Wilcox of Muscotah, Kan., topped the sale with the purchase of a three-year-old Trojan Erica bull at \$350.

President McFadden and Secretary Doty of the National Swine Breeders' Association have completed the preliminary work for the National Swine Show to be held at Omaha, October 2 to 7. It is arranged that all applications for pens must be sent to the general superintendent, E. Z. Russell, Room 103 Bee Building, Omaha. Mr. Russell will also gladly give any prospective exhibitor any information of a general or specific nature he may want. In addition to the following list of premiums, a number of specials will be offered. Boar two years old or over, \$25, \$10, \$15, \$12, \$10, \$10, \$8; senior yearling boar, \$25, \$20, \$15, \$12, \$10, \$10, \$8; junior boar pig, \$20, \$15, \$12, \$10, \$10, \$8, \$7; junior boar pig, \$20, \$15, \$12, \$10, \$10, \$8, \$7; sow two years old or over, \$25, \$20, \$15, \$12, \$10, \$10, \$8; senior yearling sow, \$25, \$20, \$15, \$12, \$10, \$10, \$8; junior yearling sow, \$25, \$20, \$15, \$12, \$10, \$10, \$8; senior sow pig, \$20, \$15, \$12, \$10, \$10, \$8, \$7; junior sow pig, \$20, \$15, \$12, \$10, \$10, \$8, \$7; herd over one year, \$30, \$25, \$20, \$15, \$12, \$10, \$10, \$8; herd under one year, \$30, \$25, \$20, \$15, \$12, \$10, \$10, \$8; herd any age, bred by exhibitor, \$35, \$30, \$25, \$20, \$15, \$10, \$10, \$7; four animals any age, got of one sire, \$35, \$30, \$25, \$20, \$15, \$12, \$10, \$7; four animals any age, produce of one sow, \$35, \$30, \$25, \$20, \$15, \$12, \$10, \$7; senior champion boar, \$35; junior champion boar, \$35; grand champion boar, \$50; senior champion sow, \$25; junior champion sow, \$35; grand champion boar, \$50. The premium list will soon be ready for distribution and can be had by applying to W. M. McFadden, Union Stock Yards, Chicago; J. J. Doty, Shenandoah, Iowa, or E. Z. Russell, Omaha, Neb.

HOLSTEIN CATTLE.

OLYDE GIROD, At the Farm. 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 Bessie 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, \$26. Bargains. Send draft for number wanted. All prices f. o. b. cars here. Inspect our herd before purchasing. Write, wire or phone us.

200 - HOLSTEIN COWS - 200

You are invited to look over our herd of Holsteins before you buy. We have 150 high grade cows and heifers and a lot of registered bulls to go with them. THREE COWS AND A REGISTERED BULL, \$325. Fifty cows in milk and forty that will freshen soon. Come and see our cattle. Bring your dairy expert along. The quality of the cows and our prices will make it easy for us to trade. Come soon and get choice. Well marked heifer and bull calves, \$22.50 each, delivered to any express office in Kansas. LEE BROS. & COOK - HARVEYVILLE, KANSAS

TORREY'S HOLSTEINS

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

O. E. Torrey - Towanda, Kansas

Coderlane Holstein Herd

One of the best bred sires in the state at head of herd. Some of our cows produce 80 pounds milk per day. Buy your next bull from a well bred and high producing herd.

T. M. Ewing, Independence, Ks.

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.

IN MISSOURI

Eight bulls, 2 to 8 months, \$100 to \$175 each. Always have a few good cows and bred heifers for sale. Nothing but registered Holsteins. S. W. COOKE & SON - MAYSVILLE, MO.

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.

TRUE—We have registered Holsteins rich in the blood of the great sires, but the big end of our profit comes from the milk and fat they produce.

TREDICO FARM

Route 44 - KINGMAN, KANSAS

23 - HOLSTEIN-FRIESIAN BULLS - 23

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Twenty head extra fine, big, heavy producing young cows. Fresh and heavy springers. Also springing heifers. Three extra fine Guernsey cows and a few Guernsey heifers. IRA ROMIG, Station B, TOPEKA, KANSAS

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You are invited to look over our herd of Holsteins before you buy. We have 150 high grade cows and heifers and a lot of registered bulls to go with them. THREE COWS AND A REGISTERED BULL, \$325. Fifty cows in milk and forty that will freshen soon. Come and see our cattle. Bring your dairy expert along. The quality of the cows and our prices will make it easy for us to trade. Come soon and get choice. Well marked heifer and bull calves, \$22.50 each, delivered to any express office in Kansas. LEE BROS. & COOK - HARVEYVILLE, KANSAS

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RED POLLED BULLS

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