

KANSAS FARMER

For the improvement



of the Farm and Home

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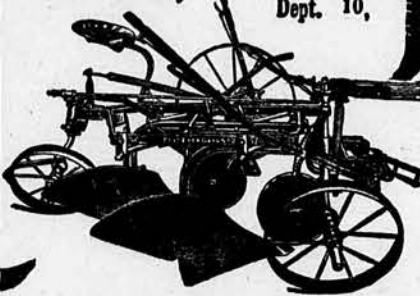
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ONE GOOD APPLE CROP

DID you have an apple crop this year, or will you be compelled to buy apples if you have any?

This year has been generally classed as a poor one for apples, yet we have seen and sampled a number of fine apples grown in the very neighborhoods complaining about the poor crop.

One of our Shawnee County readers made us a short visit a few days ago and brought with him a half peck of fine apples grown this year on his farm just the other side of Valencia. His crop is about 150 bushels from thirty-five trees. Upon our showing some surprise over his success for this year, he explained that nothing has been done in his orchard that cannot be done by every other farmer. He prunes, sprays, and cultivates his orchard, but it is as unreasonable to expect an orchard to thrive and bear as it should, without care, as it would be to give the corn field no further attention after planting the seed. If the corn field were left after planting, even though the seed were an adapted strain and pure, the young plants would have a constant battle with weeds and other hindrances and the few stalks that withstood these would produce fewer ears and much smaller ones than would have been the case had the field been given the required attention.

It has too long been the practice to plant an orchard and then visit it only at blossoming time and when the fruit has ripened. We believe one reason for this is that most farm orchards are too large, requiring much more time than the farmer feels he can spare from other work. Our visitor believes that an acre-orchard is large enough for the average farm and will produce fruit enough for family use and some to spare, if the trees are given reasonable care.

This man's orchard is kept well pruned giving the trees a chance to mature fruit of quality instead of setting more apples than can be ripened in good shape. He cultivates the orchard both ways, and keeps a dust mulch six inches deep on the surface. The ground near the trunks which cannot be stirred with the cultivator without danger of injuring the tree, is spaded by hand. Undoubtedly this thorough cultivation this year had much to do with the uniform, good size of the apples, for there was no rain from June until after the apples were picked. The trees received only four sprayings.

During the conversation our visitor expressed the hope that many of his neighbors would soon realize the value of giving their orchards better care. He cheerfully loans his sprayer in the neighborhood and the users are beginning to see a difference in their trees and appreciate that the difference between their crops and his is care. With more using the spray materials, the cost would be considerably lessened, for these could then be bought in wholesale lots. There is little danger of overdoing in producing good apples for some time to come.

What this man has done this year is possible for many others and would be profitable, too, for the apple crop is a valuable one.

Montgomery County Awake

Despite the poor crops in Southeastern Kansas this season, Montgomery County has been holding some very successful Farm and Home gatherings. The good work of E. J. Macy, farm agent for that county, is bearing fruit and is responsible for much of the interest and enthusiasm shown in these meetings. At the Havana meeting held October 18, there were nearly one thousand persons in attendance. Thirty-eight head of horses, twenty-five cattle, nine colts, and a large display of poultry contended for the ribbons. In the grain department, wheat, oats, and over 160 ears of corn were shown. Here, as in the live stock, the influence of the county agent could be detected in the quality of the exhibits. Especially was this true in the colt classes. There were some exceptionally fine draft colts, the result of intelligent breeding and care.

In the women's department a large room was filled with needle work and

products of the culinary art. One of the most interesting and educational features of this work was when the lady speaker from the Kansas Agricultural College gathered the women about her and held a judging class. The women of this district show a keen and intelligent interest in this work.

Speakers from the agricultural college gave addresses in the forenoon and the afternoon was given over to sports of all descriptions.

Such meetings are not only a source of entertainment and splendid advertisement for a community, but they are educational and produce an interest in progressive, up-to-date farm life.

Stacking Fodder

Rough feed will be scarce during the coming winter unless good care is taken of all that is grown. When fodder stands in small shocks, the wind blows much dirt into the shocks which sticks to the fodder, making it impossible for cattle to eat it. Cattle will eat whole kafir stalks if they are clean, but when they are coated with sand and dirt only the least dirty will be eaten. We have seen as much as 25 per cent of a load of fodder left uneaten because of the dirt on the stalks and leaves. The only way to protect the fodder is to stack it in well built racks as soon as it is dry enough to keep. This will reduce the surface exposed to the weather and save enough feed from dirt damage to pay for the labor several times.—J. E. PAYNE, Oklahoma.

Fur-Bearing Animals Protected

The earnings of the trappers of North America in 1915 are estimated by the author of a recent Federal Department of Agriculture bulletin to have been not less than \$20,000,000, although exports of raw furs for the year were only about half the normal proportion. In large part, the industry owes its continued success, the bulletin indicates, to legislation passed in recent years protecting fur animals in much of the territory where the business is important.

Animals from which the finer furs are obtained are diminishing in numbers, but the value of the raw fur production of the United States and Canada has grown enormously in recent years.

As a result of the legislation for the year the total number of states protecting one or more species of fur-bearing animals by state-wide laws is increased to thirty-nine in addition to Alaska. The bulletin contains an outline of the provisions of existing laws by states and the provinces of Canada. Copies of the publication may be had free on application to the U. S. Department of Agriculture as long as the Department's supply lasts.

Government Tests Self-Feeder

Self-feeding of hogs has been tested recently by the Federal Department of Agriculture. The tests were made at Beltsville, Md., to compare self-feeding with hand-feeding. As in other similar trials self-feeding proved the most satisfactory system. Starting with pigs averaging 93 pounds, in a 70-day period the self-feeder plan put an average of 113 pounds of gain on them at a cost of \$5.67 per hundred pounds, while the hand-feeding method put 73.5 pounds of gain on at a cost of \$6.24 per hundred pounds. The feed in both cases was corn meal, middlings and tankage. The hand-fed lot was fed three times a day a ration of five parts corn meal, four parts middlings, and one part tankage with enough water added to make a thick slop. The self-fed lot had free access to the same feeds supplied in separate compartments of the self-feeder. The self-fed lot consumed the greater amount of feed per head, but used this feed to better advantage, making a pound of pork on less feed than did the hand-fed pigs. A mineral mixture made of one bushel hard-wood ashes, eight pounds salt, eight pounds air-slaked lime, four pounds sulphur, and two pounds pulverized cop-peras, was before all the pigs all the time.



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STOP LAND SPECULATION

Two of the biggest agricultural problems facing us at the present time have to do with the increase of tenancy in farming and the keeping of more capable young men on the farms. Easier systems of credit and the elimination of land speculation would make it possible for many to take up farming as farm owners who now can only work as hired hands or drift to the city and look for jobs there.

These questions were discussed by Dean W. M. Jardine of the Kansas Experiment Station, in an address before the International Dry Farming Congress recently held in El Paso. Dean Jardine took the stand that we must have a credit system designed to meet the peculiar conditions of agriculture. Tenancy is on the increase all over the country. It is an undesirable condition and one that should be remedied if possible.

"Existing credit institutions," said Dean Jardine, "including the new land banks, are entirely inadequate to change the basic conditions causing tenancy." Land values in the United States increased from \$24.30 an acre in 1900 to \$46.64 in 1910. It is becoming more difficult each year for the man of small means to get a start in farming.

Some most interesting facts as to the experiences of New Zealand, Australia, Denmark, Germany and France were given in this address. The cumulative experience of these countries seems to be that the only policy which will make possible the linking of more young men with the soil as operating farm owners, is one that deals with land speculation first, and credit second. The plans being followed limit the amount of land one man can hold, whenever land takes on a speculative value. In New Zealand this has been done with universal approval. The limitation is 640 acres.

Dean Jardine suggests a system of state re-purchase in order that excess land owned be re-sold or transferred to those who will occupy it. This should be administered by a non-partisan board of experts whose valuation should be made the basis of both taxation and re-purchase.

The suggestion is somewhat revolutionary but it furnishes food for thought. The condition described is one that must be met and other countries seem to be solving it successfully along the lines indicated.

RULES FOR BORROWING MONEY

A great deal of business is conducted on borrowed capital. It is sound business to do this if correct principles are followed in making the loans and using the money borrowed. There are many things to be considered in borrowing money, but we would commend especially the following five rules laid down by T. N. Carver of the Federal Department of Agriculture:

Make sure that the purpose for which the borrowed money is to be used will produce a return greater than needed to pay the debt.

The contract should provide for the repayment of the principal at the most convenient time; that is, when the borrower is most likely to have the means wherewith to repay it.

The length of time the debt is to run should have a close relation to the productive life of the improvement for which the money is borrowed.

Provision should be made in the long time loan for the gradual reduction of the principal.

As low interest rates as possible should be secured.

A Lincoln County farmer—Walter Meyers—recently received \$1,017.70 for a single load of alfalfa seed. He hauled it to town with a four-horse team. The seed weighed 163 bushels, and was in first class condition. He got two crops of hay from the field in addition to the seed crop.

SOIL LOSING ORGANIC MATTER

Soil analyses over the state continue to show how ruthlessly we have been drawing on the accumulations of hundreds of years. On a farm in Pratt County recently soil from two adjoining fields was examined by the experiment station chemist. One of these fields had been farmed only two or three years, while the other had been in cultivation thirty years. The analysis showed that the old soil had lost fully one-half of its organic matter. It was lighter in color, of a more powdery character, baked easily, and was subject to blowing. All this is a result of its loss of organic matter. It took hundreds of years for Nature to put this vegetable matter in the soil. In thirty years of farming half of it is gone in this field and from now on those who farm it will find it difficult to produce paying crops. The only course to follow will be to get vegetation and manure back into the soil at every opportunity.

It is not necessary to take so long a time as did Nature to store decaying vegetation in the soil, but it cannot be accomplished in a single year. If the policy of turning under all straw, manure, stalks, and other waste vegetation is persisted in, the soil will in the course of a few years begin to change in character. One of the strongest arguments for dairy farming is the fact that it makes possible the turning back of a maximum amount of organic matter to the soil.

We cannot get away from the results of robbing the soil of its decaying vegetation. The condition found on the farm referred to will prevail wherever there has been so marked a reduction in the amount of organic matter found in the soil. This one thing is largely responsible for the decrease in yields to which reference is frequently made. The manure spreader and the green manure crop are the means to be employed in correcting this condition.

ARE YOUR FLUES SAFE?

The State Fire Marshal is doing all he can to reduce the fire loss in Kansas, but he is powerless unless the public will join in the work and give heed to warnings like this one.

In 1915 Kansas had 265 fires caused by defective flues. These fires destroyed property valued at \$214,492.

There is no necessity for defective flues. Practically every dollar of this loss was preventable. Most of this loss occurred in the winter, working great hardship on people who were driven out of their homes in all kinds of weather and at all hours of the night.

During the coming winter another two hundred thousand dollars or thereabouts will go up in smoke from the same cause, and two hundred more families will find themselves homeless in the cold and snow.

And it will be entirely their own fault. It is an easy matter to inspect a chimney. If you are not enough of a mechanic to do it yourself, you can employ some competent person for almost nothing.

Chimneys that are used for supports for wooden timbers in the building should be condemned and their use discontinued until the evil is corrected. Many fires start from this cause. Either the wood becomes hot enough to burn or the weight resting on the timbers causes the chimney to settle, leaving a crack through which the flames escape.

Bracket chimneys are so hazardous as to be almost criminal. The brackets supporting the chimney almost invariably settle in time, throwing the chimney out of line and causing the opening of cracks between the bricks. Then comes the fire.

The winter season is almost here when fires will be in full blast and your property and your lives will be in danger.

This is your last chance to prepare for winter. Do it now before you forget. Inspect your chimney at once and see that it is safe.

GRINDING FEED

When feeds are scarce and high in price it is important that there be as little waste as possible. Grinding such feeds as corn, oats, or kafir, has for its purpose the increasing of their digestibility. Whenever an animal swallows grain whole, or only partly masticated, there is likely to be a loss since part of the grain is not acted upon by the digestive juices.

In cattle feeding it is customary to depend on hogs for picking up the waste, and this is usually a cheaper method than to grind all grain.

Quite extensive experiments have been conducted to test the value of grinding grain for hogs. As a result of these tests it appears that for hogs weighing 150 pounds or more, being fed in dry lots, it saves feed to grind it. The saving may amount to as much as from four to six per cent. Of course, when grain is high in price the saving amounts to more in actual money than when it is low in price. Where rapid gains are desired and the feeder can conveniently feed ground feed, we believe it will pay to grind the grain when it is as high in price as at the present time. Small grains like kafir should always be ground. They are hard and much will be swallowed whole by most animals.

It is always good policy to feed hard-working animals ground feed. The cow giving a large flow of milk is a hard-working animal and since the act of mastication requires considerable energy, the grain fed should be made as easy of mastication as possible. We believe the milk cow should always be fed ground grain. This not only saves energy that can be turned to the production of milk, but it is impractical to use hogs to clean up after milk cows, so the waste from feeding whole grain cannot be saved as in feeding steers.

The ideal way to grind corn is cob and all. Corn and cob meal is worth as much, pound for pound, as is corn meal. This means that seventy pounds of meal, instead of fifty-six, is secured from a bushel of corn. Clear corn meal is a heavy feed and it is usually considered necessary to feed bran with it to lighten it. It takes considerable power to grind ear corn into meal, but at the present prices of corn it will pay.

What is true of corn is also true of kafir, or other grain sorghums. These grains are better for cattle feeding when ground into head meal. The fiber of the head lightens the meal just as the cob lightens corn meal and makes it more easily digested. There are mills on the market that grind the heads of kafir or milo successfully. The introduction of these mills will make the sorghum grains more popular among cattle feeders. The waste resulting from feeding sorghum grains has worked against their use.

Wherever there is an engine on the farm, there should be a feed grinder. It may not be profitable to grind feed at all times, but when it is high in price; expense put into preparing it for easier mastication and digestion will result in profit.

Never before have we entered the winter packing season with such high prices being paid for hogs. Packers succeeded in hammering down the price from the record high level of a few weeks ago, but we still have the ten-cent hog. The demand for meats and hog products is such that it seems only reasonable that prices for hogs should be maintained on a high level. Packers will have to pay more for their hogs this winter than in any previous season. We believe that those who have light hogs will find it profitable to hold them back and mature them to heavier weights whenever it is possible to do so. Even with present high prices of grain, there should be money in finishing hogs at the prevailing market.

Diseases of animals cause losses of \$212,000,000 a year in the United States. Much of this loss is preventable.

DRY FARMING AND LIVE STOCK

At the Dry Farming Congress recently held in El Paso, Texas, the dry land farmer was urged to grow more live stock. The arguments advanced were that he must provide a market for many crops that do well under dry land conditions, but cannot be sold except in the form of live stock or live stock products. It was also pointed out that the dry land farmer is at present confronted with almost prohibitive freight rates on bulky products. Even alfalfa hay cannot be shipped to market with any profit from the inter-mountain states.

This matter of growing more stock in connection with grain farming in regions of light rainfall, was discussed by some of the strongest men on the program—men who have had wide opportunity to observe the results coming from what is called dry-land farming all over the country. Even the necessity for conserving soil fertility and adding organic matter to the soil, was mentioned.

We most heartily commend this policy of the Dry Farming Congress. As long as the dry land farmer was simply striving to work out dependable methods of growing grain with limited rainfall, he was making little progress financially. Only by adopting the policy of converting into marketable form such crops as can be grown every year, has any permanence in dry land farming been worked out. We believe the prosperity of those who farm in regions of light rainfall, depends in a large measure upon the extent to which they introduce live stock into their system of farming. Many improved methods of handling the soil have been discovered and these are being generally adopted by the most successful farmers in dry land sections, but to make the most money they are all dependent upon live stock to market the crops grown.

