

KANSAS FARMER

For the improvement

of the Farm and Home

Volume 54, Number 18.

TOPEKA, KANSAS, APRIL 29, 1916.

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NINETY-TWO banks are now co-operating with Kansas Farmer in conducting the Kansas Farmer Dairy Club.

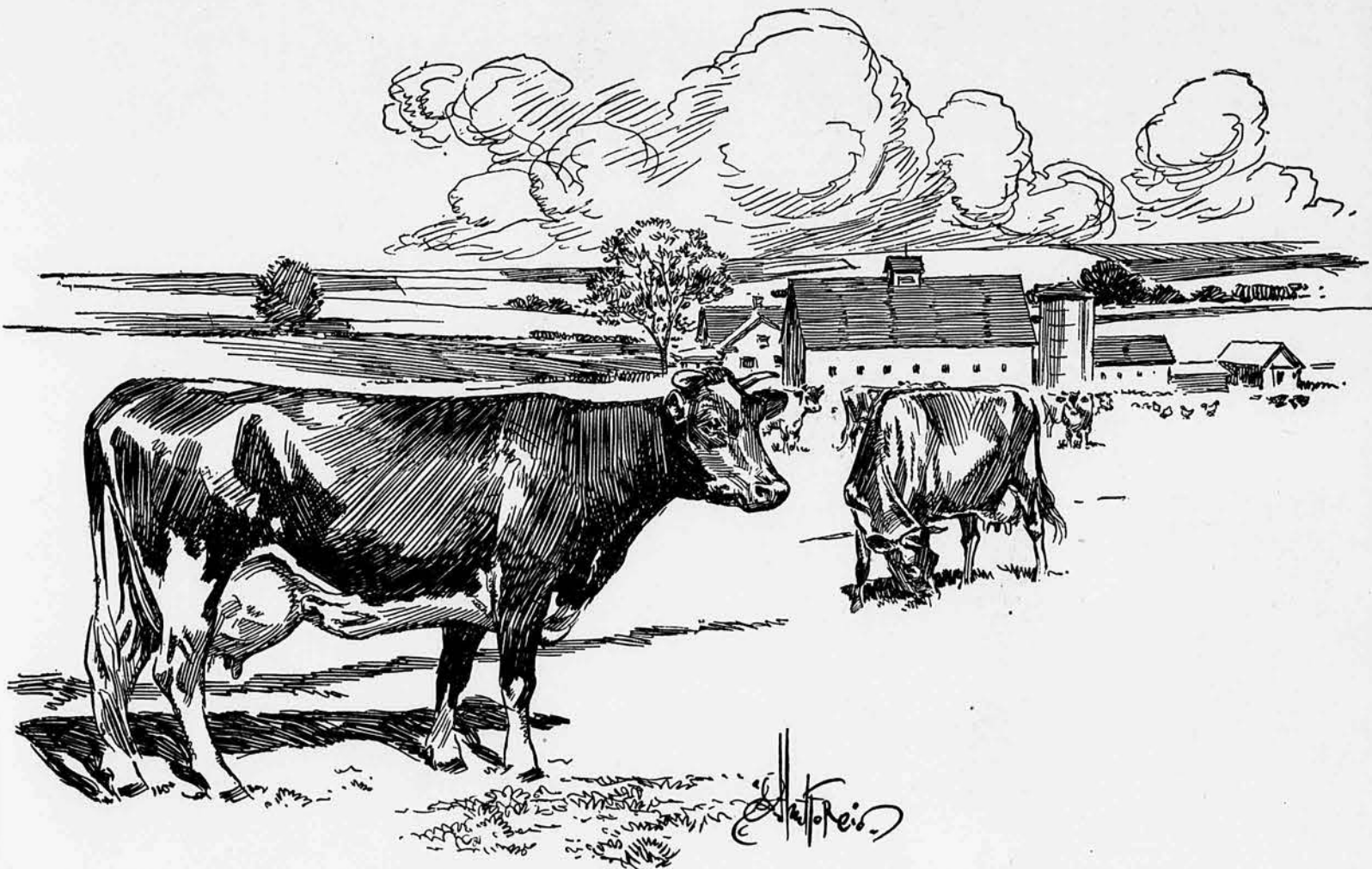
It takes capital to own even a single cow, but capital wisely invested will not only pay interest on the investment but a profit as well. A grade cow in a Central Kansas herd produced in one year butter fat that sold for \$225. The average annual net profit from 150 cows of the Dickinson County Cow Testing Association was \$54.89. These are by no means unusual results.

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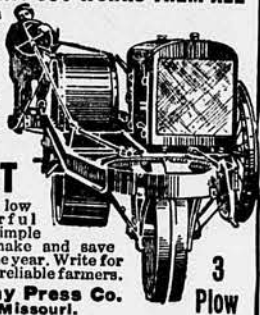


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Motor—can be used
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FARM POWER

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

PROBABLY no other farm gas en-
gine has ever been at such a pre-
mium as the binder engine during
the harvest of 1915. An engine to be
adaptable for use on the binder has to
fill several requirements which do not
hinder its use for other farm purposes.
These requirements, however, do make
it impracticable for the ordinary farm
engines to be used on the binder.

In the first place it has to be light
weight. This fact is very important be-
cause the greatest demand for the binder
engine is when the ground is so soft that
the binder wheel does not have sufficient
traction, therefore a heavy engine would
be out of the question by its causing
unnecessary draught in the soft ground.
In the second place, although the engine
does not necessarily have to be mounted
right on the binder, it is usual to attach
the engine rigidly to the rear end of
the binder main frame. This necessi-
tates both a small engine and a light
engine, for if the engine were too large
it would be difficult to attach to the
frame and if it is heavy it makes it
very difficult to tip the front end of the
binder down as different conditions of
grain in the same field very often de-
mand. In this connection the cooling
system plays an important part. If
the engine has a screen cooling system
the screen tank can be placed on the
front end of the binder, while if a hop-
per cooled engine is used, naturally the
cooling water is just increasing the
weight of the engine and thus making
the binder still more difficult to tip down
in front. Since hopper cooled engines
require more cooling water (because
there is poor water circulations) than
screen cooled engines, the unbalanced
load is still greater.

In the past the binder engine has, to
a large extent, been demanded by the
farmer only during wet seasons, and in
the dry seasons the horses have been
allowed to sweat pulling the heavy load
which should be handled with an engine.
When a binder on dry ground is a fair
load for four horses, it is reasonable to
use an engine and have only two horses
hitched to the binder or in wet ground
when it would be a heavy load for five
horses, by using the engine four horses
make light work of pulling the binder.
Naturally an engine that could be
used only on the binder would be an
uneconomic investment. A portable en-
gine, on the other hand, is admirably
fitted to do many of the odd jobs around
the farm. Since the binder engine can
be easily taken off the binder and
mounted on skids or trucks, it is more
convenient for such jobs as pumping,
running feed grinder, washing machine,
electric light plant, etc., than if a sta-
tionary engine were used for only one
of these various jobs.

It might be questioned by some as to
the advisability of using an engine that
is powerful enough to run the binder,
on the other jobs that do not take so
much power. In many cases this is no
objection whatever, but rather an ad-
vantage, since practically all farm en-
gines are more economical of fuel when
running at from one-half to two-thirds
of their full load.

The problems of making a gas engine
investment pay, just like any other in-
vestment, is to get just as many divi-
dends as possible on that investment
and the more work that the gas engine

can do the more dividends it is then
earning for the investor.—E. M. MER-
VINE, in Iowa Agriculturalist.

Farm Transportation

Thirty years ago local transportation
or rapid transit, as it was called, was
the one great problem presented to the
larger cities for solution. It was before
the day of electricity as a motive power.
The old horse car was too slow, the cable
was too expensive, and the dummy en-
gine was not satisfactory. The trolley
car solved the problem.

Today the rural communities are
facing a similar problem. It may be
summed up in "good roads and farm
transportation." The automobile has
done for the farmer what the trolley car
did for the suburbanite, but the auto-
mobile is comparatively useless unless
the country roads are given attention.
And right here let us observe that there
is little needed in this western country
to make good roads but sane engineer-
ing and good drainage. A road laid out
in such a way that it can be thoroughly
drained will always be sound. What is
needed is intelligent engineering in lay-
ing out the roads so that they will fol-
low the topography of the country and
not section lines. The road that goes
around a hill is no longer than if it had
gone over it. To build a road through
a swamp when a detour of a few rods
would give a sound foundation and a
better grade is the height of idiocy.

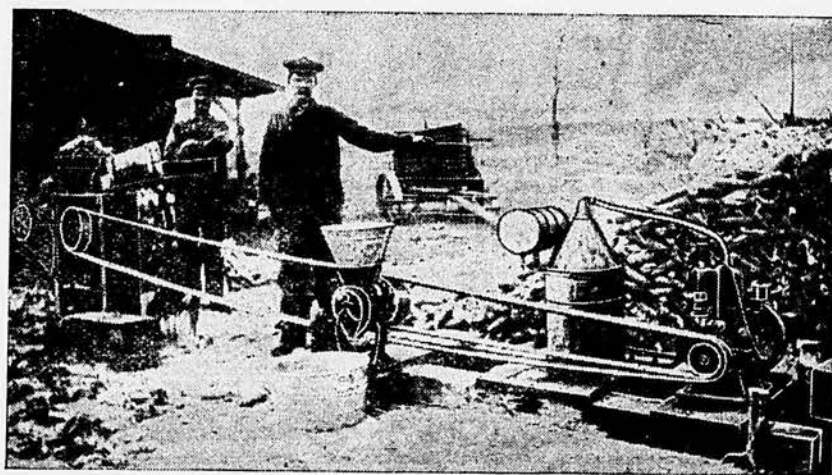
And then too, no work should be done
on a road except in accord with exact
engineering directions—the primal ob-
ject being drainage. What is wanted is
common sense and engineering data.—
Campbell's Scientific Farmer.

New Sources of Oil

From Washington comes the encour-
aging news of a report recently made
public by the United States Geological
Survey that an almost inexhaustible sup-
ply of oil may be obtained from the
shale of northwestern Colorado, north-
eastern Utah and southwestern Wyom-
ing. The high cost of distilling oil from
shale as compared to the cost of pro-
ducing oil from wells has, up to the
present time, retarded development of
these shale fields into oil producers.
Moreover, scant attention has heretofore
been paid to the question of oil distilla-
tion from shale because the quantity of
petroleum produced from wells in the
United States has been sufficient to
meet demands. It is said that for more
than fifty years the oil shale industry
has been an important one in Scotland,
employing thousands of men. The aver-
age yield of oil from the Scottish shale
is far below that possible from the shale
of Colorado, Utah and Wyoming.

Secretary of the Interior Lane, in a
recent reply to a Senate resolution on
the subject of gasoline, reported as fol-
lows:

"The development of the enormous
reserve simply awaits the time when the
price of gasoline or the demand for other
distillation products warrants the utili-
zation of this substitute source. At all
events these shales are likely to be
drawn upon long before the exhaustion
of the petroleum fields."



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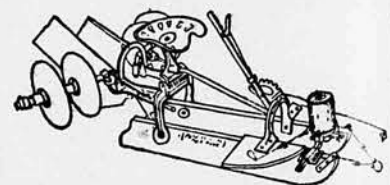
Tires	Size	Price	Tires	Size	Price
32x34	in.	\$8.00	32x34	in.	\$17.45
32x34	in.	\$8.00	32x34	in.	\$17.45
32x34	in.	\$8.00	32x34	in.	\$17.45
32x34	in.	\$8.00	32x34	in.	\$17.45
32x34	in.	\$8.00	32x34	in.	\$17.45

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KANSAS FARMER

The Standard Farm Paper of Kansas

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2 MAY 16

PREPARING CORN FOR PLANTER.

Securing a good stand is an important factor in growing corn. In addition to using seed that we know will grow, and planting it in a well prepared seed bed, it is important to select the proper planter plate and have the seed well graded. Unless this is done it will be planted unevenly and a poor stand will result. The only way to be sure that the right plate is used is to put some corn in the planter box, block up one of the wheels so that it can be turned by hand, and see how the corn is dropped. Changes in plates can be made until the right one is found. Even where this is done it is difficult to get the best result if the kernels are of different sizes and shapes. With the edge-drop plate it is more important to have the corn carefully graded than with the round-hole plate. These plates, however, will drop more accurately if the seed is properly graded.

Shelling and discarding the butts and tips removes the small and irregular kernels. If the ears have been selected according to some definite standard, little further grading will be needed.

We recently visited a farmer who was preparing his seed at odd times, and found he was getting about three bushels of seed from four bushels of ears. Each ear was being inspected as the butts and tips were removed. The ears were so uniform in size and number of rows that the shelled corn needed no grading. An edge-drop plate of the proper size of cells will plant it in such manner as to give an almost perfect stand. Corn less carefully selected can be very easily graded by the use of corn graders—some of the simpler ones costing not more than two or three dollars.

Some may think that so much fussing over seed corn is a waste of time, but a bushel of corn will plant about eight acres, and a 40-bushel yield would mean 320 bushels of corn from one bushel of seed. The securing of a poor stand might easily reduce this yield very materially. The farmer referred to above, said he would willingly pay five dollars a bushel for seed such as he was preparing for planting rather than use ordinary corn from the crib.

SUDAN FOR WASTE PLACES

Sudan grass is being recommended for planting in patches where crab grass or foxtail has taken alfalfa. Every alfalfa field has such spots and there is hardly a farm on which there is not some waste place that would be better producing some useful crop than allowed to go to weeds. Quite often around the edges of an alfalfa field the alfalfa has been killed out. If such places cannot be successfully reseeded, they can at least be made to produce some good hay by discing them and sowing Sudan.

Sudan will stand cutting as often as will the alfalfa and will take the ground so thoroughly that crab grass and other weeds will have little chance. The hay is relished by stock and where it is not to be sold on the market the alfalfa is not injured. If the crop is to be sold, it would be necessary to use a little care and stack the alfalfa containing the Sudan grass in one end of the stack. Hauled in this way the mixed hay that would not sell well on the market can be fed.

Sudan is probably better adapted to use on such spots in alfalfa fields or other waste places on the farm than any other crop that can be grown. It has been successfully used in this way by a number of farmers over the state.

LOAN FUND FOR STUDENTS.

The movement just started to create a loan fund for needy students at the Kansas Agricultural College, should receive the hearty support of every alumnus or former student as well as others interested in the cause of education.

Many a sacrifice is made to help our young people in their ambition to secure a good education. Students in our colleges and universities work at all sorts of jobs to help meet their expenses and parents pinch and save to give them a chance to better equip themselves for their life work. With all these struggles of students and parents there are many instances where for the lack of a

few dollars a boy or girl must drop out perhaps in the middle of a term. Only the heads of our educational institutions know how frequently this happens. To some the helping hand of a friend comes at the critical time, but such fund as is started puts the furnishing of the little help needed on a business basis and will be a great assistance to many worthy students.

The first step in making in this fund a reality was taken by President Waters when he turned to it the royalties coming from the sales of his book—"The Essentials of Agriculture." No systematic publicity campaign has as yet been started, but a number of voluntary contributions to the fund have been made, these amounting to over \$800.

There are no doubt many graduates and former students now in comfortable circumstances who can call to mind times in their student days when such a fund would have been a great help in getting over some hard place. An outgoing class could not leave a more enduring monument than to raise a sum of money and place it in this fund as a class memorial.

This matter has been presented to the graduates of the agricultural college and the public generally through the Kansas Industrialist. We trust that every alumnus of this institution will do his or her part in swelling this fund.

SUPPLY OF BINDER TWINE.