It is in this direction that the greatest possibilities exist in the western part of our state. Feed crops can be grown every year, stored in silos or in other form and converted into cash by the dairy cow or stock cattle. By storing in silos, the surplus grown in good years can be carried over and fed in years when feed is scarce. The dry land farmer should by all means be a live stock farmer, and the International Dry Farming Congress has placed its stamp of approval upon this policy in no uncertain terms.

RURAL LIFE CONFERENCE

Rural life conferences are becoming very popular all over the country. Their purpose is to make detailed studies of living conditions in the rural districts. Anything that tends to improve conditions and make life in the country more satisfying, comes within the scope of these conferences.

Kansas is to have such a conference the coming winter, lasting two weeks. Walter Burr, who has charge of the department of rural service in the extension division of the Kansas Agricultural College, called at the KANSAS FARMER office last week and in the course of his visit told us that plans for this conference are now under way. It will be held January 30 to February 10, 1917, at the agricultural college. The annual Farm and Home Week meetings will be held during the second week this conference is in session. This annual meeting has in past years been held at the holiday season, but for very good reasons the date has been changed this year.

Men of national reputation will take part in the rural life conference. It is not too early to begin planning to attend this conference. Arrangements are being made whereby the expenses of a limited number of rural pastors will be met so they can afford to attend. Mr Burr has a plan whereby the expenses of a few delegates to the conference can be met, and we would suggest that those of our readers who are interested, write to him at Manhattan for the details of this plan.

FARM ELECTRIC PLANT

Current Furnished for From Five to Fifteen Cents a Week

OF THE many little jobs electricity does on the McAfee farm, in Shawnee County, one is to run an electric fan to keep up the breeze and drive away the flies while the young farm manager shoes the horses. This is only one of the many pleasures and comforts this family derives from the electric plant, however. They would no more think of going back to using the coal oil lamp than you would think of using candles and torches for lighting purposes.

The cost of running this electric lighting plant is no more than that of running coal oil lamps. It costs about five cents a week to furnish all the electricity needed in the summer and about fifteen cents a week in the winter, when more lights are used for longer hours. The upkeep for this plant for a year and three months was absolutely nothing. The first cost is practically the only cost, and that depends upon the size and type of plant installed.

The cost of installing the plant on Mr. McAfee's farm was \$415 for the gasoline engine, generator, switch board and storage batteries. However, there are good substantial plants for \$250. The wiring and fixtures for the buildings cost \$200, the total cost of the plant being \$615. A two and one-half horsepower gasoline engine running a generator capable of generating a current of 1.8 amperes at from 30 to 40 volts, furnishes the power. The engine, generator, switch board, and sixteen storage batteries comprise the entire plant.

Three hours of running a week is sufficient to keep the batteries charged during the summer months, and about three times that long in the winter. It requires no more attention than that of starting and stopping the engine once a week. This particular engine is a kerosene burner and has not given any trouble since the plant was installed.

An electric lighting plant on the farm is an added convenience that will more than pay for itself with the comfort and cially, the electric lights are economical both around the house and barns. During the long winter evenings, when the family has plenty of time to read, the electric lights will be especially appreciated. A more steady and even light

can be obtained, without the dirt, smoke and odor characteristic of the coal oil lamps.

The trouble and time lost hunting for a lantern and cleaning it up every time usefulness it will give the farmer and his family. During the winter especially work is to be done at the barn after night, is eliminated by the electric lights. Another point in favor of the electric lights is that there is less danger from fire. If the wiring is carefully

the electric lights. The loss of a house or a barn or some other building from an overturned lamp or lantern would pay for two or three electric lighting. They will eventually be installed upon practically every farm. The sooner one is installed upon your farm, the more service you will derive from it.

Daily weather forecasts are now being sent out from the Kansas Agricultural College. Wireless stations in several

them almost instantaneously. Messages are received from the Panama Canal Zone, the United States naval training station at Great Lakes, Ill., and from New Orleans.

Electricity in the Home

There are now so many devices for using electricity to perform household tasks that the installation of electric plants is becoming more and more to be desired.

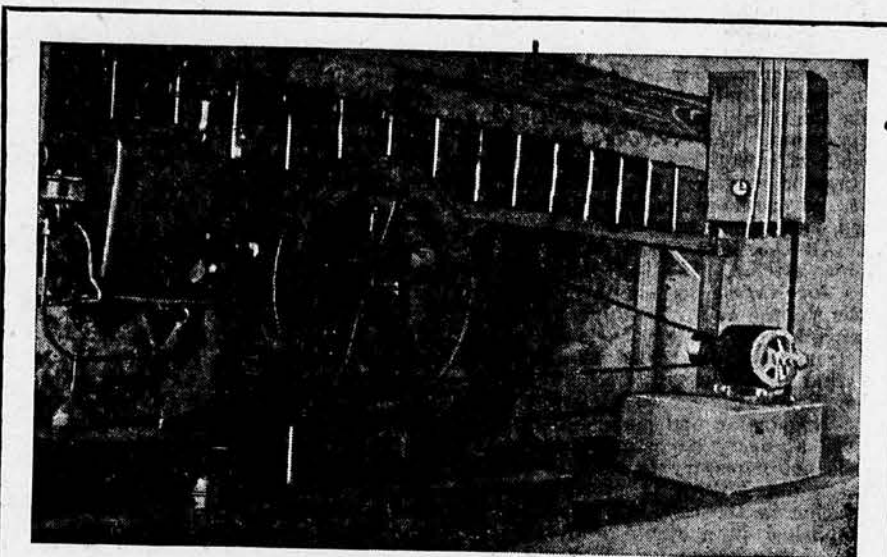
Electric motors in the home are used to drive washing machines, dish-washers, ice cream freezers, vacuum cleaners, sewing machines and small refrigerating plants. On the farm, motors can be used for operating churns, cream separators and water pumps. Motors are also used to drive coffee mills, food grinders, knife sharpeners, mangles for ironing flat work, ice crushers, dumb waiters and blowers or fans for various purposes.

Motor-driven household machinery has, besides many minor advantages, two important virtues. It eliminates all the hard, tedious labor in domestic tasks and cuts down the time required for these tasks.

When the washing machine and the wringer are driven by a small electric motor, the only hand work necessary on wash day is to sort the clothes, place them in the machine, and hang them on the line when they are clean. When they are dry the electric flat-iron lessens the labor of ironing.

A number of motor-driven dish-washing machines are now on the market which will do this work satisfactorily. An entire day's dishes for an average family can be washed in less than fifteen minutes and the only hand labor involved is that of placing the dishes in the machine and taking them out when finished. With most types of machines, the dishes are dried by draining and the heat of the water, thus eliminating the usual wringing of the dish towel.

Vacuum cleaners are now so popular that little need be said beyond pointing out that their use not only gives far better results than the old broom method but banishes the dust cloth, thus greatly reducing the time required for house cleaning.



ENGINE, GENERATOR AND STORAGE BATTERIES OF ELECTRIC LIGHT PLANT ON M'AFEE FARM

done there is practically no danger from systems on the farm. It is better to prevent a loss from this source than to repent afterwards. An electric light in the barn where the big Chicago fire started in 1871, would have saved a loss of \$192,000,000 and 300 lives. And still, cows are kicking lanterns over on the farms just as regularly and more frequently than they ever did in Chicago.

An electric lighting plant on the farm is useful, convenient, and economical.

Kansas towns receive the forecast several hours in advance of the copy sent by mail. The station is operated by the physics and military departments. They are now prepared to receive wireless messages from all parts of the country. Weather and time reports are received daily from Arlington, Va. The messages are taken at Manhattan at 10 o'clock in the morning and at 8 at night. They travel at the rate of 187,000 miles a second, making it possible to receive

Cattle Feeds Wasted

WE keep cattle to consume the rough feed of the farm, but vast quantity of feed available for this purpose is now either wasted absolutely or put to some less profitable use.

The Federal Department of Agriculture has made a comprehensive survey of the entire meat situation in the United States and in the published report points to this failure to utilize the full value of this material. It has increased unnecessarily the cost of producing meat, has diminished the profits from cattle feeding, and has discouraged many farmers from engaging in an industry essential to their permanent prosperity.

According to this report, the loss in grain straw and corn stover amounts to more than \$100,000,000 annually. Both of these products are disposed of most economically when fed to cattle in connection with some form of concentrated feed. Straw is especially valuable in carrying the breeding-herd through the winter, in wintering stockers, and as a supplementary roughage for fattening cattle. Stover, too, is an excellent feed for wintering cattle, especially mature breeding cows. Nevertheless, in many sections of the country where these products are abundant, little attempt is made to take advantage of their value for these purposes.

Of an annual straw crop of approximately 120,000,000 tons, it is estimated that only two-thirds is put to its best use—live stock production. Of the remainder a little more than one-half is sold or turned under and the rest—15 per cent of the total crop is burned. Burning is practically an absolute waste and although plowing under does contribute something to soil fertility, the benefit to the land is less than that which would be derived from the use of

the straw to produce manure. "Of all systems of obtaining permanent fertility," says the report, "none is so practical or as easily available as that of feeding live stock."

The average value of all kinds of straw is placed at about \$5 a ton. In many sections, of course, no such price can be realized for it, and as a matter of fact only about 8 per cent of the crop actually is sold. The figure mentioned above, however, may be taken as representing the value of straw if used properly in farming operations as feed or bedding. In order to illustrate how this may be done the following sample rations for wintering a breeding herd of beef cattle on straw combined with silage, shock corn, and cottonseed or linseed meal are given: Any one of these rations will prove economical and bring the cattle through in good shape.

RATION 1.	
	Lbs.
Straw	10
Silage	20
Cottonseed meal or linseed meal....	1½
RATION 2.	
Straw	20
Cottonseed cake or oil cake.....	2
RATION 3.	
Straw	10
Shock corn	10
Cottonseed meal	1

By feeding straw in the winter it is often possible to secure the full utilization of summer grass. In a number of Western states it frequently happens that grass goes to waste because feeders are unwilling to pay the high prices asked for steers in the spring. By using the straw and other cheap feed on hand to lessen the cost of wintering, feeders can take advantage of the lower prices for stocker cattle in the fall to secure on reasonable terms at that time

enough stock to pasture all their grass the following year.

The production of corn stover is about twice that of straw, amounting in the United States to approximately 245,000,000 tons a year. A larger percentage—81.5—of this is fed than of the straw, but the waste is nevertheless astonishing. For this, poor methods of feeding are largely responsible. By far the most economical method of handling corn is to store it in the silo, but as a matter of fact only 8.1 per cent of the acreage was put in the silo in 1914, the year in which the government investigations were made. About 11 per cent was cut for green feed and 81 per cent allowed to mature for grain. It is in the last portion of the acreage that the greatest waste occurs. Stripping the leaves from the stalks which are subsequently burned, removing the stalk above the top ear only, leaving the stalks to stand in the field until the loss of leaves and leaching have removed much of their fertilizing value, are all unthrifty methods. Furthermore, almost four per cent of the stover is burned, as though, instead of being a potential source of revenue, it was merely a nuisance to be gotten rid of as a preliminary to plowing. In some states the percentage of stover that is thus thrown away is as high as 7 or 8 per cent and the total loss to the country from the practice is estimated at nearly \$15,000,000 a year.

To obtain satisfactory results from the feeding of farm roughages such as straw and stover, they must be combined with some form of concentrated feed. At the present time large quantities of such feed, in the form of cottonseed meal and cake, corn, molasses, peanuts and beans are exported for the use of European feeders. If the straw and stover that are now wasted were

employed to feed more cattle, these concentrates could be consumed at home. The result would be a tremendous saving not only in the cost of producing beef, but in the cost of enriching the soil as well. In 1914, for example, about 1,000,000 tons of cottonseed meal—half the total production—were applied directly to the soil as fertilizer. If this had been fed to cattle instead, three-quarters of the fertilizing value would have been returned to the soil as manure. The loss of the other fourth would have been far more than counterbalanced by the profit on the meat produced economically by the meal and the necessary roughages. Much the same thing is true of the other oil meals.

The value of these meals is far better appreciated in Europe than here. Denmark, for example, feeds annually 478 pounds of oil cake to each of her mature cattle, the United States approximately twenty-four pounds. Furthermore, the European feeder is aware of the fact that the high-protein meal, while more expensive to buy, is more economical to use. Meal of this quality is seldom sold on the domestic markets because the American farmer has not yet learned its value. Cottonseed and linseed are perhaps the best known of the oil meals but there are others the use of which as feed could be profitably extended. Both peanut and soy bean meal and cake, for instance, are in good demand in Europe.

The efficient use of these and other feeds is of the utmost importance to the American farmer. The day when close calculation in feeding was not necessary is, in all probability, past. Hereafter it is likely that success will depend upon ability to put to the best use all available products. A greater knowledge of what these products are and of the ways in which they can be fed will result in the elimination of enormous waste.

SEWAGE DISPOSAL ON FARM

Septic Tank and Absorption System Is Practical and Safe

THE city house has long been equipped with many modern conveniences that are quite generally considered out of the question in the farm house. The most important of these are running water in the house and a means of disposing of sewage and waste.

The cost and difficulty of installing the farm outfit is not so great as has been commonly supposed. It is stated by F. M. White and E. G. Hastings in a recent circular from the Wisconsin Experiment Station that a sewage disposal system for a farm house requires no greater expense than is needed to rid the house in the city of its sewage. This circular tells how to install a practical and satisfactory sewage disposal system and, realizing the importance of this question to the health and comfort of the family in the country, we reproduce part of the illustrations and descriptive matter contained in this pamphlet.

HOW SEWAGE DECOMPOSES

Household sewage consists of the water from kitchens and laundries, a small amount of organic matter and the human excreta, all of which, in a disposal system, is carried by water from the house.

It is well known that organic matter (material which comes from plants and animals) will disappear as such, when placed in the soil or in water. This waste material is attacked by bacteria, or very small forms of plants, that grow in great abundance in the soil and in water. They use the organic matter as food, obtaining from it what is needed for their growth and the energy which is required for their life processes.

Two groups of bacteria aid in the de-

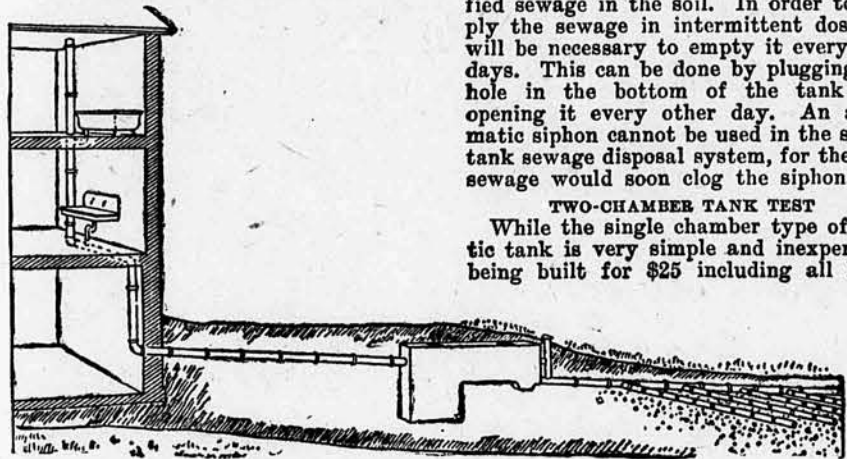


FIG. 1—SAFE DISPOSAL OF HOUSEHOLD SEWAGE

composition, the second groups using as food the by-products or substances produced by the first. By the continued action of these bacteria, the organic matter is gradually changed to more and more simple forms and finally to water and such substances as carbon dioxide, sulphates, nitrates, and phosphates, which are used by green plants as food.