There has been a great deal of controversy during the past few months over the supply of sisal for the manufacture of binder twine. It has been charged that the regulatory commission of the Yucatan government is a "trust" and that it is arbitrarily fixing the price of the raw material. Counter charges have been made, and about the only thing the farmer can be sure about is that twine will be a great deal higher in price this year than last. In fact some factories are claiming that not enough twine can be made to supply the demand. The last move was the offer of the Yucatan commission to turn over to the Federal Trade Commission for distribution 125,000 bales of sisal. The acceptance of this offer has been authorized by the senate, and manufacturers are now assured enough raw material from which to make twine for handling this year's crop.

REPORT ON WHEAT.

The State Board of Agriculture in its first crop report for the season gives the condition of the wheat as 87.36, this report covering eight million ten thousand acres. On the same basis the state's wheat a year ago was rated as 92.8, and two years ago 96.5. The acreage reported by the correspondents is approximately eight and a half million, or over a million acres less than the fall before. Five per cent of this acreage will, in the opinion of the correspondents, be plowed up and devoted to other crops, this being quite evenly distributed throughout the state.

In the eastern third of the state considerable damage was done by ice and sleet, and in some seven or eight counties winter-killing was given as the cause of loss. Damage from dry weather and winds was reported in nearly every county in the western two-thirds of the state.

According to this report there is less than the usual amount of Hessian fly in the counties of the eastern third, but this pest is doing more or less damage in practically every county of the central third, this including the so-called wheat belt. The worst infestations appear in Sedgwick and Ellis Counties. The fly is reported as far west as Sheridan and Meade Counties. Owing to the late harvest and the shattering of grain, there was more than the usual amount of volunteer wheat last fall. This offered the best conditions for carrying the fly through the winter.

In two counties—Stafford and Decatur—cutworms did a noticeable amount of damage.

At the time the correspondents made this report the soil conditions throughout the state were most favorable for vigorous growth of wheat, except in

Cherokee, Labette, and Neosho Counties in the southeast, and fourteen other counties in the north central part of the state, where more surface moisture was needed. Subsoil moisture seems to be abundant, and this is favorable for the crop of the current year.

FIRE PROTECTION ON THE FARM.

"Six Thousand Dollar Farm Blaze" was a prominent heading in a Dickinson County paper last week. Four buildings were burned, two threshing machines, a corn sheller, silage cutter, other farm machinery, and a lot of hay and grain. The owner and his son were at work in the shop when the fire started in one of the other buildings, but were powerless to check the blaze. The same week we were driving in Leavenworth County and were told of a fire on a farm that destroyed every building on the place and most of the farm machinery.

These are but instances of what is happening right along in the way of fire losses on farms. The farmer is absolutely helpless when a fire starts. This has become so generally accepted that we seldom hear of any special precautions being taken to prevent fires or to put them out quickly when they start. In towns we have ordinances prescribing the type of construction. Fire extinguishers are required by law in school houses, places of amusements, hotels, and other public buildings. These are for use in quickly putting out a small blaze before the fire department can reach the place. We do not recall ever having seen such measure of precaution installed in a farm house. It would seem that nowhere would such means of protection be more in order. It is not merely a matter of property, for many times when fires occur the women and children are alone and their lives are thus endangered. More thought should by all means be given to the prevention and control of fires on the farm.

Ground squirrels and other rodents often damage corn by feeding upon the grain before or shortly after it germinates. Ground squirrels dig up the corn and the young plants. One or two squirrels will destroy all the corn on a considerable area. Crows often pull up the young plants in order to feed upon the kernel. Scattering corn, poisoned by soaking it in a solution containing strychnine, where these pests are working, is an effective way of getting rid of them. Care should be taken to prevent hogs or poultry from finding the poisoned grain.

Farm management surveys have shown that many farms are returning less than hired men's wages if the capital is credited with earning 5 per cent interest. A reorganization of the farm business is all that is necessary on many of these farms to make them profitable. This reorganization does not mean the introduction of wholly new systems of farming. Instead, this recognition would entail, in the majority of cases, merely readjustments in the present systems of management.

An acre of corn harvested by hogs will return a greater profit than an equal area harvested in the usual way. At the Missouri Experiment Station an acre of corn hogged off produced more pork than an acre of corn harvested and fed to hogs in the customary way. It is not practicable to utilize the entire corn crop in this way but it is good practice to utilize a certain portion of the crop in this way.

In your plans for accomplishing the work of the season, have you taken note of the importance of allowing some time for pleasure, especially for the young folks? "All work and no play makes Jack a dull boy," but if he feels that his recreation hours are sure to come, he will put more energy and interest in his work.

Before planting all the corn, plan for a field of kafir or other grain sorghums. This will apply over much of Kansas. Every year is not a good corn year.

FARMING IN NEW REGIONS.

Many farmers move to the western part of Kansas, Oklahoma, or Nebraska, who have little knowledge of the conditions they must meet. The experience gained in farming in Eastern Kansas, Missouri, Iowa, or Illinois, will be of little value in the new location. Entirely new conditions will be found and unexpected difficulties will arise. Seed not adapted to the new locality may be planted. The newcomer may try to grow corn where kafir or milo is the only sure grain crop. New planting dates will have to be learned. The methods of soil preparation necessary will be different. There may be the possibility of serious hail storms during certain seasons, making hail insurance necessary to protect the crops.

Successful farming can be carried on under widely differing conditions, but the methods must be adapted to the locality. The man who thoroughly understands farming in Western Kansas may expect fully as great a measure of success as the one farming in the eastern part of the state. It is always important to make a study of the amount of rainfall and the time of the year in which most of it comes. This is especially so when a move has been made to a region of lighter rainfall where the most economical use must be made of the annual precipitation in order to grow crops successfully. The length of the growing period must be given consideration. This varies in Kansas from 140 days to 190. It has been a common complaint in Northwest Kansas that the standard variety of kafir would not mature grain before frost. This has necessitated the development of a type that would mature in a shorter period of time.

Those who take up farming in new locations will, in the course of time, learn all these things through their own experience, but this experience is costly. It would be well worth while to study carefully the methods followed by those who have already been successful for a period of years.

The information that can be gained by reading modern advertisements, is valuable. None of us is independent of a certain number of market commodities, and the advertisements found in reliable papers are a true index to the best commercial products. Advertisers are at the service of the public and the dependable ones are always glad to answer inquiries and give additional information.

GRAIN SORGHUM SEED.

There is money in growing pure seed of the grain sorghums for market. Carelessness has long characterized the handling of the seed of these crops, but grain sorghum growers are coming to a realization of the need for better seed if they are to get the most from these crops. They are just as susceptible to improvement through selection and careful handling as is corn, and can be much more easily kept pure since the pollen does not blow long distances as it does in the case of corn.

Those who do not care to advertise and retail the seed they produce can always find a ready market for it at wholesale rates which will be considerable in advance of regular market prices. Commercial seedsmen are always glad to get thoroughly reliable seed of the various grain sorghums. Many could with profit devote some time to the growing for seed of such varieties as are adapted to their respective localities.

FARM BUREAU PUBLICATION.

The Jewell County Farm Bureau News is the name of a monthly paper now being published by the farm bureau of that county. The purpose of this paper is to facilitate the exchange of ideas and methods that have proven successful. The farmers of Jewell County can well afford to give their hearty support and co-operation to this new activity of the farm bureau.

A manure-soaked wooden floor is very "slick." Concrete floors may be as rough or corrugated as may be desired.

GENERAL FARM INQUIRIES

Something For Every Farm—Overflow Items From Other Departments

SUBSCRIBER, B. B. H., Texas, noted our recent reference to the new publication—The Shorthorn in America—and asks where the office of the American Shorthorn Association is located, also where the Hereford Record Association has its headquarters and likewise the Poland China.

The Shorthorn Association is located at 13 Dexter Park Avenue, Chicago. The Hereford Association has its office at Kansas City, Missouri. There are at present two associations registering Poland China hogs. Some effort is being made to unite these associations. It would be a good thing for the breeder if this could be done. The Standard Poland China Association has its office at Maryville, Missouri; The American Poland China Record Association at Union Stock Yards, Chicago.

Popcorn Industry

G. F. K., Reno County, noted our editorial reference to growing popcorn and asks where the crop can be marketed commercially.

In this state, for the present at least, there is not enough popcorn grown to create a special market, but any of our seedsmen will handle it. It usually sells for a good price and anyone who grows a nice lot of popcorn can be reasonably sure of finding a market for it, although better markets probably would be assured if a considerable quantity were produced in a community. Because Iowa has had a monopoly of the popcorn business for some years, is no reason why the industry should not be developed in such parts of Kansas as are adapted to growing this crop. We would suggest that our correspondent and others interested in growing popcorn, write to some of the larger seed houses relative to disposing of their crop.

Measuring Silage

L. M. N., Butler County, writes that he bought some silage from a neighbor and no one seems to know how to estimate the quantity he has hauled out. The silo is thirteen and one-half feet in diameter and was filled with well-matured kafir. It was thirty-five feet high but settled five feet. Our correspondent hauled out 20 feet and 8 inches of this silage.

Measuring silage is like measuring hay—it is sure to vary somewhat in density, therefore no method of calculation can be taken as exact. The figures worked out by Professor King of the Wisconsin Experiment Station are generally used in calculating the capacity of silos. According to these, 20 feet and 8 inches of well-matured corn silage from the top of a silo would have a mean or average weight of 33.7 pounds a cubic foot. We have had no figures worked out for kafir silage, but where it is well seeded it probably is as heavy as corn silage, and in estimating the amount of silage our correspondent has used, we would suggest accepting these figures for kafir silage. To determine the number of cubic feet used, square the diameter, 13.5 feet, and multiply the result by the factor .7854.—This result—143.14 square feet, multiplied by 20 feet 8 inches, gives 2958.22 cubic feet. Multiplying this by the mean weight of the silage per cubic foot—33.7 pounds—gives 99691 pounds, or 49.84 tons.

The silage that remained in the silo is of course much more solid. According to Professor King's figures, this would amount to about 34 tons.

Advantages of Listing

B. T. R., Phillips County, asks if listing is the best method of planting corn in that part of the state.

The lister was first introduced in regions of light rainfall, the theory being that by putting the corn at the bottom of the furrow the root system was developed at such depth as to defy evaporation and enable the crop to stand the dry spell when it came. The advantage of being able to get the crop in with a minimum of labor when labor was at a premium, caused the method to become popular at once. It was a short cut to getting a large acreage planted. As better methods have been worked out the tendency has been to put in considerable work on the land in advance of the lister. By doing this, moisture is conserved and it is possible to take advantage of the lister method in planting the crop where the moisture is stored.

While the saving of time cannot be overlooked, the important point is that the seed is planted at the bottom of the furrow and the furrow will catch and

hold a large per cent of the rain that falls. Leaving the land in ridges is of value because it prevents soil drifting. Disastrous results frequently follow when soil gets to blowing during the spring months.

We believe the lister is the best method for planting corn or kafir in the part of the state from which our inquiry comes. To give the best results the lister should always be preceded by the disk. The earlier this can be done, the better, but even if done just ahead of the lister it is worth doing.

The lister leaves a ridge between the furrows that is not stirred. The cultivation of the listed crop consists in working this hard ridge down into the furrow as rapidly as possible. The dry soil of this ridge will act as a mulch to hold the moisture stored in the bottom of the furrow and by the time it is all

a high degree of immunity against cholera. This is brought about by injecting into the veins of an immune hog large quantities of blood that has just been taken from a hog sick with the disease. This hog into which the blood is injected is either a natural immune or has been made immune by the administration of anti-hog cholera serum.

The immunity is brought about through the presence in the blood of what scientific men have called antibodies. They do not know exactly what they are or how they act except that their presence makes the hog immune to the disease. The injection of the large quantity of cholera blood stimulates the production of these antibodies. The immune hog has enough to protect it from the disease, but for the manufacture of serum that will protect other hogs there must be an excessive quan-

If they are not kept in the shade the hive becomes overheated and this is one of the recognized causes for swarming. Not only should the hive be kept in the shade, but if the bees are found clustering around the outside, caused by poor ventilation and too much heat within the hive, it would be well to block the hive up at the corners.

As for the proper time to put in the "top box" or super, this should be done when the combs are whitening near the top and the frames are fairly well filled with brood and honey. It is sometimes difficult to get bees to begin work in the super, especially Italian bees. This can be overcome by using shallow extracting frames in with the comb honey sections or by placing in some already started comb which will act as a bait. After bees once get accustomed to working up, they will continue to do so. When the second super is put in, the first super should be raised and the second one placed beneath it. When the third is put in, the two above should be raised and this placed beneath.

Live Stock and Soil Fertility.

The problem of the American farmer today is how to conserve the fertility of the soil and yet insure a reasonable income. In considering changing from grain farming to the raising of live stock, the farmer asks himself if this change has been successful in maintaining soil fertility. From the New England States westward to the Dakotas, he sees a trail of once depleted soils reclaimed by substituting dairying and stock farming for exclusive grain farming. The result of profitable systems of live stock farming on even the poorest of soils is to be seen in Holland. Denmark is another example of a country whose soils were becoming depleted by wheat producing but where a system of live stock production conserved the soil fertility.

Permanent success from exclusive grain farming has not yet been demonstrated, so modern farm practice is showing the importance of the development of animal husbandry. The close relation between the fertility of the soil and keeping of live stock is demonstrated at experiment stations and by the successful farmer. Productiveness of the acre of land is the main factor for which the farmer is everywhere striving. Because the productiveness of the land is maintained and often increased is sufficient reason for the keeping of animals on the farm, not even taking into consideration the increased profit from the live stock farm.

Farm manure is now, and always has been, the greatest available resource for maintaining soil fertility on the typical middle-west farms. Generally speaking the most prosperous farms of this section today are those on which live stock is a large if not a chief factor of production.

While the practice of plowing under clover and that of adding straw and stover directly to the soil will unquestionably keep up the humus or vegetable matter supply, such materials are too valuable for the nutrition of animals to be thus employed. At the Missouri Agricultural Experiment Station for two years the average income of clover pastured off with hogs amounted to \$40 per acre.

All such materials as stover, hay, straw, and grass, can be profitably marketed through animals, and at least 50 per cent of their soil-building value saved and at the same time a considerable profit secured from feeding the animals.—F. B. MUMFORD, Missouri Experiment Station.

At the conference held in Colby recently Dean Jardine discussed the "Farm Business" and "Building Up Our Crop Yields." He showed by means of charts how the business of farming can be managed so as to show what lines are profitable and what unprofitable. In particular, the small farm is not a profitable one. He then explained in detail how pure-bred varieties of grain are developed by beginning with a single head and gradually increasing till the variety is established. In such a process thousands are tried, but only very, very few are kept. "A few varieties of wheat developed at the agricultural college are nearly ready for quite general distribution," said Dean Jardine. "They give promise of yielding from two to four bushels more per acre than the best wheat now generally grown by the farmers of the state."



MODERN DAIRY BARN ON FARM OF J. C. FORD, RILEY COUNTY.
CONDITION OF FENCES AND YARDS INDICATES GOOD MANAGEMENT

leveled the plants have established a firm root system and will be able to stand more dry weather than if planted on the surface. Unless the working down of the middles is done early, roots may be cut and exposed in the cultivation. Roots do not of necessity develop entirely on a level with the bottom of the furrow. Under certain conditions they may be on a higher level between the rows unless the hard middles are cultivated before the roots have spread much.

Pumpkins for Hogs

A Pottawatomie County reader asks what kind of pumpkins to plant for hog feeding and also if squash are good for hogs and how they compare with pumpkins in yield.