NEED FOR TANK

The first part of the decomposing process is caused by organisms that grow away from air, while the remainder of the work is done by organisms that demand a large amount of air. It is thus found convenient, under practical conditions, to provide a tank in which the sewage remains for a time away from the air, and then to allow the last steps in the process to take place in the soil where there is an abundance of air.

The container in which the first part of the process takes place is usually called a "septic tank." It should be of concrete construction and, so that it will

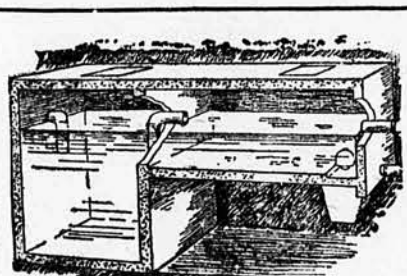


FIG. 3—INTERIOR, TWO-CHAMBER TANK

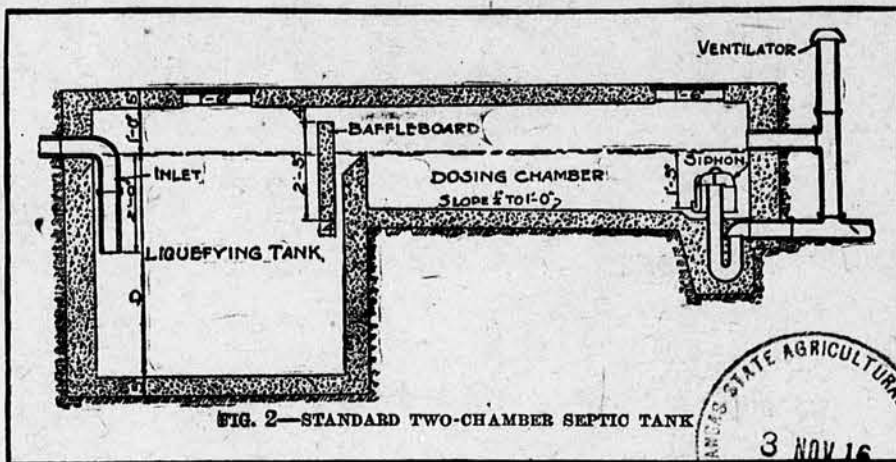


FIG. 2—STANDARD TWO-CHAMBER SEPTIC TANK

not freeze in winter, should be placed below the surface of the ground or be surrounded with from three to four feet of earth. It should be of such a size that it will hold the sewage that, under average conditions, will accumulate in from twenty-four to forty-eight hours.

The single chamber tank is the simplest form of a sewage disposal system that can be installed. The tank is merely a chamber so arranged as to prevent the rapid movement of the sewage and in which the solid organic matter is so changed that most of it will be liquefied. The liquid coming from the tank is not pure or clear, but contains finely divided particles, and would soon "waterlog" any soil if allowed to flow continuously into it.

A single chamber tank may be used in connection with an absorption system which, through tile, distributes the liquefied sewage in the soil. In order to apply the sewage in intermittent doses it will be necessary to empty it every two days. This can be done by plugging the hole in the bottom of the tank and opening it every other day. An automatic siphon cannot be used in the single tank sewage disposal system, for the raw sewage would soon clog the siphon.

TWO-CHAMBER TANK TEST

While the single chamber type of septic tank is very simple and inexpensive, being built for \$25 including all labor

and materials, it requires too frequent attention. The two-chamber or compartment tanks are much more satisfactory.

The first chamber of a two-compartment tank serves the same purpose as does the single tank. The two chambers, as shown in Figure 2, may be connected either with a baffle board or by means of a tile. The second tank is shallow so that the system can be installed on level ground. The concrete walls are eight inches thick, the partition six inches thick. The capacity depends on the length and width of the tank. The second chamber is merely a storage tank from which the liquid may be applied in intermittent doses so that the soil will not become water-logged. The first chamber should hold about two days' flow and the second one day's flow. In order to prevent the scum, which forms on the surface of the liquid in the first chamber, from passing into the second chamber, a six-inch pipe should be provided that extends eight inches below the surface of the sewage in the first compartment. A baffle board made of concrete or iron extending across the tank, will answer the same purpose. As sewage enters the first compartment, a like amount will be discharged into the second from which it is emptied by the siphon, which begins to act when the sewage has reached a certain depth in the second compartment. The second compartment may be shallower than the first. This is often demanded on account of the slope of the ground.

The tank may be located close to the house since the odors from it will not be objectionable. In case it is placed

some distance from the house, fifty feet or more, it is desirable to have the waste from the kitchen sink pass into a grease trap. When the dish water and other kitchen wastes are emptied into the sewage system, the grease may clog the tile leading to the septic tank. A grease trap prevents this trouble. In Figure 4, A and A mark the concrete cover and bottom; B, grease floating on water; E, E, glazed sewer tile 22 inches in diameter; F, F, F, four-inch glazed sewer tile arranged so that the water and grease are separated; the grease being kept above the water and out of the sewer by placing the tile as shown in figure. If the tank is placed close to the house, no grease trap will be needed.

If the sewage from the tank is not to cause trouble, it must be discharged at intervals of twenty-four hours or more and be distributed through a considerable area of soil. In this way before another quantity is applied, the water will have had a chance to leach away, the air be drawn in and the bacteria an opportunity to change the organic matter in the sewage into minerals, that will be leached from the soil by the water. The soil will thus remain in such condition that the process can continue in it indefinitely, grass and other vegetation will grow luxuriantly and no objectionable features will ever be noticed. This explains why the tank must be emptied at intervals rather than constantly.

THE ABSORPTION SYSTEM

The general arrangement of the absorption system is shown in Figure 1. The layout of the tile will depend entirely upon the contour or lay of the ground so that no exact arrangement can be given. The top of the tile should be placed in the ground from ten to twenty-four inches below the surface of the ground as indicated in Figure 9. It may be necessary to have the first few tile too deep in the ground to have them aid greatly in purifying the sewage. The character of the soil will govern the depth, to a certain extent, but the tile must not be laid too deep or else the final stages of purification will fail to take place because of insufficient supply of air.

When the tile is so arranged that the air has an opportunity to circulate around and through them, the absorption of the water and the bacterial action is hastened. In all installations, cinders or coarse gravel should be laid around the time, as shown in Figure 5, more of this material being used in heavy than in light soils. The joints of the tile are not fitted closely, but laid with a small gap between each tile. This gives the liquid a chance to escape into the soil. A, in Figure 5, represents the dirt fill, which may vary from six to twenty inches.

If there is an excess of water passing through the tank, as may be the case when the washings from the dairy house are run into it; in a very tight clay soil; or where the ground water is near the surface, a second line of tile should be laid below the first. The upper run of tile is the true absorption system and is connected with the outlet of the septic tank. The other end is closed. The lower run of tile should be placed about one foot below and from three to five feet to one side of the absorption tile. These tile are closed at the end next to the septic tank and may empty into the

general farm drainage system, a combination rock and gravel dry well, or a small stream.

The disposal tile in the absorption system should not have very much fall, otherwise the water will all rush to the outer end and in a short time the soil at the end of the system will become water-logged. The fall should vary from four inches in a hundred feet in a tight clay soil to eight inches in a hundred feet in a sandy soil.

The tile used for the absorption system are the ordinary four-inch farm drain tile and should be laid about one-quarter of an inch apart. Broken pieces of tile should be placed over each joint as a cap to prevent loose sand and dirt from filtering into the system. One foot of four-inch tile should be provided for every gallon of water discharged into the system. In the case of heavy clay soils two feet of tile to the gallon should be provided together with the double tile system.

While the automatic siphon is not a

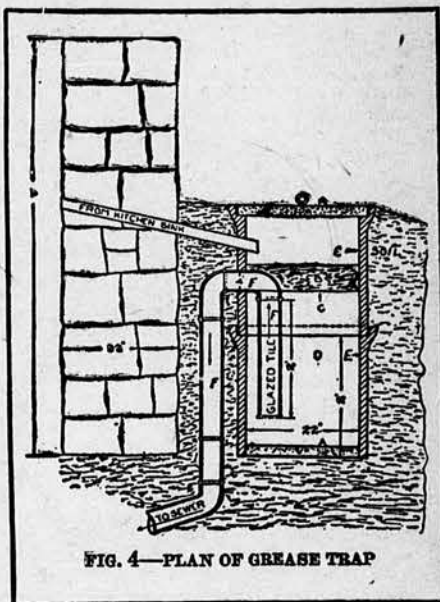


FIG. 4—PLAN OF GREASE TRAP

necessity in a sewage disposal system, yet the pulling of a plug to empty the tank every other day is uncertain at best. The automatic siphon requires no attention and is easily installed. It insures the emptying of the tank at the moment the liquid in the dosing or second chamber reaches a certain point.

As the working depth cannot be varied on the siphon, careful attention must be given to placing the siphon according to directions given by the manufacturer. A three-inch automatic siphon is the size suitable for the average system.

A tank such as is described or on this plan can be installed by ordinary farm labor after the necessary plumbing has been placed in the house. It will add much to the comfort and convenience of the members of the family and will have an important bearing on the health of the home.

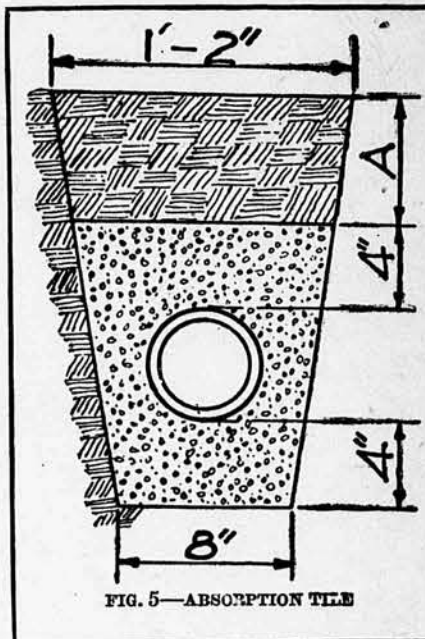


FIG. 5—ABSORPTION TILE



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Spreaders
Low Corn King
Low Cloverleaf

ONCE you have seen both kinds of work you will say: "There is certainly a wide gulf between the ordinary spreader and the modern IHC machine, with its good, wide-spreading device. Give me the up-to-date, time and labor-saving spreader."

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No. 2 Junior—a light running, easy cleaning, close skimming, durable, lifetime guaranteed separator. Skims 95 quarts per hour. We also make four other sizes up to our big 600 lb. capacity machine shown here—all sold at similar low prices and on our liberal terms of only \$2 down and a year to pay.

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Don't take the milk pail to the pump, but keep a constant supply of fresh, clean, wholesome water before each cow. Milk is 86% water, and to do her best as a producer the cow should have a fresh drink whenever she wants it.

The Loudon Automatic Water Bowl enables the cow to water herself. She lifts the lid to let fresh water in; when the lid closes all refuse water drains off. No water stands in the bowl. No dirt can get into it. It is absolutely sanitary. Ask for Booklet No. 11.

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ECONOMY IN FEEDING

WHEN grain feeds are high in price we are nearly always tempted to pinch down on the rations fed to the milk cows. Some dairymen who are very businesslike in keeping track of exactly what it is costing to keep their cows, forget the future in their anxiety to make a good profit in the present. High producing cows will continue to give milk even when the nutrients supplied in the feed are below the actual requirements for milk production. Both ash and fat can be transferred from the reserve stored in the animal body and used for milk production. The poorly fed cows gradually run down in condition as a result of this draft on their reserve store of ash and fat and eventually the reckoning day will come. It costs more to put fat back on the animal and get it in good physical condition again, than to keep it in this condition. The herd that has become thin and lacking in vitality through a course of scant feeding, will require a period of very liberal feeding to get it back into good working condition and while the cows are rebuilding their own bodies and restoring their lost vitality they cannot do much at the pail.

Cows that are permitted to run down in condition while giving milk are apt to do poorly when they come fresh again. There may be trouble at calving time. The calves will be lacking in vitality, and the cows themselves, due to their reduced vigor, will not produce their normal flow of milk. It may take a whole year of liberal feeding to bring them back to where they were the year before.

This question of how to feed when grains are high in price, as they are at the present time, came up at the meeting of the Holstein-Friesian breeders held in Manhattan, October 7. A number of the older men present stated that it was their experience that it does not pay to pinch the grain sack too tightly just because feed is high. The best policy in the long run is to keep the cows up in good working condition, even though for the time being the profit over feed cost may not be very great. Prof. O. E. Reed was asked how to economize in feeding milk cows. It was a practical question to Professor Reed because he is feeding about 130 dairy-bred cattle and has only fifty-three acres on which to grow feed. Practically all the feed must be purchased. He stated he did not think he would make any changes in the grain ration he has been feeding the college cows. Even at present high prices, corn is the cheapest source of carbohydrate material. A protein supplement is almost necessary and at the present time he prefers oil meal to cottonseed meal, his reason being that the linseed oil meal can be purchased for about the same price at the present time. Ordinarily, protein can be purchased cheaper in the form of cottonseed meal than in linseed meal, but the linseed meal is relished a little better by the cows and has a somewhat better physical effect upon them.

On being asked what he planned to feed as a grain ration, Professor Reed stated that he expected to continue their standard ration which consists of a mixture of four parts corn chop, two parts bran, and one part oil meal. This grain will be fed in sufficient amount to keep the cows in good working condition. In other words, they will not be permitted to run down in flesh and become poor and scrawny.

We believe the above advice is good when the future is considered as well as the present. Cows must be kept in vigorous condition or they cannot produce strong, thrifty offspring, and this is an important point in developing a profitable dairy business. The herd must be maintained and improved.

There is one economy, however, that every dairyman should practice, and especially when feed is high in price. There are few herds in which there will not be found some cows that are not paying for the feed they eat and the labor of milking them. Keeping such cows in the herd pulls down the profits made by the good cows. Apply the scales and Babcock test and cut the herd down to the really profitable cows even if half the herd must go. A lot of feed will

be saved and this will be real economy, for these poor cows represent loss even when feed is cheap.

You cannot tell from the appearance of a cow, her capacity for production. The Nebraska Experiment Station recently reported a test in which two cows of very similar general appearance and conformation, were fed in the same way. They produced widely different quantities of milk and butter fat. The first gave in one year only 249 pounds of butter fat, valued at 30 cents a pound, and consumed feed worth \$64.15. This left a profit of \$10.55 above the cost of feed. The other cow produced 387 pounds of butter fat and consumed feed worth \$66.50, thus making a profit over cost of feed for the year of \$49.60. This cow paid the owner five times as much for his labor in caring for her as did the first cow. If the test had not been applied, he would have judged them of equal capacity for returning profit.

Members of the Dickinson County Cow Testing Association who were present, reported that more dairymen were seeking membership in this association than can be handled by one man. This is the first time this has been true since the association was organized. One herd a day is the limit unless a couple of small herds are located close together. This desire to get into the association is undoubtedly an indication that the high prices of feed are leading many to desire to test out their poor cows. Through the influence and example of the members of the association these new applicants for membership have been led to see the value of this most important means of increasing their profits. There are many communities in Kansas where cow testing associations should be conducted. As yet this Dickinson County association is the only one in the state.

The work of KANSAS FARMER in establishing the Dairy Club among the boys and girls of the state is bearing fruit in at least one section of the state. Miss Dora Brader of Sherman is meeting with such success that in all parts of Labette County the possibilities of the dairy cow are being discussed. Mr. Marley, the banker at Oswego, who is co-operating with her and who furnished the money with which she purchased the cow, in a recent conversation stated that in four months this girl has paid a little over one-third of her note. A business venture which pays 100 per cent profit in a year is one that appeals to the intelligence of every thinking man. In a section of the state where the corn yield has fallen off 40 per cent in the last twenty years, something of necessity must be done to renew the land. The dairy cow is recognized as one of the best fertilizing agencies as well as a constant source of profit. Any influence which brings this fact to the attention of the farmers of the state is work well undertaken and of lasting benefit.—N. L. HARRIS.

Guernseys in College Herd

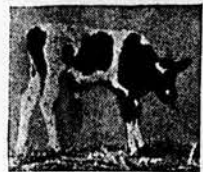
Admirers of the Guernsey breed of dairy cattle will be glad to know that the agricultural college has recently added some high class individuals of this breed to the college herd. Prof. O. E. Reed made a trip east and personally selected these additions to the herd. Four heifers were purchased from F. S. Peer of Cranford, N. J.—two two-year-olds, Imp. Golden Chance II of Ashburton and Imp. Lucy II of Corbinez, and two yearlings, Imp. Donnington Happy Girl 7th and Imp. Pallas. The two older heifers were imported from the Island of Guernsey while the yearlings came from England.

A young herd bull was also purchased from the Langwater Farms at Northeaston, Mass. This calf is a double grandson of King of the May, his sire being Langwater Warrior, who is practically a full brother to Langwater Hope, who has just finished a record of 19,000 pounds of milk and 1,003 pounds of butter fat in a year. The dam of this calf is Langwater Easter Lily, who has an Advanced Registry record of 11,075 pounds milk and 541 pounds of fat as a three-year-old. This wonderful daughter of King of the May recently sold in the Langwater sale for \$4,200.

Kansas Farmer Dairy Club

This Member Has a Goal

HERE are two letters from Max Hollister, Harvey County. The first one was received in July: "My cow calved July 7, 1916, but did not do very good at first and she lost out in her milk considerably. She has come back to her milk again and is giving four gallons a day."



"I did not start my milk record until July 15 on account of the cow being in poor condition and not giving much milk."

"The calf is a great big one and is well marked and in good condition."

"I am sure I will make a success as a Dairy Club member."

We have just received the following letter from him:

"I am sending you my reports for September."

"Do you think I am feeding my cow the right kind of grain or feed to get the best results?"

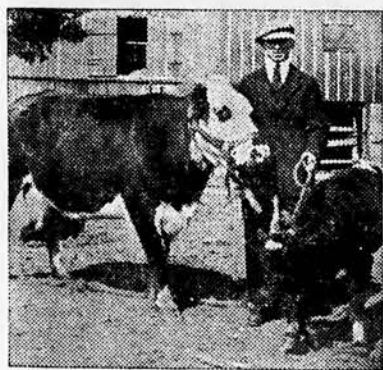
"I am sending you a picture of my cow and calf, which I told you some time ago I would send."

The picture of the cow could not be reproduced, so the cut shows only the calf.

Max's feed record shows he is feeding a ration made up of four parts corn chop, four parts oats, and one part linseed oil meal. With corn chop at \$1.25, oats at \$1.25, and linseed oil meal at \$2.50—the prices he is paying—the grain ration he is feeding is all right. This grain ration, with all the silage and alfalfa hay the cow will eat, should give good results.

Cow Returning Good Profit

The picture here shown is that of August M. Aaron, Jr., of Leavenworth County, and his grade Shorthorn cow and calf. He began his Dairy Club record August 23, and for the month of September his cow produced 30.88 pounds of butter fat, or a little over one pound



a day. This butter fat was produced on four pounds of bran a day and pasture.

We would suggest that as the pasture becomes less the cow be given some grain. The following is a good grain mixture for a milk cow: Four parts corn or kafir chop, two parts bran, and one part linseed oil meal or cottonseed meal, all by weight. One pound of this mixture should be fed for every four pounds of milk the cow gives. In addition to this grain ration the cow should get as much roughage as she will eat. Good alfalfa or clover hay and silage are the best roughages, but if these cannot be supplied, the cow should be given the next best roughage obtainable.

It is always more profitable to feed a dairy cow so that she will produce her full capacity of milk, than to allow her milk flow to shrink.

Feeding Corn Only

Corn alone is not a good grain ration for milk cows. We feed steers and hogs corn because we want them to get fat and ready for market. We do not want the milk cow to get fat. The grain fed must contain the nutrients from which milk is made, and this means there must be plenty of protein. Corn is rich in fat-making material but poor in protein. A hundred pounds of corn contains only about seven and one-half pounds of protein. A hundred pounds of linseed oil meal contains thirty-one or thirty-two pounds of protein.

Corn is not a cheap grain feed and we

would not advise any of our club members to feed corn alone. Some are doing this very thing. One member who started the month of September with a grain ration of oats, bran, and corn, dropped first the oats, then the bran, and at the end of the month was feeding ear corn only. We wonder why, for corn is higher in price than it has been for years and is not nearly as good a grain ration for making a cow give milk as the mixture fed at the beginning of the month, and an even better mixture would be corn, bran and linseed oil meal or cottonseed meal.

Since some protein must be purchased, the most economical plan is to buy it in the cheapest form possible. One club member is feeding four pounds bran, one pound of oil meal, and six pounds of corn and cob meal. One pound of oil meal has almost three times as much protein as a pound of bran and at present market prices the protein is much cheaper in the oil meal than in the bran. Since the corn is ground, cob and all, it is not necessary to feed bran to lighten the ration. The money spent for the bran could be more economically used in buying oil meal or cottonseed meal. In this particular instance we would replace at least three pounds of the bran with a pound of oil meal or cottonseed meal. It will be cheaper than the bran and will supply as much of the needed nutrients.

Corn alone may be all right for the cow that does not give very much milk and can have all the alfalfa hay she will eat. Feeds in general might be divided into two classes—those containing small amounts of protein and those containing large amounts. Feeds of the first class do not have protein enough for making milk. These are: Corn, kafir, corn fodder, prairie and timothy hay, straw, millet, and cane or kafir fodder. The feeds containing the larger amounts of protein are alfalfa, clover, cowpea hay, bran, linseed oil meal, cottonseed meal, and oats. A good milk ration cannot be made from feeds of the first class alone. A cow must have feeds of both kinds, and the more milk she is capable of giving, the more of the high protein feeds she must be fed.

Your HUDSON SUPER-SIX Will Advance \$175

You who now own a Super-Six will gain in the increase—no change in models

Your Super-Six will be worth more next year. And those who buy then must pay \$175 more. When cars under way are completed we must add to the price the added cost of materials. Price advances December 1st.

This is another unexpected attraction in the Hudson Super-Six.

The usual car, the first season, depreciates some 30 per cent. In addition to that, on later models makers often reduced the price. So the one-year drop in value averaged 40 per cent or more.

The Super-Six motor—almost without friction—hardly depreciates at all. And that's the chief part of a car.

The Super-Six price will advance with materials for we never shall lessen our standards. So December 1st, when materials on hand are exhausted, the price will advance \$175. And you who own the Super-Six will share that added value.

No Pretensions

That very announcement will reveal the strength of the Hudson position. Most weaker cars, we believe, will not dare to advance. Some way will be found to avoid it.

But the Hudson Company, on its Super-Six, will never make pretensions.

Hudson profits, considering our size and output are very small indeed. They have always been so, and all insiders know it. Our very balance-sheet proves that our margins are minimum.

On December 1st, we start using materials bought under this year's contracts. Prices on all of them have advanced enormously.

On a Hudson-grade car makers can lessen the quality without making the difference apparent at once. But that would be treason to Hudson standards.

So we do—and do frankly—what is obviously necessary. We add the extra cost of materials.

No Advance on Sold Cars

You who have already ordered—either open or enclosed Super-Sixes—will get delivery at the price agreed up to December 1st.

And many Hudson dealers, probably, have some cars yet to sell of our present production. We have 3500 cars under way, all of which will be sold at present prices.

If you can get one, get it. Buying now will save you \$175. And the present model will not be changed, unless in some minor refinements.

Another World Record

The Super-Six, as you know, holds a hundred records which no other car ever met. These include all the world's stock touring car records up to 100 miles. They include the 24-hour record of 1819 miles, where we broke the stock car record by 52 per cent.

They include the Pike's Peak hill-climb—the world's greatest event of its kind. The Super-Six won over 20 competitors.

Now we add the ocean-to-ocean record—from San Francisco to New York. The most sought-for record in America. That trip was made by a Super-Six in 5 days, 3 hours and 31 minutes—beating the record by 15 hours.

And that same car turned around at New York and went back to San Francisco in faster time than any other car ever made the ocean-to-ocean trip. It was the first car ever to make a round trip across the continent against time. The time for the round trip was 10 days, 21 hours, 3 minutes. That was only 2½ days longer than the best one-way trip made by a famous eight.

So the Super-Six today stands supreme. And there is no probability that a rival can match it, because we own the patents.

These are all-important facts.

Phaeton, 7-passenger . . . \$1475	Touring Sedan . . . \$2000	Town Car . . . \$2750
Roadster, 2-passenger . . . 1475	Limousine . . . 2750	Town Car Landaulet . . . 2850
Cabriolet, 3-passenger . . . 1775	(Prices f. o. b. Detroit)	Limousine Landaulet . . . 2850



HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

10,000 Farmers to Get Simplex Straw Spreaders

ON MY AMAZING NEW FARM DEMONSTRATION PLAN

If you have three or four neighbors or friends or relatives who do not own straw spreaders, write me at once! I'll make an offer that will open your eyes. Think of it! I'm going to dot the country with 10,000 brand new Simplex Straw Spreaders, for demonstrating purposes on the most radical selling plan ever conceived. If you want the world's best Straw Spreader for your own use, on amazing terms, find out about this at once!

Men, I've found the big secret of Straw Spreader sales! Yes, sir, my records prove that every Simplex I put out sells three or four more to farmers who see it spreading straw. 20 feet at a time! 50 acres a day! Thick or thin! That's what gets them! Thousands and thousands of farmers will buy my blue ribbon

SIMPLEX STRAW SPREADER

Makes Straw Worth \$2.50 to \$3.80 a Ton

—when they see how slick it works. And I know it! Every wide-awake farmer knows that straw is the best kind of fertilizer. They know it conserves moisture and prevents "winter-kill." Let them see the Simplex at work and they'll want one. That's why I'm going to send out 10,000 Simplex Spreaders at once to 10,000 different farms where others can see them working. For merely using the Simplex on their own farms where their neighbors can see it, I'm going to make these 10,000 men an unprecedented offer.

SMASHING CREDIT OFFER! A Whole Year to Pay!

Yes, sir! That's my startling offer to those who buy a Simplex; after they see it working on our demonstration farms. Long time credit! Unbeatable prices! 30 days' free trial without a cent in advance! I'll prove in a hundred different ways that the Simplex Straw Spreader is the world's leader—that it makes spreading straw easiest farm work.

THIS IS YOUR CHANCE!

I've made no deals on this new selling plan. This is the first announcement! Be one of the 10,000 out a brand new Simplex Straw Spreader for your own use on my amazing new Farm Demonstration Plan! Make every bit of your straw worth \$2.50 to \$3.80 a ton! Make big money business! Don't wait! Find out at once! I'll send details, hundred of letters from farmers and my big catalog all free by return mail. Write a card quick.

MANSON CAMPBELL, Pres.



MANSON CAMPBELL CO.,
564 Traders Bldg., Kansas City, Mo.

Decay-Proof Fence Posts

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

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

CREOSOTED Yellow Pine POSTS

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

Free Book

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

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

The Long-Bell Lumber Co.,

122 R. A. Long Bldg., Kansas City, Mo.



Biggs Pays Most for FURS!

Here's Biggest Money for your Furs and Hides—and quickest returns. Prices are away up and "Biggs at Kansas City" gives you most liberal grading and an honest deal.

"No Other House Would Pay as Much," writes Mitchell Carter, of Carbon, Texas. "I will always ship to Biggs."

The demand for furs and hides this season exceeds the supply. We need your furs and will pay you the price to get them, as over half a million satisfied shippers know. This is our 85th year of success. Ship to headquarters, save time and trouble, and get most money.

Biggs' Famous Bait Are Guaranteed

"Possum in 25c and 50c sizes; all others 50c and \$1.00. Bait," writes Karl Leskele, of Jackson County, Missouri. "It doubles my catch. A 25c bottle got me five coon the first night, next night four, and so on till I got fifteen. I shipped them all to Biggs at K. C. I got \$1.00 for each one. I got \$1.00 for each one. I got \$1.00 for each one."

FREE

Write today for free subscription to "The Trappers' Exchange"—our monthly magazine. Full of stories of trapping and hunting adventures sent in by successful trappers everywhere. Best trappers' magazine published. Don't Delay—send name Now.

E. W. BIGGS & CO., 433 Biggs Building, Kansas City, Missouri.



Tractor Free

SEND NO MONEY—JUST YOUR NAME

You can become the owner of this \$645 BULL TRACTOR, with out cost, as a result of a few weeks spare time work in your own community and I'll pay the freight. Don't delay, write today for my new, easy plan.

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

Don't Do It!

Don't waste your grain. Don't throw it over the fence, for the stock to lose one-fifth of it. Everyone knows that

A Letz Grinder Saves 20%

Grinds all grain and forage crops—cob corn with or without husk, alfalfa, clover, millet seed, even oat hulls—fine as dust in one grinding. One set of Letz self-sharpening, self-aligning, silent running plates grinds 1000 to 3000 bushels. Outwear 3 to 5 sets ordinary plates. Saving in plates soon pays for grinder. Ten days free trial. Feeding Book free.

LETZ MANUFACTURING COMPANY

103 East Street CROWN POINT, INDIANA



LIVE STOCK

The unprecedented sum of \$25,000 has been refused for Sophie 19th of Hood Farm, world's record long distance butter cow and world's record Jersey. The offer was made by Miss May Irwin, the famous actress, and was rejected by Sophie's owner, C. I. Hood. Miss Irwin owns a good herd in New York State and while visiting the National Dairy Show at Springfield, Mass., where Sophie was on exhibition in a special enclosure, she became captivated by the cow and sent a check for \$25,000 to Mr. Hood, but the offer was refused.

The act making appropriations for the Department of Agriculture for the fiscal year 1917 contains an appropriation of \$40,000 for co-operative work in dairying and meat production on the dry lands and irrigation projects. While this appropriation is less than half the amount estimated for, it nevertheless provides authority and funds for inaugurating the work during the coming year.

Successful curing of pork depends not only on the way the meat is handled in the brine, but also upon the way it is treated previous to pickling. Keep the hog off feed for twenty-four hours before slaughtering; do not run or excite the hog just before killing. To chill thoroughly and rapidly, split the carcass down the center of the back bone, or on each side of the vertebra, and pull the leaf. Real cold weather hinders rapid cooling, as the outside crusts over and holds the animal heat in the joints and larger muscles. Chilling the carcass slowly for at least twenty-four hours before cutting is the best insurance against "bone sour" in the pickled hams and shoulders.

Wintering Stock Cattle

When feed is scarce we are tempted to put our stock on scanty rations. By doing this we go back to the old range system, when only the frames of the cattle got through the winter, and it would be midsummer before they would regain the weight lost during winter.

I recently visited a successful stock feeder and breeder who once spent much time caring for range cattle. He recalls the great losses sustained by cattlemen by waiting until the cattle got weak before beginning to feed. Now he says that the time to use feed is at the beginning of the season, so as to keep the stock strong. Then, if feed supply fails, the cattle can stand the scanty ration better than if they were starved at the start. He says that we cannot afford to stunt the high priced, high grade stock we now have.—J. E. PAYNE, Oklahoma.

Breeding for March Pigs

In order that pigs may be farrowed early in March, sows must be bred between November 8 and November 15.

Select sows that are not too fat, even though they do not present a sleek appearance.

Select sows and sires of large litters. Although the sire has no direct effect on the size of the litter, prolificacy will be transmitted to his daughters. It never pays to use a grade of scrub boar.