The Kentucky field pumpkin is as good a variety as can be planted for this purpose. Pumpkins are very valuable for feeding hogs in the winter time, especially brood sows and pigs. They are appetizing and have a tonic effect. Of course they cannot take the place of grain. Squash are also good but are harder to grow and they have a hard shell which makes them less desirable for feeding.

Sudan Planting Time

J. W. K., Pottawatomie County, asks what is the earliest date that Sudan can be planted on low bottom land and be safe from frost.

Sudan, like others of the sorghum family, will not germinate and grow vigorously until the soil is thoroughly warm. The average date of the last killing frost in this section of the state is April 25. Frosts have occurred as late as May 20. We do not believe it would be advisable to plant Sudan earlier than the middle of May. This seems to be about the earliest date recommended by those who have had the most experience with it. Of course the date would have to be varied for different parts of the state. It would not be safe to plant it at this date in the northwestern counties.

What Is Cholera Serum

M. R., Washington County, asks for an explanation of what anti-hog cholera serum is and how it acts in preventing disease.

This serum is the thin, watery part of the blood of a hog that has acquired

tity of these anti-bodies. This hog so treated is spoken of as hyper-immune, and its blood is used in the preparation of the serum. The fibrin is removed from the blood and a small amount of preservative is added to keep it from spoiling.

Such, in brief, is hog cholera serum as it is being placed on the market. It is becoming standardized and no plant can operate without a license from the Federal Bureau of Animal Industry. A serial number and a license number appear on every bottle, and in making any reports on serum used these numbers should be supplied. This makes it possible to locate the exact source of the serum in question.

Pigs' Teeth Cause Trouble

We have been asked if it is necessary or advisable to remove the sharp teeth or tusks which young pigs have at birth.

There are two of these sharp teeth on each side and at the fore part of both upper and lower jaw. They are yellow or brown color and are very sharp. Pigs quite often get to fighting for the possession of a teat and injure the sow and each other. This is more apt to occur in large litters where the pigs are not getting as much milk as they want. If the sow is injured she is more apt to be restless and will occasionally jump up suddenly, step about and perhaps kill some of the pigs. Bad sores may develop if they become infected as is likely to occur.

All trouble can be avoided by examining pigs at birth and when these vicious teeth are found remove them with a small pair of pinchers. Some of our hog men make a practice of doing this regularly, while others do not bother to remove the sharp teeth unless it becomes apparent the pigs are causing trouble with them.

Shade for Bees

A Pottawatomie County reader asks if shade is necessary for bees in the summer and when the top box or super should be kept on the hive.

J. H. Merrill of the Kansas Agricultural College, answers this inquiry as follows: It is very essential that the bees be kept in the shade during the summer. If they cannot be placed in the shade of a tree, it is well to construct some sort of an artificial shelter.

KANSAS LEADS IN GALLOWAYS

This State Records Forty Per Cent of Galloway Registered in America

By R. W. BROWN, Secretary Galloway Breeders' Association

GALLOWAY registration in America was started in Canada in 1872 and for two years thereafter was confined to that country. The first volume of the American Galloway Herd Book was published in 1883 and contained 660 pedigrees, this being the total number recorded during the first eleven years of registration work in America. Of this number twenty-four were recorded as being owned in Kansas.

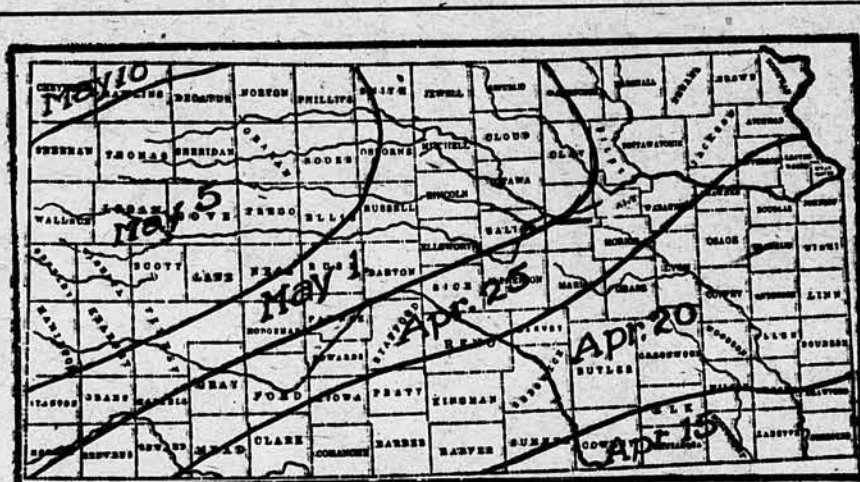
Since that time the breed has steadily gained in popularity in Kansas until today this state records 40 per cent of all the Galloways recorded in America. In this respect she leads all other states. Nebraska comes second, Missouri third and South Dakota fourth. The breed is making rapid headway in this latter state and in other states towards the Northwest, but there is no indication at the present time that Kansas will lose her lead. Galloways probably are the only beef breed that has the greatest number of its recorded animals west of the Missouri River.

The breed is pretty well distributed over Kansas but the banner counties are Ellis, Wallace, Hodgeman, Pawnee, Reno, Harvey, Harper, Butler, and Shawnee.

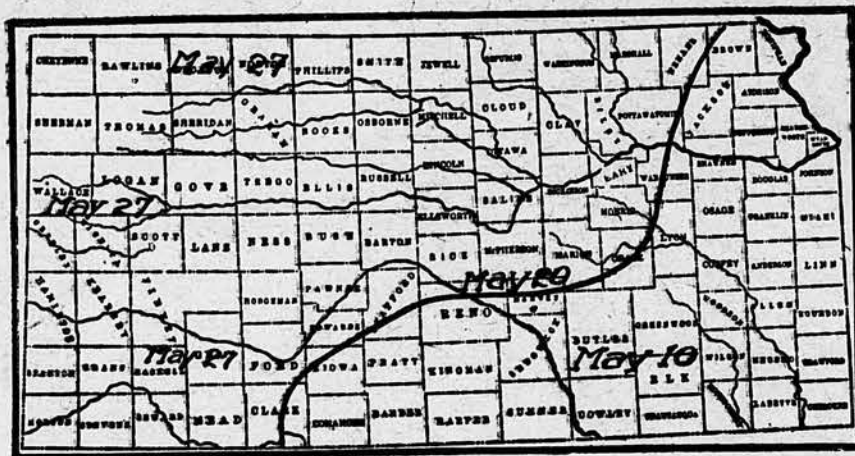
The first Galloway recorded as owned in Kansas was the bull Billy Hood 351 owned by the Kansas State Agricultural College, and the first Galloway recorded as bred in Kansas was a cow bred by the same institution. This cow was Maggie 452, out of Lassie 445, a cow purchased by the agricultural college from the Nebraska State University.

The largest herd of registered Galloways in the world is owned in Wallace County by E. J. Guilbert, who is well known to the people of the state. Mr. Guilbert has been very active in Galloway affairs, and the fact that he recently made large additions to his herd after years of experience with the breed indicates his enthusiasm for Galloway cattle and his faith in their future.

While Kansas leads all other states in the number of Galloway cattle recorded, she has not contributed as largely to our breed shows as have some other states. In this respect, however, she is beginning to take the lead, as is evidenced by the fact that at the recent Denver show nearly all the Galloway champions were Kansas bred and Kansas owned.



AVERAGE DATE OF LATEST KILLING FROST IN THE SPRING FOR VARIOUS PARTS OF KANSAS



LATEST DATE KILLING FROSTS HAVE OCCURRED IN VARIOUS PARTS OF KANSAS

In the carlot feeder classes at the American Royal, Kansas has contributed practically all the Galloways shown. During the first three years of this show when prizes were offered in inter-

breed competition, Kansas Galloways captured two of the three grand championship prizes awarded.

It may also be noted that nearly all the Galloway carloads exhibited in the

fat classes at the International originated in the short-grass section of Kansas. With but few exceptions these were prize winning exhibits, but a number of them received distinction on account of the high dressing per cent credited to their carcasses.