Gilts should be at least eight months old when bred.

The sow three years old is better able to farrow a large, healthy litter than a gilt. Hence, it is an unprofitable practice to fatten and sell last year's brood sows and to breed only gilts.

If the brood sow is run down in flesh, feed her well until she reaches a good thrifty condition. She should not become fat.

Watch for Lumpy Jaw

Considerable loss occurs through the condemnation of the heads of beef animals because of "big jaw" or what is perhaps more commonly known as "lumpy jaw." It not only effects cattle but is troublesome to man. Treatment of this disease is very successful if taken in the early stages, and even when it is well advanced it can be controlled in many cases by a competent veterinarian. There is some question concerning the direct transmission of this disease from one animal to another, but there is no question about the folly of taking a chance on any loathsome disease among animals on the farm. Any nodule or abscess formation about the jaws or necks of cattle should be looked upon with suspicion and attended to at once.

Gombault's Caustic Balsam

Warranted to Give Satisfaction.



Has Imitators But No Competitors.

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

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

The Farmer's Friend

Formaldehyde has been rightly dubbed "The Farmer's Friend" because it serves the scientific farmer in a thousand ways.

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"The Farmer's Friend"

is the best and cheapest disinfectant—officially endorsed as the standard treatment for seed grains. It rids seed grains of smuts and fungus growth, also flax wilt and scab and black-leg diseases of potatoes, insuring healthy grain, clean potatoes, onions, cucumbers, etc. One pint bottle costing 35 cents treats 40 bushels of seed. Big book free. Write to-day.

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SPREAD STRAW

EVERY ton of straw contains more than \$3.00 worth of fertilizer. Spread straw and build up your soil. Increase your yield with a "Perfection" Straw Spreader.

You can spread 15 to 20 acres a day. Increase your crops \$5 an acre.

Few implements or machines pay for themselves as quickly as the PERFECTION Straw Spreader. Now in third successful year. Sold on 90 days trial. Fully guaranteed. I want every straw owner to have one of these money-making, soil-building, yield-increasing machines.

Free Book

Write for my big 32-page freebook, "Spreading Straw Pays." Learn why you should no longer burn your straw. C. E. WARNER, President.

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Sunshine Hog House Windows

Never need paint or repairs—good for permanent service.

For the most satisfactory window money can be put in, we have a new feature—full details and specifications. Worth money to you. We'll tell you about our other specialities—Chief Steel Ventilating Cupolas, New Chief Ventilating Windows, Chief Sidelight Windows, etc.

SHRAUGER & JOHNSON COMPANY
575 Walnut St. Atlantic, Iowa



FARM POWER

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

IT IS often important on the farm to know whether a piece of metal is iron or steel. H. A. Schott of the Colorado Agricultural College suggests four methods of distinguishing between iron and steel. The first and one most commonly used is to tap the metal with another piece of metal or to drop it on a hard surface—a concrete floor will serve—and note the sound made. If the metal has a clear ring, it is steel; if a very dull or dead sound, it is iron.

Another method is to examine the surface and corners of the piece in question. If the surface has a glass smoothness and the corners are sharp, it is steel. If the surface be rough and the corners somewhat rounded, it is iron.

Touch the metal to an emery wheel and observe very closely the sparks given off. If the sparks burst after leaving the wheel, it is steel. In steel some of the sparks burst and then the particles burst again. In iron this never happens and but very few of the sparks burst.

A final method, if the person is still in doubt, is to break the metal. If the fracture shows up fibrous with a dull appearance, it is iron. If the break is clean and the particles have a luster, it is steel.

Tractor Investigations

In an investigation conducted by the Federal Department of Agriculture, several hundred Illinois tractor owners were asked the questions: "What do you find to be the principal advantages of a tractor for farm work?" and "What are the principal disadvantages?"

A summary of the replies to these questions discloses the following interesting points:

The ability of the tractor to do the heavy work and to do it quickly, thus covering the desired acreage within the proper season, was considered the principal advantage. The saving of man-labor and the doing away with hired help was placed next. The ability to plow to a good depth, especially in hot weather, was placed third, while economy of operation, the displacement of horses, and the ability to use the tractor day and night were not mentioned by very many owners, although they are usually considered, theoretically, to be decided advantages.

Under disadvantages, difficulty of efficient operation and packing of the ground when damp were the principal points. Expense came next, while delays and inability to use the tractor for many kinds of work for which horses could be used were given by several owners.

While other advantages and disadvantages were mentioned, they were not given by a large number of owners.

Stop, Look and Listen

From two widely separated sources the need of attention at crossings of rail-ways and highways has been recently shown emphatically. The Iowa Highway Commission reports that in July out of a total of thirty-six fatalities on the roads of the state, fifteen were due to trains striking vehicles, and in addition seventeen persons were injured. And from the Southern Pacific Company comes the statement that of 33,500 automobile drivers observed at grade crossings, 53 per cent did not look either way before crossing the tracks and 8 per cent looked only one way. Only 0.52 of 1 per cent stopped their machines before crossing. Trains must run on tracks and on time; their engineers have no choice of routes. The automobilist can choose his route and regulate his rate of speed, but many grade crossings cannot be seen until just before they are reached, when the driver has little time to slacken speed. Road authorities should therefore see that warning signs are placed far enough from every grade crossing to make it certain that if an accident occurs on the crossing it is the fault of the driver, through his negligence to exercise proper care after ample warning.

In order to know what use is made of a road it is necessary to count the vehicles passing over it, preferably during twenty-four hours, on different days of

the week and at different seasons of the year. Such a count is called a traffic census. It is the scientific substitute for the supervisor's guess that the travel over the road is sometimes "heavy" and sometimes "medium." The Massachusetts Highway Commission took its first traffic census in 1909, and it took another in 1915, which showed that the total traffic on all roads had increased 145 per cent in that period. This is significant in itself of the development in transportation which follows road improvement, but it is only a part of the story. When the first census was made 61 per cent of the vehicles were drawn by horses while last year such vehicles were only 17.5 per cent. The annual increase in the number of self-propelled vehicles has been about 70 per cent, and the annual decrease in the number of horse-drawn vehicles about 5

per cent. But perhaps the most significant of all the figures, at least to those responsible for the construction and maintenance of roads, is the astonishing record of an increase of 230 per cent in motor truck travel from 1912 to 1915.

Power for Pumping

The power problem in pumping is constantly changing. The oil engines which were so popular a few years ago are being replaced in the Garden City district by electric motors. It is very noticeable that the man who owns an electrically-driven plant is irrigating his farm the most consistently. The motor is more reliable and is easy to operate. It is operated more consistently because there is a minimum charge for power, and the farmer plants to use this up.

In Kansas where the pumping plant is not used for a long period during the year, the electric motor is a desirable power. A first class motor represents an investment of about 30 per cent of the cost of an oil engine of equivalent horsepower. The depreciation is an electric motor is relatively small. With a slight depreciation and a low investment we are eliminating two sources of expense which must be considered in pumping plant operation. When these are considered as they should be, electric

power at a relatively high rate quite often has an economic advantage.

My investigations included sixteen typical shallow water electrically-driven plants in the Garden City district. In no case did I find the farmers dissatisfied with electric power.

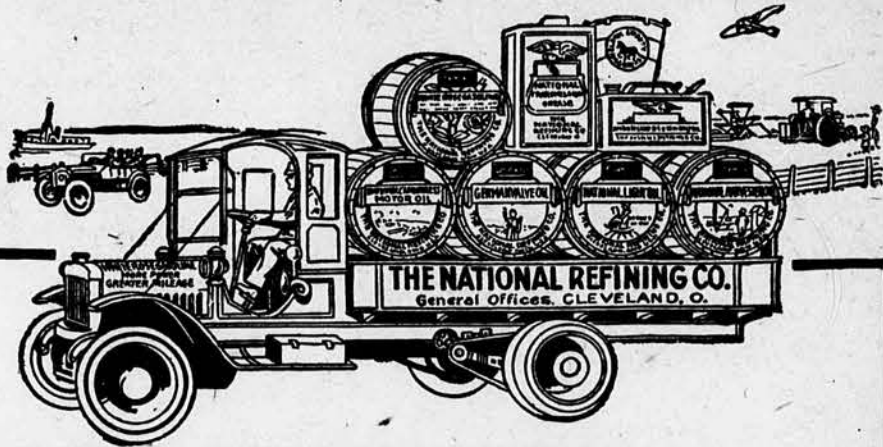
The oil engine where well housed and not overloaded is giving excellent satisfaction. This is the type of power that must be quite generally used where irrigation is practiced only by a few. Irrigation is practiced only by a few.—H. B. WALKER.

Horses Work Short Hours

The horse has a three-hour day, according to a Minnesota investigation carried on under the direction of Thomas Cooper, now the director of the North Dakota Experiment Station. It was found that a farm horse averaged about 100 hours labor per year, or about three hours per day. It was also found that the cost of maintenance for the horse was \$85 per year. This emphasizes the need of watching closely to see that too many horses are not kept. It also emphasizes the need of keeping brood mares and raising colts, so as to get more returns from the work horses than the three hours of labor per day.



For 35 Years—Always
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Unqualified Satisfaction



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Why National Carbonless Motor Oil and White Rose Gasoline Reduce Expenses

THOUSANDS of motorists write and tell us that before they started to use National Carbonless Motor Oil and White Rose Gasoline they had to "buy blindly."

Just as often they got very poor oil and very poor gasoline, regardless of the price they paid, whether at home or touring. "It's a case of trust to luck when you buy any other oil or gasoline," they say, "no matter what price they stick you for."

National Carbonless Motor Oil and White Rose Gasoline are always superior for use, in any make car, no matter where purchased. They are always UNIFORM in Quality.

All En-ar-co Products are always made on the "Quality First" principle, regardless of cost of raw materials, labor, time, scientific laboratory investigation and rigid tests both in the processes of making and in practical tryouts and use on every make of car.

Over 35 years of established good will with the public proves the superiority of En-ar-co Products.

We give every opportunity to you to prove these facts for yourself—for your lasting satisfaction and constant savings, dollar for dollar, in bigger value received in every gallon of these products.

Our Guarantee

The cost of operating any car made is too great—much more than it should be—unless National Carbonless Motor Oil and White Rose Gasoline are used.

When you use these EN-AR-CO First-Quality Products we guarantee: 1—More horsepower developed. 2—Minimum costs for repairs, caused by friction. 3—More miles per gallon. 4—Lowest operating cost per mile. 5—Longest life to any car. 6—Highest value when the car is to be traded or sold.

James B. Trotter
Vice President.

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National "Quality First" Products

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Proved highest quality by years of most practical tests and use. Guaranteed clean, clean, carbon-free. Lubricates perfectly without carbonizing. Guaranteed to eliminate costly repair bills, caused by friction, and to give perfect satisfaction in any make of automobile, motor boat or power engine. Try it.

White Rose Gasoline

Thousands of car owners refuse any other. Pure, dry, carbon-free gasoline. Every drop is power. Always uniform in quality. Insures continuous power—even pull—quick get-away—a silent, flexible power that means far greater mileage per dollar. Prove these facts easily by trying it.

National Light Oil

The bright-burning oil—the Al oil for lamps—no odor—no black chimneys. Best also for oil heaters; for the hot-weather oil cook stove; for incubators and brooders. Insist on getting this oil for most perfect satisfaction.

Black Beauty Axle Grease

Absolutely superior to any other and goes twice as far as ordinary greases. Won't spoil. Packed in useful galvanized pails. Friction-free, wear-resisting. No compound to clog and gum. Wagons last much longer and the load

for the horse much lighter. Practical farmers everywhere refuse to use any other.

En-ar-co Tractor Oil

You need this especially made oil for modern tractors. Has proper body to lubricate most efficiently. Hundreds of farmers tell us they have never been able to match its quality. Try it; prove these facts to your lasting profit.

National Frictionless Compound

The leading grease for Automobiles. Also for use in screw compression cups, crank pins, cross heads, valve motions, eccentrics, slides, pillow blocks, main journals, and in all heavy open bearings. Try it.

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I own (Give name above) automobile or tractor and inclose two 2-cent stamps. Send me Handy Oil Can FREE. Please give nearest shipping point in this state and quote prices on the items I have marked. I will be in the market about

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ASHBY 2 1/2 in.
LEXICON 2 1/2 in.

FITS EXTREMELY WELL AND
GOES WITH THE PREVAILING
STYLE IN BROAD END TIES
AND FOUR-IN-HANDS.

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FERTILE KANSAS LAND CHEAP

Those who located in Central Kansas 20 years ago are the big farmers 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 of moderate means.

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

You can 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 per cent—price \$10 to \$15 an acre.

Write for our book of letters from farmers who are making good there now, also illustrated folder with particulars of our easy-purchase contract. Address

E. T. Carlidge,

Santa Fe Land Improvement Co.,
1892 Santa Fe Bldg., Topeka, Kansas.

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A tractor that has proved what it can do. It has been given the "acid test". Simple - Strong - Durable. It meets your every requirement. The most popular, low-priced, serviceable tractor on the market. Built up to a standard at a RIGHT PRICE. A Tractor designed for years of service. Write for complete description and our introductory offer to Agents.
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MINNEAPOLIS, MINN.

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Write us first. Get our price list and shipping tags—find out for yourself that we pay highest prices for furs. We buy any quantity—every kind—give your furs a liberal grading and remit cash in full the same day your shipment is received. Write at once.
MCCULLOUGH & TUMBACH
Established 1893
132 N. Main Street, St. Louis, Mo.

Free Baits For Trappers

\$1.00 Bottle Free
Write today and get yours early, mentioning animals trapped. Don't delay for we have only a few thousand bottles to send Fur Shippers.
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Send for Catalog
FARM WAGONS
High or low wheels—steel or wood—wide or narrow tires. Wagon parts of all kinds. Wheels to fit any running gear. Catalog illustrated in colors free.
Electric Wheel Co., 34 Elm St., Quincy, Ill.

15c each; 6 for 90c

POULTRY

The fixtures of a farm poultry house, the roosts, dropping boards, and nests, should be simple, convenient, and readily removed to make cleaning easy.

Most hens have moulted late this year and will need extra good care if they are to lay any eggs before next spring. A little sulphur and oil meal will help them in growing a new coat.

Water is now selling at 30 cents a pint in most sections of Kansas when sold in egg shells. In each dozen eggs sold there is a pint of water. We must not expect a hen to lay eggs unless she has all the water she will drink. Water is just as much a necessary part of the diet of a laying hen now as at any other season of the year. We are much more inclined to neglect this important item in the fall than at any other time.

The offices and equipment of the American School of Poultry Husbandry have been moved from Mountain Grove, Mo., to Leavenworth, Kan. It now owns twenty acres of splendid land for poultry raising within the city limits of Leavenworth. It has its own administration building; own printing plant; incubator rooms equipped with three mammoth machines; laboratory; experimental pens; laying and breeding houses; stock of many varieties, and one of the greatest egg-laying contests ever held in the world. Twenty-five varieties of poultry have been entered in the American Egg Laying Contest which is conducted on its own grounds and these birds come from thirty of the leading states, from Canada and the Hawaiian Islands.

Milk Doubles Egg Production

Skim milk or buttermilk is a most valuable feed for laying hens. Its free use will often result in doubling egg production. The hen never lays an egg until all the ingredients necessary for the complete development of the chick are present. Since the egg contains protein as well as carbohydrates, any amount of carbohydrates fed in the form of grain will not offset the necessity of protein. Milk given to the hens either as a drink or in the form of wet mash, will double egg yields. Commercial meat scrap is of equal value, and may be substituted when milk cannot be obtained.

Protein for Laying Hens

Protein is essential to heavy egg production. In just what form to supply this food element is a question that puzzles many farmers, as well as townspeople, who are not in a position to grow their own feed.

Insects—in season—furnish much protein where the birds are on range. Poultry feeders have used raw meats or by-products of packing plants, known as beef scrap. As the demand has increased, the price of the latter has advanced. Now a few poultry raisers consider it too expensive and are supplying protein through vegetable sources.

Cottonseed meal is the most commonly used substitute, but where this has been given in place of all other heavy protein supplying feeds, the result has not been all that could be desired, points out N. L. Harris, superintendent of the poultry farm at the Kansas State Agricultural College. On the other hand, where cottonseed meal has been used as a supplement to beef scrap at the rate of 50 per cent of the ration, it apparently has given as good results as an exclusive meat scrap diet. On account of the bulk needed it is impossible for a hen to consume enough sour milk or buttermilk.

Ordinarily the beef scrap should constitute 10 per cent of the ration. Bran, shorts, and whole wheat furnish the rest of the protein needed in the ration.



65 quarts per hour
is the skimming capacity of our new No. 10 Economy King Cream Separator, which we sell at \$17.95. Ideal for three cows or less. See page 1478 of our big General Catalog for particulars.
Sears, Roebuck and Co., Chicago.



Hogs Grind Grain

THE HOG MOTOR is both a grinder and feeder. With it your hogs will grind their own grain, saving you money and labor. This machine will care for 30 hogs on full feed at a saving of 25 per cent of the grain and a pig of 40 pounds can operate the grinder. Grinds all kinds of grain, coarse or fine, separate or mixed. No waste—grain always dry, clean, fresh. We will keep the machine in repair one year free, and refund money if not satisfied at the end of sixty days. Send for Booklet. Agents Wanted.

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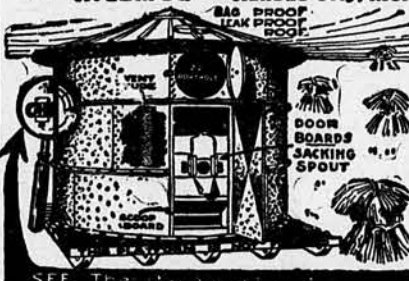
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GOVERNMENT FARMERS NEEDED. Big salaries. Permanent job. Light work. Write Oament, 44 E., St. Louis, Mo.

WANT MARRIED MAN TO WORK ON farm by the month, year around, with house etc. furnished. Geo. Molby, Barnes, Kansas.

CULTIVATION OF WILD FRUITS WILL interest and surprise you. Send postal for full information free. Valley Farm Co., Newburgh, N. Y.

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

YOUNG MAN, WOULD YOU ACCEPT A tailor made suit just for showing it to your friends? Then write Banner Tailoring Co., Dept. 421, Chicago, and get beautiful samples, styles, and a wonderful offer.

FARMERS WANTED—\$75 MONTH, MEN and women. U. S. Government jobs. Short hours. Easy work. Common education sufficient. Write immediately for list positions obtainable. Franklin Institute, Dept. R. 82, Rochester, N. Y.

WANTED—A MAN TO TAKE CHARGE of farm. Do light farming, superintend and assist in the care of a small pure-bred herd of Holsteins. Good salary and permanent employment. Located Northwest Missouri. Address G. Z. 4711, care Kansas Farmer, Topeka, Kansas.

AGENTS—A ONE-CENT POST CARD will put you in touch with an \$80 a week proposition selling aluminum utensils and specialties direct to the consumer. Don't let one cent stand between you and prosperity. Div. A. N. P., American Aluminum Mfg. Co., Lemont, Ill.

REAL ESTATE.

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

CALIFORNIA FARMS FOR SALE. WRITE for list. E. R. Waite, Shawnee, Okla.

WELL IMPROVED FARM FOR RENT, 500 acres. A. C. Krape, Garnett, Kan.

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

FREE—320 ACRES MONTANA HOME-steads. Send names of five interested parties for free circular. Bureau 333, Boulder, Montana.

WANTED—FARMS AND RANCHES. Owners send description. We have cash buyers on hand. Don't pay commission. Write Up-to-Date Realty Exchange, La Salle, Ill.

MISCELLANEOUS.

FOR SALE—TILE DITCHER, GRADER, road plow. P. J. Murta, Cuba, Mo.

TRACTOR FOR SALE—BATES STEEL Mule, in good condition, used since April. Priced right. C. C. Triplett, Fremont, Iowa.

BETTER LIVING. REDUCED COST. Will interest and surprise you. Send postal for full information free. Valley Farm Co., Newburgh, N. Y.

FOR SALE OR EXCHANGE FOR SOME-thing similar, Red Raven 374126 and 9675. S. Polled Durham, four years old, first class in every respect. Joseph Seal, Route 1, Wakefield, Kansas.

DOGS.

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

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

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.

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FERRETS, SINGLE, PAIRS AND DOZEN kits. Guinea pigs, rabbits, Toulouse geese, fox terriers and Angora kittens. Jewell, Spencer, Ohio.

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PLANT THIS FALL. BUY DIRECT AND have agents' commission and middlemen's profits. Fruit book free. Address Wichita Nursery, Wichita, Kansas, Box K. F.

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

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CLOSING OUT SALE OF FORTY HEAD of Shetland Ponies. Geo. Aid, Gallatin, Mo.

FOR SALE—SPOTTED SHETLAND PON-ies. J. H. French, 115 E. Sixth St., Topeka, Kansas.

HOGS.

POLAND CHINAS—SIX READY TO wean pigs, \$35; eight weaned shoats, \$55; 100-pound boars, \$15. Two herd boars. F. H. Barrington, Sedan, Kansas.

FOR SALE—FIVE PURE-BRED BERK-shire boars ready for service, and three head high grade Shropshire bucks, extra good ones. W. L. Snapp, Belleville, Kansas.

WANTED—TO BUY.

WANTED, FOR SEED—SUDAN GRASS, cane, kafir, milo maize, feterita, millet and sweet corn. The Barteldes Seed Co., Lawrence, Kansas.

POULTRY.

FINE BLACK LANGSHAN COCKERELS. Martha Haynes, Grantville, Kansas.

BIG SNOW WHITE ROCK COCKERELS, \$1.50 each while they last. Excellent show record. W. H. Beaver, St. John, Kansas.

MAMMOTH LIGHT BRAHMA HENS, \$1 and \$1.25. Fine birds. Ruth Foresman, Route 1, Belvue, Kansas.

BUFF LEGHORN COCKERELS, \$1.25. Free from black or white. Alf Johnson, Leonardville, Kansas.

FINE BUFF ORPINGTON COCKERELS, \$2 each. Mary E. Price, Route 7, Manhattan, Kansas.

WHITE ROCKS, SIZE AND QUALITY, priced reasonable. Write G. M. Kretz, Clinton, Kansas.

R. C. BUFF WYANDOTTE COCKERELS for sale cheap before winter. G. G. Wright, Langdon, Kansas.

COCKERELS FOR SALE—ANCONA, \$1; Blue—Andalusian, \$1.25. Mrs. John F. Smutny, Irving, Kansas.

SINGLE COMB RHODE ISLAND RED cockerels for sale. Mrs. Fred Schupbach, Downing, Missouri.

BIG BLACK LANGSHANS. FANCY AND utility cockerels and pullets. Guaranteed. H. Osterfoss, Hedrick, Iowa.

BIG BONED BARRED ROCK COCKER-els, fancy breeding, \$2 each. Bred to lay strain. C. D. Swalm, Geuda Springs, Kan.

PURE-BRED ROSE COMB WHITE LEG-horn pullets, yearling hens, cockerels \$1.00. Jennie Martin, Frankfort, Kansas.

FINE ROSE COMB WHITE WYANDOTTE cockerels and pullets, \$1 and \$1.50 each. I. S. Myers, Beatrice, Neb., Route 2.

BUFF ORPINGTON DUCKS, \$1.50 EACH, three for \$4. Mrs. H. E. Bachelder, Fredonia, Kan.

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

NICE YOUNG M. B. TURKEYS, Sired by Panama-Pacific Exposition winner. Hens \$4 and \$5, toms \$6 up. Mrs. H. E. Bachelder, Fredonia, Kan.

WHITE WYANDOTTES—CHOOSE COCK-erels now for next year's breeding, from one of the best strains in state. \$1.25 each. I. B. Pixley, Wamego, Kansas.

SINGLE COMB BROWN LEGHORN cockerels from prize winners and winter layers, \$1 each and up. John W. Moore, Hendrickson, Mo.

BARRED ROCK COCKERELS, LARGE early hatched, \$2 each. Exhibition males, \$5. Best blood lines. M. E. Lane, Clinton, Missouri.

PURE BARRED ROCK COCKERELS from prize winning stock. Farm raised. \$1.50 each before January 1. Mrs. H. B. Buchanan, Abilene, Kansas.

WHITE LEGHORN COCKERELS, \$2.00 each; "Banton" 286-egg strain. Free catalog. Satisfaction or money back. 1733 Ranch, Box 64, Route 6, Kearney, Neb.

BARRED PLYMOUTH ROCK COCKER-els—Grand breeding birds, large and well marked. Dams have trap nest record 225 eggs in year. \$3 each, two \$5.50, four \$10. Ike Hudnall, Milan, Mo.

S. C. BROWN LEGHORN COCKERELS in lots of twelve or more at a special low price. From greatest layers, none better. Satisfaction guaranteed. Mrs. C. Boudoux, Carona, Kansas.

SPLENDID "RINGLET" BARRED ROCK yearling cocks, \$3.00 each. "Goldbank" mammoth branze turkeys, big-boned lusty young toms, \$5.00 up. Harper Lake Poultry Farm, Jamestown, Kansas.

POULTRY WANTED.

GUINEAS WANTED—BROILERS, \$4; old, \$3 dozen. Coops loaned free. The Copes, Topeka, Kansas.

THANKSGIVING TURKEYS, GEESSE, ducks, guineas and chickens wanted. Coops loaned and price lists free. The Copes, Topeka.

CATTLE.

REGISTERED JERSEY CATTLE. PERCY Lill, Mt. Hope, Kan.

FOR SALE—TWO REGISTERED JER-sey bulls, best strains. Will trade for others. L. E. Pendleton, Dodge City, Kansas.

FIFTY HEAD CALVES, GOOD COLORS and quality, \$25 head; also seven young mules for sale. F. U. Dutton, Penelope, Kan.

HIGH CLASS REGISTERED BROWN Swiss cattle for sale, both male and female, at reduced prices. Write or call. Dahlem & Schmidt, R. R. 2, El Dorado, Kansas.

FOR SALE—SHORTHORN BULLS: ONE extra good white yearling and a three-year-old roan, both Scotch. R. H. Hanson, Route No. 3, Jamestown, Kansas.

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.

YOUR CHANCE TO START IN REGIS-tered Ayrshire cattle. My herd bull, Gen. Argyle, and two females coming three years old; two high grade heifers and three high grade Holstein springers at a bargain. J. A. Corkhill, Goodland, Kan.

THE STRAY LIST.

TAKEN UP—BY ARNOLD STREIT AT his premises two miles east of Bern, Nemaha County, Kansas, on September 30, 1916, one red 2-year-old heifer with white under belly. W. L. Kauffman, County Clerk, Seneca, Kan.

Now for the International

Greatest and Best LIVE STOCK SHOW of the Year

December 2 to 9

At Union Stock Yards, Chicago

DAILY SALES OF PURE-BRED LIVE STOCK

Clydesdale Sale

Tuesday, December 5, 1:00 p. m.
For particulars write J. A. H. Johnstone, Union Stock Yards, Chicago.

50 - Selected Shorthorns - 50

Thursday, December 7, 1:00 p. m.
For catalog write F. W. Harding, Union Stock Yards, Chicago.

Sheep and Swine Sales Tuesday, Wednesday and Thursday

Many new improvements, new features. Thirty National Conventions. Dairy sales of all breeds, etc., etc., etc.

A season of learning, entertainment, brilliant evening shows and A TRIP TO CHICAGO. Lowest rates on all railroads.

50 - High-Class Angus - 50

Wednesday, December 6, 1:00 p. m.
For catalog write Chas. Gray, Union Stock Yards, Chicago.

50 - Choice Herefords - 50

Friday, December 8, 1:00 p. m.
For catalog write R. J. Kinzer, 1012 Baltimore Ave., Kansas City, Mo.

FARM AND HERD.

The Woods Bros. Silo & Manufacturing Company of Lincoln, Nebraska, has announced a consignment sale of Holsteins to be held at Lincoln, November 9. They have catalogued a choice lot of young cows, heifers and bulls selected from six herds for this sale. The offering will include some noted prize winners.

The International Live Stock Exposition to be held at Chicago, December 2 to 9, promises to be the best show held in years. Many new improvements and features have been added. Stock sales will be held during the exposition as follows: December 5, Clydesdale horses; December 6, Angus cattle; December 7, Shorthorns; December 8, Herefords. A choice lot of stock will be offered in these sales.

E. S. Engle & Son of Abilene, Kansas, have announced November 22 for their annual Holstein sale. This is their fifth annual sale and forty head of very high class cows and heifers will be catalogued for the event. There will be ten three-year-old heifers giving milk and bred for heavy producers; also ten four-year-old cows with butter records between 300 and 400 pounds annually; fifteen cows over four years old with butter records of more than 400 pounds annually. Most all the cows have been raised on the farm and have been grown in a way that they have developed into good producers.

The firm of Mott & Seaborn, well known breeders of Holstein cattle and Duroc Jersey hogs, is demonstrating in a practical way the advantage of the combination of diversified farming and stock raising on their 400-acre farm near Herington, Kansas. The Holstein herd is headed by a great bull, Canary Butter Boy King 70508. This great herd sire weighs 2,500 pounds in just breeding condition. The herd of Duroc Jersey hogs is headed by Guymon's Good E Nuff by the champion Good E Nuff Again King. This hog has proven a great sire and a feature of the herd at this time is the choice lot of boars and gilts sired by this great sire. This firm has grown these hogs in a way that insures profitable breeders. They have not been pampered, but kept growing on alfalfa and a balanced ration.

E. R. Violet & Sons of Altoona, Kansas, well known breeders of Holstein cattle, have announced November 14 as the date of their Holstein sale. On that date they will sell forty head of registered and high grade Holsteins, including some registered cows that are heavy producers and backed by A. R. O. records. They will also sell a number of registered bulls sired by Johanna Segis Beauty Barbetta 100161. This is one of the good bulls now in service. He was sired by Flint Prilly Segis 59430 by Old King Segis, sire of 87 A. R. O. daughters and 80 proven sons. A very fine lot of high grade cows and heifers will also be included in their offering.

Joseph Morin of Orleans, Neb., owner of one of the best herds of Improved Chester White hogs in that state, writes that his herd is doing well. His herd is headed by Leader Lad 3204, a boar with great size and show quality and a fine breeder. Mr. Morin grows his hogs mostly on alfalfa and feeds just enough grain ration to keep them in good condition. A feature of his herd at this time is the choice lot of young stock, including some outstanding herd material.

G. P. Andrews of Dansville, Michigan, owner of one of the leading herds of O. I. C. hogs in that state, writes that his herd is doing fine and that his young stock is growing out well. Mr. Andrews breeds the big, smooth, easy feeding kind and has found them very profitable. He also owns a very high class flock of pure-bred Shropshire sheep.

L. C. Walbridge of Russell, Kansas, is one of the live workers in this state for im-



New separator price, \$17.95

That's our record breaking achievement on our new No. 10 Economy King table model. Clamps on a table and skims 65 quarts per hour. See page 1478 in our big General Catalog.

Sears, Roebuck and Co., Chicago.

proved stock on every farm. His specialty is pure-bred Poland China hogs and he owns one of the good herds of that breed and has found them money makers on his farm.