I have often wondered why it was that our breed of cattle increased more rapidly in popularity in Kansas than in other states. I believe this may be attributed to the fact that the breed came into prominence in this country just at the time of the beef cattle boom during the early eighties. At that time Kansas City was the chief distributing point, and naturally Kansas took a large number of the cattle offered. So great was the demand for Galloway bulls at that time that importations were regularly made from Scotland, and practically all the available bulls were taken from that country.

During these early boom days, when there were seemingly not enough bulls to go around, unscrupulous dealers and importers palmed off on the trade a great number of grade bulls as well as inferior pure-breds that in many instances brought the Galloway into bad repute. Fortunately the dishonest dealer is gradually being eliminated as our farmers learn to distinguish between the different types of animals that are put on the market.

The chief agencies in making the British farmer the best stockman in the world have been the local meetings and shows. In this country we must yet rely upon the honesty and integrity of the breeder, and happy be it for us that the honest breeder is largely in the majority.

I should like to express in a measure my appreciation of the constructive work of one of the Galloway breeders who has helped to make Western Kansas what it is. I refer to J. F. Meserve, and do so because he is one of our oldest and best known breeders in the territory served by the experiment station at Hays, and also because he is an example of the type of man that we need in this country to put the live stock industry on a firm foundation. It pleases me to hear him referred to recently as the "daddy" of his section of the country. Probably no single man has influenced so many persons to use Galloway bulls and keep on using them.

Simple Concrete Step Construction

STEPS are not only subject to hard usage, but when constructed of wood with the lower part in contact with the ground and subject to alternate wetting and drying, decay is very rapid, making them unsafe and dangerous. Steps at the rear or kitchen entrance of the house encounter especially hard usage, but it is a very easy matter to have them durable and safe by constructing them of concrete. A simple method of doing this is shown in the accompanying drawing. The three forms consist merely of that many boxes open at top and bottom and also at the end adjoining the door-sill.

A rise of 8 inches and a tread of 10 inches will be found convenient. For this reason the height of each box should be 8 inches, since every box will form a step. All of the boxes should be of the same width, but each one is 10 inches shorter than the one beneath it, thus forming the tread of the step. If the steps are few in number and not too wide, 1-inch boards will be stiff enough to hold the concrete without bulging, but if there is any doubt about this it is better to use 2-inch plank. The concrete for the steps should be mixed in the proportion of 1 bag of Portland cement to 2½ cubic feet of clean coarse sand to 4 cubic feet of crushed rock or pebbles. The earth beneath the steps should be excavated to a depth of 6 inches below the surface, the excavation being the exact size of the bottom of the steps. Make sure that the earth is level and compact at the bottom of the excavation. Place the largest box in position around the edge of the excavation, staking it in place at two or three points to prevent shifting. Level the first box very carefully by means of a carpenter's spirit level. The concrete, mixed rather dry, should be deposited in the box and thoroughly tamped and compacted until moisture rises to the surface. Work or spade the concrete thor-

oughly along the sides of the forms so as to produce a smooth surface. At the front end of the box, where the concrete becomes the tread, the surface of the concrete is carefully leveled off and smoothed with a trowel for a distance of about twelve inches from the outer edge. Immediately after this is done the second and smaller box is placed on top of the first one, being fastened thereto by a few nails through the upright cleats shown in the drawing. The nails must not be so long as to project through the forms and into the concrete. Fill the second box with concrete immediately, being careful that no dirt or other foreign matter falls or collects on the sur-

face of the first batch of concrete, as this would prevent a good bond between the two layers. Finish this step or slab in exactly the same manner as described for the first step. The last or third step is constructed in exactly the same manner as those previously described.

The brace between the two back cleats is for the purpose of preventing the boards from spreading at the side next to the wall. The outer surface of the top step is carefully leveled off with a straight-edge and finished by troweling to a smooth surface. Excessive troweling, however, must be avoided. Not more than a half hour should elapse between placing the concrete for each step

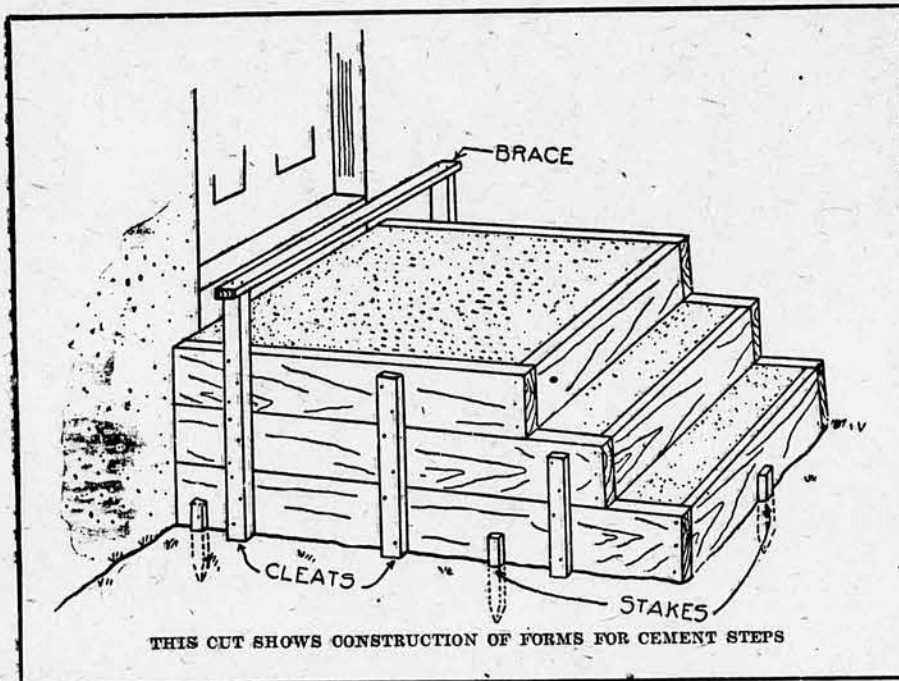
so that the concrete first deposited will not harden and set up before the next form is filled. After the steps are about one week old, the forms may be removed and the steps used. After the forms are removed any roughness or irregularities may be smoothed down and the surface of the entire steps finally finished by rubbing with an old piece of emery wheel and water or carborundum and water. Where the work includes many steps, a hollow place is generally left under the main body of the steps to effect a saving in materials. Where this is done the platform and steps are reinforced with steel rods or heavy wire mesh to prevent cracking.

Feeding the Pastures

No part of the farm is expected to produce more continuously than the pastures. Pasture crops require feeding the same as field crops, if big yields are expected. Some attention should be given to the matter of fertilization of pastures. Some make a practice of hauling out rough feed for the stock and scattering it over the pastures during the winter season. This helps to scatter manure and leaves a mulch of coarse material that is of considerable benefit to the grass the following season. A top dressing of barnyard manure will be a big stimulus to the grass in the spring. No crop gives better returns from the scattering of manure than do permanent pastures.

Such pastures should not be overstocked early in the season, as the grass must have a chance to strengthen its root system and it cannot do this if kept cropped closely the whole season. A luxuriant pasture is worth a great deal on a live stock farm.

The silo will greatly reduce the pasture acreage required and will have a marked effect on beef production on high priced lands.



THIS CUT SHOWS CONSTRUCTION OF FORMS FOR CEMENT STEPS

LIGHTNING RODS PROTECT

Statistics Show Value of Properly Installed Arresters in Preventing Fires

By C. E. Reid, Professor of Electrical Engineering, K. S. A. C.

LIGHTNING rods of good material, if properly installed, are a real protection. The rod business got into disrepute in early days because manufacturers of lightning arresters knew little about electricity and because many swindles were worked on farmers in connection with the business.

The farmer felt that his only safety lay in a shotgun and a bulldog when lightning rod agents were in his neighborhood.

Under modern conditions, however, rods have proved successful. In Iowa, fifty-five insurance companies reported for eight years, 1905 to 1912, that about 50 per cent of the buildings insured by them had rods. In the eight years, all these companies paid only \$4,464 lightning claims on rodded buildings, an average of \$10.15 per company per year. On unrodded buildings, they paid lightning claims amounting to \$341,000, an average of \$775 per company per year. By comparing \$10.15 with \$775, it is seen that for every \$1 paid on rodded buildings, \$76 was paid on unrodded ones, or that the rods save \$75 out of an expected loss of \$76 if the buildings were not rodded. This shows an efficiency of 98.7 per cent, and as these rods were not subject to inspection, it is probable that some improper rodding is included.

Reports from state fire marshals in Illinois, Indiana, Iowa, Minnesota, and Wisconsin, show that out of a total of 3,499 lightning fires, only thirty-nine of the buildings were equipped with lightning rods. This is only 1 per cent of the total strokes, while 31 per cent of the buildings in these states were rodded; that is, the rods saved thirty out of every thirty-one rodded buildings.

There are nevertheless those with an honest difference of opinion as to the desirability of lightning rods. Some may have heard or known of cases where rodded buildings were struck, and they are not able to think of the many cases where rods must have protected buildings. Others do not think it pays to rod buildings. The secretary of one large company in Iowa says:

"From January 1, 1904, to August 28, 1914, we have had twenty-eight dwellings, forty-four barns, thirteen cribs, five churches, and one hall struck by lightning. Of these, eleven barns were burned, with a total loss of \$5,600. None of the other buildings were destroyed, but the remaining eighty were damaged to the extent of \$7,152—a total lightning loss of \$7,152. The persons owning these ninety-one buildings had 255 buildings insured. It would have cost an average of \$30 to rod these 255 buildings, or a total of \$7,650. Our average insurance for the time given was \$3,992,000. A 2-mill assessment on this amount is \$7,984, which would have paid the losses and leave a balance over of \$832."

IS INSURANCE SUFFICIENT

This man evidently thinks from the insurance man's standpoint that it does not pay to rod buildings, but are you willing to have your buildings struck and burned even if you are able to collect the insurance money, and are you usually able to collect enough insurance money to repay you fully in every sense for even your financial loss?

Whether or not to install lightning conductors on your property is after all a question of individual judgment. If the property is insured against loss by lightning there is not so much incentive toward the additional expense of lightning rods.

For protection against lightning, a government bulletin recommends No. 3 or No. 4 double galvanized iron telegraph wire, galvanized iron staples, wire connecting tees, and aluminum paint. Though iron is not so good a conductor as copper, it is thought to be less likely to cause dangerous side flashes, also to dissipate more readily the energy of the lightning flash.

RIGHT SIZE FOR RODS

Another bulletin, published in Ontario but based largely on data secured in the United States, holds that rods of any metal will give good protection as long as they are in good repair and properly installed, and that the relative value depends upon their respective durability. Copper rods should not be smaller than three ounces to the foot; if buildings are more than sixty feet high the National Board of Fire Underwriters recommends not less than six ounces to the foot. Aluminum, if used, should be somewhat larger than copper, but should weigh about the same per foot. Copper, if used, is recommended in the form of

distance between uprights should not be greater than twice their combined height. Uprights two feet high could be eight feet apart. All agree that the more vertical rods there are, the better the protection, to the above limit. They should be placed not farther than five feet from end of ridge, better closer, and should also be placed on dormers or silos at cable or tape, on account of its flexibility and strength. If cable is used, no single wire should be smaller than No. 12 B. and S. gauge, and tape should be at least three-thirty-seconds of an inch thick by half an inch wide.

The bulletin of the United States department recommends also a soft iron cable about three-eighths of an inch in diameter, or an iron wire about a quarter inch in diameter. An objection to the cable form is that moisture is held between the strands, and rusting takes place more seriously. The cable is more easily handled, and bends around corners more readily, and the ends can be spread out like a broom, giving additional points for the collection and dissipation of the charge.

It might be well to consider a com-

A good approximate rule is that the tached to the barn. All conductors should be attached directly to the building by staples, nails, clips or other metal attachments, and in no case should glass or porcelain insulators be used. The use of these was one of the early mistakes.

MUST BE WELL GROUNDED

The ground connection is probably the most important feature of the entire installation and here the owner should trust no one, but see the ground rods installed in his presence. They should be deep enough in the earth to reach permanent moisture, in most cases seven or eight feet, but farther if necessary. A simple, cheap and effective way to make a ground connection is to take a ten-foot piece of one-half inch iron rod, swedge the point to about three-quarters of an inch in diameter, and turn the other end of the rod into an eye for a hand hold. A hole large enough for a pail of water is dug in the ground, and filled with water. The drill is placed in the hole and gradually worked down, with the use of more water if required. When the drill is down full depth it is

IN Iowa 55 insurance companies reported for eight years, 1905 to 1912, that about 50 per cent of the buildings insured by them had rods. In the eight years, all these companies paid only \$4,464 lightning claims on rodded buildings, an average of \$10.15 a company each year. On unrodded buildings, they paid lightning claims amounting to \$341,000, an average of \$775 a company for each year. By comparing \$10.15 with \$775, it is seen that for every \$1 paid on rodded buildings, \$76 was paid on unrodded ones, or that the rods save \$75 out of an expected loss of \$76 if the buildings were not rodded.

The installation is a very important part of lightning rod protection. The all-important thing is to have a continuous conductor from the highest points on the building to moist earth beneath. There must be no loose points or joints filled with rust, or broken joints or sections out because of rust or careless handling. A rod broken from any reason ceases to be a conductor and becomes an accumulator and a source of danger rather than protection.

bination of the solid rod for the main conductor, with cable for vertical terminal rods. These should be inspected at least once a year and replaced if in bad condition. Copper-washed wire should not be used, and a wire composed of a steel center with a surrounding sheath of copper has been found to be less durable than if made of iron alone. When iron is used, it must be double galvanized and kept painted, preferably with an aluminum paint.

NOT A COMPLEX JOB

The installation is a very important part of lightning rod protection, but involves no more complex or secret operations than building a fence or digging a well, and any professional lightning rod agent who insists that his system is the only one that is scientifically correct and reliable, and that no one but an expert, at a high price, should be allowed to install it, invites suspicion either of his honesty or of his knowledge.

The all-important thing is to have a continuous conductor from the highest points on the building to moist earth beneath. There must be no loose points or joints filled with rust, or broken joints or sections out because of rust or careless handling. A rod broken from any reason ceases to be a conductor and becomes an accumulator and a source of danger, rather than a protection. Two iron wires twisted together make a good electrical joint for a while, but rust will soon collect and separate the two wires from good contact. Tees should be used for connecting iron or aluminum wires, and copper wires should be well soldered, a flux without acid being used. A horizontal rod should run along the entire ridge of the roof, around, not over, chimneys or cupolas, and a vertical terminal ending in a sharp point should be erected every eighteen or twenty feet along the ridge, and should be at least twenty inches high above the ridge. Each chimney, cupola, gable, or other point projecting above the roof line should have a riser projecting above its highest point.

withdrawn and the cable carefully slipped into the hole. It should be protected by boards for six or eight feet above the ground.

A rectangular building should have one of these ground connections, with a ground rod up the side or corner on each side of the building for every twenty-five or thirty feet of its length. On an L-shaped or a T-shaped building, there should be at least three groundings, and on a U-shaped building, four or more, depending on the size. All the cables on one building should be connected into one system.

CONNECT GUTTERS WITH ROD

Every roof gutter should have the top connected to the lightning rod, and the bottom to the ground rod, or to a ground rod of its own. All metallic eave troughs and conductor pipes should have the free ends connected to the rod, and conductor pipe should be grounded. All hay fork tracks, barn door tracks, and similar metallic bodies should be connected with the rod at both ends, or one end with the rod and the other with the ground.