Walter B. Brown's Poland China sale held on Monday, October 16, at Perry, Kansas, was a great success. Thirty-nine head, mostly spring pigs, sold for an average of \$35. The offering was a very even lot and was presented in the most attractive sale condition. A number of breeders were present. Nothing sold high, but the returns for the entire offering were very satisfactory.

Carl F. Smith of Cleburne, Kansas, is one of the successful breeders of the old original Spotted Polands. He has a very fine herd of sows of that popular farmer's hog, headed by Spotted Jumbo 3021, a very fine individual and a good breeder. Recently Mr. Smith added a number of choice sows from leading herds in Indiana and Ohio to his herd. This year he raised a very fine lot of spring pigs and now reports a choice lot of fall youngsters.

SHEEP

SHEEP FOR SALE—SHROPSHIRE, pure-bred and grade ewes and rams. J. E. Regier, Whitewater, Kansas.

HONEY.

HONEY—TWO 5-GALLON CANS COMB, \$12. Two cans extracted, fine flavored, \$10. A. S. Parson, Rocky Ford, Colo.

PURE HONEY—TWO 60-POUND CANS, \$9.50, f. o. b. Las Animas, Colorado. W. P. Morley.

BULK COMB HONEY, \$11.50 FOR TWO 58-pound cans. Single cans, \$6. R. A. Hopper, Rocky Ford, Colo.

NEW, PURE, STRAINED CLOVER AND alfalfa honey. 120 pounds f. o. b. Kane, \$9.60. Special rates on larger quantities. J. H. Tilley, Kane, Wyo.

Real Estate For Sale

FOR EXCHANGE

Smooth section of land in Greeley County, Kansas, clear of encumbrance. What have you? W. C. BRYANT - ELK CITY, KANSAS

DAIRY FARM

Forty Acres, one mile out; all alfalfa land, large buildings. A bargain if sold soon. Write for list of farms and ranches. T. B. GODSEY - EMPORIA, KANSAS

BEAUTIFUL SHAWNEE COUNTY, KANSAS

160-acre farm near Topeka, only \$60. Easy terms. Can fit you out in any size farm desired. J. E. THOMPSON (The Farmer Land Man), Tecumseh, Kansas.

FOR SALE

130 Acres on state road, one mile from Weedsport; three railways, trolley, creamery, alfalfa land, running water, large barns, silo, ten-room house, furnace, city water in house and barns, stock and tools. ELMER S. FAATZ - WEEDSPORT, N. Y.

100 ACRES, 1/2 mile from station and store; 65-acre cultivation orchard, 5 acres in timber, 5 acres in alfalfa, balance native pasture; 4-room house, barn with loft, double granary, hen house, telephone and rural route, 4 miles from Osage City. Price, \$45 per acre. RENSTROM'S AGENCY, Osage City, Kansas

855 ACRES fine stock and grain farm, 20 acres timber, 90 acres tame grass, 130 acres cultivation, remainder native pasture or meadow; 6-room house, good barn, double corn crib, stock scales, close to school and town, splendid neighborhood. Owner wants to exchange for cheap land or smaller farm. Write for full description. MANSFIELD LAND CO., Ottawa, Kansas.

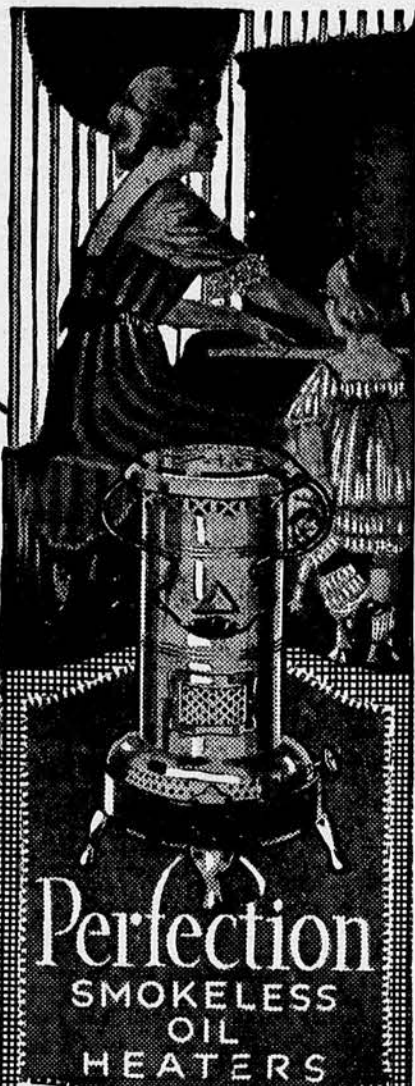
160 ACRES, 8 miles McAlester, city 15,000. 110 a. bottom land in cultivation. Fair imp. 60 a. corn this year made 35 bu. per a. Price, \$32 per acre. Terms. SOUTHERN REALTY CO., McAlester, Okla.

POOR MAN'S CHANCE—\$5.00 Down, \$5.00 Monthly buys 40 acres productive land; some timber, near town. Price, \$200.00. \$10.00 monthly buys 80 acres. BOX 425-M - CARTHAGE, MISSOURI

STOCK RANCH FOR SALE

600 Acres, 180 acres cultivated, 60 acres alfalfa, well watered, good grass, well improved, well located. Good terms. Price, \$35,000. Will take smaller farm in exchange. Address

Bardwell & Bardwell, Manhattan, Kansas.



Perfection SMOKELESS OIL HEATERS

NEVER smoke—a patented lock flame-spreader automatically prevents the flame from creeping up.

There is no odor—the drum of this heater acts the same as the “Long Blue Chimney”—no dust, no ashes.

Regulator on top of drum sends heat straight up or outward into the room as desired.

Window in front makes it easy to see and regulate flame—no easy-to-break mica in window but substantial fine brass gauze.

The Perfection Smokeless Oil Heater is simple to re-wick; besides a wick with reasonable care lasts a season.

Holds one gallon of kerosene. Indicator shows how much is in the reservoir.

Any good kerosene will give satisfaction, but for best results use Perfection Oil.

Perfection Smokeless Heater is 25 inches high and 12 inches in diameter, finished in polished steel or blue enamel, with trimmings of black Japan or nickel.

Price varies from \$4.00 to \$7.25, according to finish. Look for the triangle trade mark.

Sold by all reliable dealers.

Rayo Lamps give that soft, mellow light which enables you to read without eye strain. Get one.

Standard Oil Company
(Indiana)

72 W. Adams St. Chicago, U.S.A.

PINE LUMBER

Complete house and barn patterns, shipped direct to you from mill, at big money-saving prices. Send me your list for estimate and I will make you very low prices. Address

JAMES MURDOCK, Heavener, Okla.

PLEASE MENTION KANSAS FARMER WHEN WRITING TO ADVERTISERS



We desire to make this department just as helpful as possible, and believing that an exchange of experiences will add to its value, we hereby extend an invitation to our readers to use it in passing on to others experiences or suggestions by which you have profited. Any questions submitted will receive our careful attention and if we are unable to make satisfactory answer, we will endeavor to direct inquirer to reliable source of help. Address Editor of Home Department, Kansas Farmer, Topeka, Kansas.

Let me but do my work from day to day,
In the field or forest, at the desk or loom,
In roaring market-place or tranquil room.
Let me but feel it in my heart to say
When vagrant wishes beckon me astray,
This is my work, my blessing, not my doom,
Of all who live I am the one by whom
This work can best be done in the right way.

Then shall I feel it not too small or great
To suit my spirit and to prove my powers;
Then shall I, cheerful, greet the laboring hours,
And cheerful, turn again when the long shadows fall
At eventide, to play and love and rest,
Because I know for me my work is best.
—Henry Van Dyke.

“Count that day lost, whose low descending sun views from thy hand no worthy action done.”

Do not throw away the hot water bag when it has sprung a leak. Try filling it with clean, hot sand, and using it as before.

An easy way to make the dish towels wear longer is to work buttonholes in two corners by which to hang them. If coarse thread is used this will require little time and the use of the buttonholes will save the corners of the towels.

Respect Due Teacher

The child who continually hears criticism of his teacher at home does not respect that teacher and her influence with him is greatly weakened. Under such circumstances the child will not do his best in school and will not progress as he should.

Co-operation with the teacher and words of commendation regarding her in the hearing of pupils, will contribute to her success as a teacher, but undue criticism in the presence of children may do them more harm than the teacher, for it may result in their discounting the value of knowledge and education.

If there is a legitimate reason for complaint, there is a better way to handle it.

Leadership

In the autobiography of a man who won distinction as a leader of men is an anecdote that tells how he first recognized and put into practice the principle of leadership. He was the youngest of a number of boys who used to gather and roost upon a fence while they talked over their plans. After a time he observed that whenever a boy got down from the fence with an air of decision, and said, “Come on, fellows,” the others invariably obeyed. He determined to make an experiment. One day, when he and his companions were assembled on the fence as usual, he slipped down, and said, “Come along, fellows,” and without any dissent, quite as a matter of course, the others followed.

The first principle of leadership, as that boy discovered, is to overcome your own natural inertia, and not to wait for some one else to drive you out of it. The man who successfully and consistently overcomes his own inertia is usually able to rouse other people out of theirs.—Youth's Companion.

New Neighbors

Are you a “new neighbor” passing through that period of homesickness and loneliness so often experienced in the community where everyone is so busy with his own affairs that he has no time to make the new-comer feel welcome? If so, there is little you can do to break the monotony except to attend such public gatherings as may be held and where you need not wait for a personal welcome.

If you are one of the neighborhood, have you ever thought how lonely your new neighbor must be, away from relatives and friends, save her own family? She, too may be so busy with her daily duties that she has little time to spend otherwise, but a few friendly visits for the purpose of letting her know she is welcomed by her neighbors, will brighten her horizon and change the tone of her letters to the home folks.

Most of us are glad to be of help to those about us when we know they are in need of our help, but we miss a golden

opportunity because we have not made the acquaintance of our new neighbor and she does not feel free to call us in time of sickness or trouble.

True neighborliness is a virtue, and does more good than we ever know.

Purifying Cistern Water

The disagreeable odor of cistern water can be changed by the use of bleaching powder or calcium hypochlorite in the following manner prescribed by Prof. P. J. Newman of the chemistry department at the Kansas Agricultural College:

“One-third to one-fourth of a pound is sufficient to treat fifty to one hundred barrels of water. The powder as it comes from the store is placed in a pail or any convenient receptacle which is then filled with water. The mixture is stirred for a few minutes until no more of the powder will dissolve, and is allowed to settle. The mixture is then poured into the cistern.

“Some of the powder will remain undissolved in the bottom of the pail. Pour in more water and repeat the process as many times as may be necessary to dissolve all the powder. Where possible it is preferable to agitate the water in the cistern while the bleaching mixture is being poured in. When used in the proportion indicated the powder is not in sufficient quantity to make the water unfit for use, nor is it dangerous in any way. It acts simply as a deodorizer and a germicide.

“The rain water as it comes from the roof is laden with micro-organisms, which under the right temperature conditions, grow and multiply. When summer rains are allowed to run into the cistern this ideal temperature is soon reached and the development of these organisms proceeds rapidly. The unpleasant odor is due mainly to the life processes and decay of the bacteria.”

Calcium hypochlorite costs twenty to thirty cents a pound and can be purchased at any drug store.

Who Is at Fault?

When the child loses interest in his school work, it is a sign that some older person has failed in his duty to help the child see the necessity for training his mind that it may be of the most value to him in after years. It is hard for the child to understand the relation of this training to happiness and success, but with the right leadership the school days themselves can be made happy ones and the development of the mind and thirst for knowledge will be the natural consequence.

Far easier is it to keep up the child's interest in school, day by day, than to regain it when once lost. There are few children who are not very enthusiastic when once they start to school. They are eager to get at their studies each morning and delight in telling the other members of the family of the daily happenings in the schoolroom. Nothing escapes their notice and little is omitted in the nightly review. Many of these experiences will be of little real interest to the older ones, but a noticeable lack of interest on their part may cool the child's ardor in his school work. The report will be more easily tolerated if we will try to realize what it means to the child to learn a new word, a new



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This tour is especially for rural folks and others interested. We want you to see these sections of the Santa Fe Southwest and talk to those who live there about the greater production per acre, the balmy, healthful climate, the year-round growing season. You will visit many communities in Salt River Valley, Southern California and San Joaquin Valley. You will be taken on auto trips to see their farms, orchards and homes. We have no land to sell. We want you to see and know for yourself.

Let us tell you at what reasonable cost this trip will be made. Our party will live on special cars most of the time, thus saving hotel bills. Go with us on the Santa Fe and return Santa Fe or any direct route.

This party will leave Chicago November 9, reach San Francisco about November 25, and return from there at your pleasure within nine months, which enables you to spend the winter in California, if desired. You'll see rural California—as you could see it in no other way. You'll see the San Diego Exposition. Also you'll see the Grand Canyon of Arizona.

Ask any of your neighbors who went on last year's Santa Fe Farmers' Special about the good time they had.

Make reservations promptly, to insure getting space on this train. Write me to-day for itinerary and rates.

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multiplication table, or that there is an entirely different kind of people living on a part of the earth he has never before heard about. This is best done by recalling our own school days and our own estimation of these facts at that time. This bit of retrospection will help us to understand why the child expects us to share his enthusiasm over the daily happenings in the schoolroom.

Too often more is expected of the teacher than he can possibly accomplish. He can for a time keep the pupil interested during school hours, but if the teacher's effort is not supplemented at home, or is spoken of lightly, it will not be long before the home influence will over-balance that of the teacher.

Our burden at this time over the lack of interest in education is the result of a talk with a boy who has finished the common school and who has no desire to go further. His statement to the effect that he has had all the school he wants, raises the question in our mind—who was at fault?

Handling Bulbs Over Winter

After the first frost bulbs of the dahlia, canna, gladiolus, tube rose, elephant ear and Madeira vine should be taken up and stored. When the foliage of the dahlia or canna is frost bitten, cut off the upper part and leave about six or eight inches of the stem attached

to the roots. Aim to remove the roots as a clump and with dirt attached. This is the time the root should be tagged if color or varieties are to be remembered. The best time to dig is in the morning. Then the roots will be spread out in the sun and exposed to the wind so that they will dry well and cure. Be sure that the dirt attached to the bulbs is thoroughly dried before storing in a cool dry cellar. They keep best when spread out on the floor in one corner and buried in sand. The cellar should be cool and the ventilation good.

Bread Cake.

- 1 cupful sugar
- 1 tablespoonful butter
- 1 egg, well beaten
- 2 cupfuls bread sponge
- 1 teaspoonful cloves
- 1 teaspoonful cinnamon
- 1 teaspoonful allspice
- 1/2 cupful raisins
- 1/2 cupful currants
- 1/2 teaspoonful soda

Add flour enough to make it about as stiff as fruit cake. Let rise, and bake well.

Plain Cookies

- 1 cupful butter
- 2 cupfuls sugar
- 1 small cupful sweet milk
- 1/2 nutmeg, grated
- 1 teaspoonful vanilla
- 5 cupfuls flour
- 2 teaspoonfuls baking powder, sifted with flour

Roll thin as pie crust and sprinkle tops with sugar.

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 1 cent; 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. 7992—Ladies' Shirtwaist: Cut in sizes 36 to 42 inches bust measure. The combination idea alone, emphasizing of the plain lines of this blouse, stamps it very much of this season. The back extends a bit over the front shoulders to effect a yoke and here the fronts are gathered. The open neck is graced with a handsome collar. No. 7982—Boys' Russian Suit: Cut in sizes 2, 4 and 6 years. A wave of welcome always reaches the Russian suit made in fabric combination, like this one in the picture. The blouse with coat closing is belted at a lowered waistline with contrasting goods and neatly collared and cuffed to correspond. The straight trousers are of regulation cut. No. 7975—Ladies' Shirtwaist: Cut in sizes 34 to 44 inches bust measure. A new waist that leaves nothing to be desired in the way of smartness or comfort, is shown in the illustration. It is made with a vest front, has a deep, square collar in contrasting color and with fringe following its edge; the sleeve is gathered into a point cuff that corresponds. No. 7970—Ladies' Apron: Cut in sizes 36 to 44 inches bust measure. The body and skirt sections of this apron are joined to a straight belt of the banding in contrasting color that defines a pretty V-shaped neck, finishes the sleeve edge and trims the pocket. There is ample fullness all over and the closing is at the back. No. 7968—Girls' Dress: Cut in sizes 6, 8, 10 and 12 years. A very pretty school frock on charmingly simple plaited skirt very effectively. The collar and short or long sleeve cuff, in contrasting fabric and color, show high style note. No. 7969—Ladies' House Dress: Cut in sizes 36 to 46 inches bust measure. The simplicity and neatness of this dress are very striking. Style note is brought in with the diagonal closing of the blouse—left or right side may be chosen for fastening. The four-gored skirt boasting of a pocket and closing at side front, is joined to the belt made of material in the collar.

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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.

CHOICE HOLSTEIN BULLS

Registered bull calves out of A. R. O. cows. Also a few heifers. Best breeding. Choice individuals. Price reasonable.

BEN SCHNEIDER, NORTONVILLE, KAN.

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 earliest lots.

J. C. ROBISON, TOWANDA, KANSAS

GOLDEN BELT HOLSTEIN HERD

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

W. E. BENTLEY, MANHATTAN, KANSAS

HOLSTEIN CALVES

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

CLOVER VALLEY HOLSTEIN FARM

Whitewater - Wisconsin

FOUR BULLS

Two of serviceable age. Priced very reasonable. Pictures and description on application.

TREDICO FARM, Route 2, Kingman, Kan.

THE CEDAR LANE HOLSTEIN HERD

Headed by a 29.4-pound grandson of Pontiac Korndyke. Bull calves, nearly ready for service, sired by above bull, for sale at reasonable prices. Also a limited number of bred cows.

T. M. EWING, INDEPENDENCE, KANSAS

CORYDALE FARM HERD

Herd sire, Jewel Paul Butter Boy No. 94245, who's eight nearest dams average A. R. O. 25.95. Eight bull calves for sale from 3 to 9 months old.

L. F. CORY & SON - Belleville, Kansas

HOLSTEINS BACKED BY RECORDS

Registered bull calves, also a few choice heifers. All modern bred with good butter fat inheritance.

GEORGE C. PRITCHARD

Route 2 - Topeka, Kansas

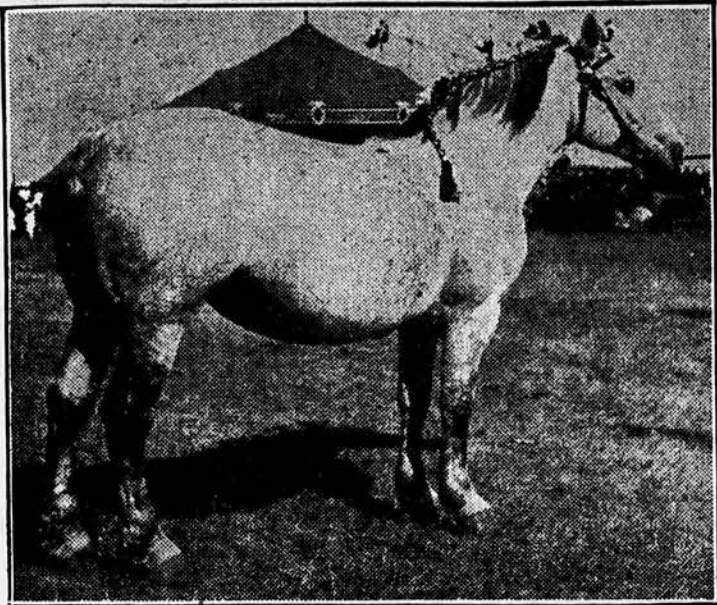
HOLSTEIN CALVES—Ten heifers and two bulls, 15-18ths pure, beautifully marked, 5 weeks old, from heavy milkers. \$20 each, crated for shipment anywhere. Write EDGEWOOD FARM, Whitewater, Wis.

BRAEBURN HOLSTEINS

Four females to spare before stabilizing time. Always A. R. O. bull calves.

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

First Annual Registered Percheron Sale



At Great Bend, Barton County, Kansas
Wednesday, Nov. 15, 1916

50-Registered Percherons-50

Sixteen mares four years old and over, all safe in foal to our herd stallion, Algarve 54595, weighing more than a ton. Eighteen mares under three years old.

EIGHT COMING THREE-YEAR-OLD STALLIONS
— EXTRA LARGE — WEIGH ALMOST A TON

Four yearling stallions and a few weanling stud colts. All that are under three years old are sired by Algarve 54595 and are real show-type Percherons. This is a clean lot and will be sold absolutely sound and all right in every way. Catalogs are ready to mail out. Send for one today. Kindly mention Kansas Farmer. Sale starts at 10:30 a. m. at the farmer feed barn.

Auctioneers: Col. Snyder, Col. Bales, Col. Keenan
THIS AD WILL NOT APPEAR AGAIN. COME TO OUR SALE.

HARRIS BROTHERS, - - - Great Bend, Kansas

E. S. ENGLE & SONS' FIFTH ANNUAL SALE of TRIED AND TESTED HIGH GRADE HOLSTEINS WEDNESDAY, NOVEMBER 22, 1916



Scene on farm of E. S. Engle, Dickinson Count.—Here Dairy Cows Have Been Money Makers.

At Farm Four and One-Half Miles West of Abilene, Kansas,
Four and One-Half Miles East of Solomon, Kansas,
on the Golden Belt

FORTY HEAD OF CHOICE COWS AND HEIFERS

Go into this sale, and consist of:

Ten 3-year-old heifers in milk with first calves.
Ten 4-year-old cows with butter records between 300
and 400 pounds annually.
Fifteen cows with an annual production of more than
400 pounds

And also a number of 2-year-old heifers bred to freshen in a few months. This stock tuberculin tested. They are healthy and vigorous and every cow has dropped a living calf at last freshening date. Not a blemished quarter in the entire offering.

This is a choice selection from our two herds, including 170 females, over 50 per cent of which we raised ourselves. This stock will make a creditable addition to any man's dairy herd or a splendid opportunity to get foundation stock.

Catalogs on Application **E. S. ENGLE & SONS**

Auctioneers—J. T. McCollough, J. G. Engle, E. L. Huffman

VIOLETT'S HOLSTEIN SALE

At Farm, Six Miles East of Fredonia, Kansas
TUESDAY, NOVEMBER 14, 1916

Forty Head of Registered and High Grade Holsteins, registered cows with high records and backed by good A. R. O. records. Six Head of Registered Bulls, sired by Johanna Segis Beauty Barbetta 100161 by Flint Prilly Segis 59430, sire of eight A. R. O. daughters and one proven son, sired by Old King Segis 36168, sire of 37 A. R. O. daughters and 80 proven sons. The high grades consist of some fresh cows; others milking and bred; bred heifers; heavy springers, heifer calves and bull calves. All young. The cows are persistent milkers and right in every way. All guaranteed as represented or your money back. Transportation from Fredonia or Altoona on morning of sale.

E. R. VIOLETT & SONS

HORSES AND MULES.



DEIERLING STOCK FARMS

Have fifteen large, heavy boned, black, registered jacks, 15 to 16 hands high, good heads and ears, good style, good breeders. I have a number of jacks sired by the champion, Pride of Missouri, also several other good herd prospects. In my 1914 sale I sold the champion of Kansas State Fair, 1915, Eastern Lightning, also Demonstrator, first prize aged jack Missouri State Fair. Reference, People's Bank. Written guarantee with each animal. Have a number of Percheron stallions for sale, also saddle stallions. Barn in town. Wabash Railroad. **WM. DEIERLING, QUEEN CITY, MISSOURI.**

PIONEER STUD FARM

Established 1870

FIFTY REGISTERED STALLIONS AND MARES

If you are in the market for a good Percheron stallion or mare, now is the time. We can show you more bone, size, action and conformation than you will see elsewhere. Write or come today.

C. W. LAMER & SON

SALINA, KANSAS

OHIO IMPROVED CHESTERS

O. I. C. PIGS

For sale, 65 head March pigs, either sex. Two fall yearling boars, sired by Wilcox's White Giant. Prices reasonable. Write today. **DAN WILCOX, CAMERON, MO.**

O. I. C. BOARS, all ages; big boned, long bodied, growthy fellows. Prices reasonable. **G. F. ANDREWS - DANVILLE, MICH.**

CHESTER WHITE HOGS



CHESTER WHITE HOGS

For Sale—Spring boars and gilts from state fair winners. **COLEMAN & CRUM Danville - Kansas**

CEDARDALE CHESTER WHITES

Extra good fall yearlings by Milligan 24457, first prize big Missouri State Fair 1912. Choice spring pigs by Milligan, Wonder Chief and W. P. Sweepstakes. All immune.

J. S. KENNEDY - BLOCKTON, IOWA

KANSAS HERD

Chester Whites or O. I. C's. Big, growthy spring boars and gilts. Some by Izzy O. K. Wonder.

ARTHUR MOSSE, R. 5, Leavenworth, Kan.

CHOICE CHESTER WHITE BOARS

Mature Stock at farmers' prices. **Joseph Morin - Orleans, Nebraska**

Breeders' Directory

ANGUS CATTLE.
Geo. A. Deitrich, Carbondale, Kan.
D. J. White, Clements, Kan.
SHORTHORNS.
C. H. White, Burlington, Kan.
RED POLLED CATTLE.
Mahlon Greenmiller, Pomona, Kansas.
HOLSTEINS.
C. E. Bean, Garnett, Kansas.
DORSET-HORN SHEEP.
M. C. LaTourette, Route 2, Oberlin, Kan.
JERSEY CATTLE.
J. B. Porter & Son, Mayetta, Kan.

Axtell & Potter of Newton, Kansas, are making a success with pure-bred Duroc Jerseys this year. They raised a fine lot of spring pigs by Big Wonder, a boar that is proving a good breeder. Their spring pigs are out of Tatarax dams and are a choice lot.

HORSES AND MULES.



JACKS AND JENNETS

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

PHIL WALKER, Moline, Elk County, Kansas

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

REGISTERED PERCHERONS, 39 heavy 3 and 4 yr. stallions, 68 rugged 2 yr. olds, 41 yearlings. Can spare 25 reg. mares. 24 reg. Belgian stallions. Sires and dams from France and Belgium. **FRED CHANDLER, R. 7, Chariton, Iowa Above Kansas City.**

SHEEP.



SHROPSHIRE RAMS.

Chandler's aged ram won first prize and championship at Iowa State Fair, 1916. Weight and wool always win. One hundred yearling rams and ewes for sale. **C. W. Chandler, Kellerton, Iowa**



REGISTERED SHROPSHIRE RAMS. Yearlings and two, square built, rugged, hardy bucks with weight, bone and heavy fleece. Quick shipping facilities and priced cheap. 412 head. Above Kansas City. **HOWARD CHANDLER, Chariton, Iowa**

RAMBOUILLETT SHEEP

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

HEREFORD CATTLE.

Herefords and Percherons

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

HEREFORD CATTLE

150 Head in Herd. A few cows and heifers for sale. Also a lot of farm and range bulls. Priced reasonable.

B. M. BROWN, FALL RIVER, KANSAS

WHEN WRITING ADVERTISERS, MENTION KANSAS FARMER

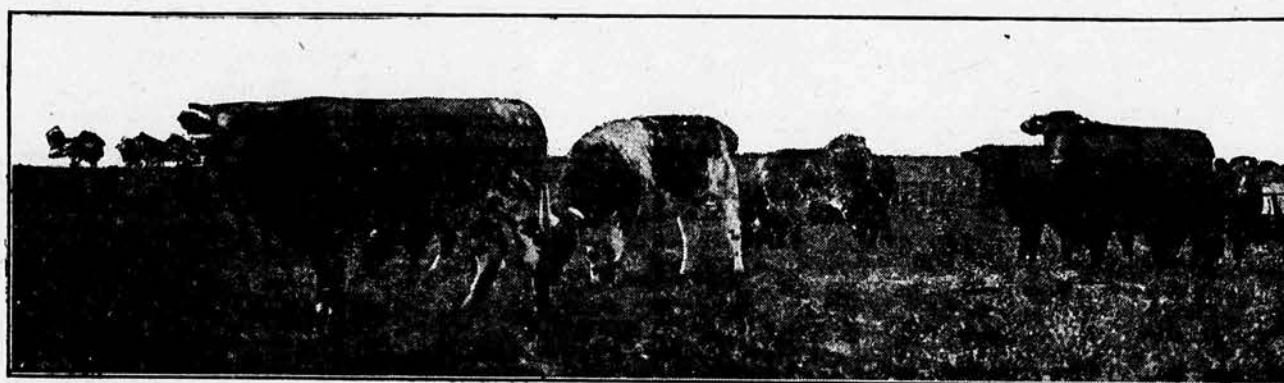
DISPERSION SALE

Extraordinary Shorthorn Offering

of Pure Scotch and Scotch-Topped Cattle at

Walnut Valley Stock Farm

Winfield, Kansas, Friday, November 10



Group of Good Beef Type Shorthorns

34 - Bulls, Cows, Heifers and Calves - 34

7 YOUNG BULLS including the Two Herd Bulls Avondale 2nd and White Rose Sultan

About half of these cattle are pure Scotch and represent the greatest sires and best families of the breed. Included are show prospects, both bulls and females.

We purchased for our foundation herd what we believe was the best both in conformation and breeding, including such families as the Victoria's, Violet's, Butterfly's, Lovely's and others of equal notes. Included will be—

VICTORIA BELLE by Club Member and out of 6th Elderlawn Victoria by Archer, with two of her get, one a coming two-year-old heifer by Pleasant Gloster and her last spring bull calf by Avondale 2nd.

LOVELY 16TH by Pride of Riverside and out of Lovely 2nd by Iowa Victor, with a two-year-old daughter by Pleasant Gloster, and in calf to White Rose Sultan by Rosewood Dale, and a January bull calf by Avondale 2nd, an outstanding show prospect.

MAUD MULLER by Golden Alpine and out of Roan Ruby, granddaughter of Imperial Ruby Lass, with a beautiful yearling daughter by Pleasant Gloster, with a show prospect bull calf at foot by Avondale 2nd.

BUTTERFLY QUEEN by Club Member and out of Butterfly Lassie 2nd by Proud Orion. This cow is a wonderful breeding cow, is the mother of one of our herd bulls, Avondale 2nd by Lavender Lord by Avondale. She has a yearling daughter by Pleasant Gloster in this sale that is eligible to go to the big shows.

LORD'S VIOLET 2ND by Lavender Lord by Avondale and out of Violet Leaf 6th, tracing to Imported Violet Bud by Barmpton. She has a senior bull calf in this sale by a grandson of Diamond Goods, also a calf at foot by Avondale 2nd and rebred to White Rose Sultan by a son of Avondale that sold for \$2,000.00.

Those who wish the best in Shorthorns will not be disappointed in these cattle. They merit good homes. Sale under cover, rain or shine, and your comfort provided for at farm adjoining the city. Write today for catalog. Address

D. O. WILSON, Winfield, Kansas

Auctioneers: R. L. Harriman and Ed Heriff.

NOTE: FIFTY HIGH GRADE SHORTHORN COWS AND HEIFERS ALSO SELL

(This ad APPEARS THIS ISSUE ONLY.)