Metallic roofs should be grounded at two or four corners, depending on size, but never from the peak. Points should be used on the ridge and other prominences.

Cattle are often killed in fields near wire fences, and under trees. Fences should be grounded at least every twenty rods, a No. 9 wire extending at least three feet into the ground, projecting above the fence, and stapled on the posts in contact with all the wires of the fence. Yard fences should be grounded at each corner, and at the first post from each building.

Where there are only a few trees under which stock in the fields gather for shade, it will be feasible to rod the trees.

Beware the Losing Acre

In buying a farm, unprofitable acres that cannot easily be made profitable should ordinarily be considered as hav-

ing little or no agricultural value. They may even be a burden to their owner, in which case they have a negative value. A farmer was about to buy a quarter section farm in the corn belt at \$100 per acre. This appeared to him to be a very reasonable price for a farm in that region, until a careful analysis of the proposition called his attention to the large amount of waste land on the farm. Actual measurements and careful estimates furnished the following data:

Eighty acres rich, sandy loam, not stony, not rough, gently sloping, well drained, actual value \$125 per acre, \$10,000; forty-five acres poor land, sandy, stony, rough, hilly, probably of little or no agricultural value, actual value nothing; thirty-five acres poor pasture land, wet land that can be drained but that cannot be drained at a profit, actual value \$10 per acre, \$350; buildings, \$2,450—Total \$12,800.

These figures gave the 160-acre farm, including buildings, a value of \$80 per acre, though a part of it was worth considerably more than the average price per acre asked for the farm. An itemized study of the farm, acre by acre, and a detailed study of fences, buildings, and other improvements, should always be made before purchasing. Such investigation often calls attention to enough unprofitable acres to stop the sale.—J. C. McDowell, Department of Agriculture 1915 Yearbook.

Feed Cost of Beef Cattle

For nine years the Missouri Experiment Station has been investigating the cost of maintaining beef steers at a constant weight. It has been found that this varies with different conditions. The grain fed in all the tests has been a mixture of eight parts corn and cob meal to one part old process linseed oil meal, and 2½ pounds of this mixture has been used to each pound of alfalfa hay. The following is a brief summary of the results:

One 11-months-old steer weighing 607 pounds needed 4.7 pounds of grain and 1.9 pounds of hay daily to keep at constant weight during one year. A second animal of the same age weighing 736 pounds needed 5.6 pounds of grain and 2½ pounds of hay daily during one-half year. A two-year-old steer weighing 767 pounds kept at constant weight for one year on an average daily feed of 5½ pounds of grain and 2½ pounds of hay. Another steer of the same age weighing eight pounds less needed daily 6.1 pounds of grain and 2.7 pounds of hay to maintain body weight. This steer was quite active. A three-year-old steer weighing 837 pounds needed 6.8 pounds of grain and about 3 pounds of hay daily during five months. Two other steers one year old, the first weighing 934 pounds and the second weighing 1081 pounds, needed only 6½ pounds of grain and 2½ pounds of hay daily during two years. A two-year-old steer weighing 1,212 pounds was kept at constant weight for four years on the same daily weight of grain and hay as used by the last two steers. Another steer weighing 1,065 pounds was kept for over two years at constant weight with a daily ration of 6.1 pounds of grain and 2½ pounds of hay. This last animal was kept confined in a stall while the others had the run of a small lot. The last three steers were very fat at the beginning.

The results when studied with reference to the varying conditions show:

1. The cost is proportional to the amount of active protein—lean muscle and organs—in the steer and not to live weight.
2. It costs less to keep eight 1,200-pound steers than to keep twelve 800-pound steers.
3. The season influences the cost. It is highest in the winter and in very hot weather.
4. Previous high living greatly increases the cost.
5. Youth and activity increase the cost.
6. Age and inactivity decrease the cost.
7. A long time on maintenance decreases the cost.
8. Fatness may decrease the cost since the steer can save feed by using its body fat.
9. Thrifty steers need less feed than poor feeders and those lacking in thrift.

Probably three million pounds of twine will be made by the state's twine plant at Lansing. Most of this will be sold direct to farmers' organizations.

YOUNG FOLKS ON THE FARM

WE have received the following letter from a Cowley County reader, on the important question of contenting the young folks on the farm:

"This much discussed question seems as far from final settlement as ever. Yet there is wisdom in much counsel and some theory will sooner or later be advanced to fill the demand.

"I think I have learned some things about boys and girls, having helped rear a good-sized family to manhood and womanhood during a struggle to pay for a farm, improve it and add to its acreage. This was during a time of 35-cent wheat, 12- to 15-cent corn, and 2-cent hogs, and the usual set-backs of Nature. Various ways of keeping the boy on the farm have been suggested from the boy's standpoint, which is all right at this time, but many times in my own experience the cost of living and farm expenses called for the proceeds of the labor of all combined, and then sometimes it failed to come out even with the expense.

"To be a winning factor in keeping the boys and girls at home, the father and mother must be a boy and girl with them, and enter into their sports and schemes as one of them. The boy becomes lonesome without companionship and the father can accomplish much by this means. While seventy years have come and gone with me, I still love to mix in the sports of the boy and often find myself attempting the stunts I performed when a young man.

"We have known boys and girls who were driven from home because of too much restraint; others because of too much and severe labor with no let-up; still others have left because of punishment. This is not necessary. Perhaps this sounds like a broad assertion, but I do not call to mind a single whipping I ever gave any of my children. We had no trouble in keeping in touch with them.

"The farmer can do much to encourage his boy by always supplying him with good teams, tools, and harness, so that he will take pride in his treatment and use of them. One case occurs to my mind of a family of four boys who never knew what a good horse, harness, or tools means. They were always supplied with what could be bought at a sacrifice sale. These boys all left home as soon as they became of age, and they have succeeded in making good for themselves in other lines of business. Good clothes, some spending money, and young company, also go far toward holding the boys and girls at home.

"The matter of giving the boy a colt, a sow, or heifer, and letting him have the proceeds, is one way to encourage him, but he should be required to clothe himself and furnish his own spending money, and while this is commendable it is fraught with some complications that do not always prove beneficial. One neighbor I knew who had three boys, began by giving a calf and a colt to each, they to have the increase. In a short time the boys had more stock than the father which the farm must feed out of the father's bins and stacks. The boys thus given a start soon have a monopoly on a majority of the stock and the father must make a large sacrifice to accommodate them. This is not so serious a matter if the farm is all paid for and a bank account is tucked away, but when payments for various things become due and the running expenses of the farm must be met, the man who has been thus liberal with his boys finds a serious handicap in this system. So, while I believe in helping the boys all that is consistent with surrounding conditions, there is a point at which a line should be drawn. If the father and the boys are going into a business of this sort, it would be better to enter into a written agreement of just what is expected of each, and this after mature deliberations, for boys do not always remain small.

"While it is commendable to provide for and encourage the boys, why not give Mary and Jane as good a chance? They do much of the labor of the home, including washing for the boys, and usually receive their board and clothes for their services. Now, on the surface, this assistance for the boys seems perfectly right, but when they have grown to maturity they usually want what is coming to them—what they have accumulated, and a share of what is left.

"Conditions would not be so complicated if all were of the same disposition, but this is seldom so. One is more exacting, or selfish, or lenient, as the case may be, than another, so it is almost impossible to satisfy all. It seems to me that the sensible thing to do would be to treat them all liberally and

kindly, giving each an equal chance in the matter of favors or rewards, letting the proceeds of the entire family accumulate. Then when the oldest desires to do for himself, assist him as far as consistent with conditions, always letting the children understand that Father and Mother expect to retain control of the home while they live, and when they are through with it it will be equitably distributed.

"There are so many complications entering into a family partnership that hard feelings often result and the family happiness is thus marred. It seems that the wise thing to do with boys and girls—although the tastes and inclinations of the girls are different—would be to enter into a general partnership, where the father, mother, boys and girls, each is provided a certain stipulated share of the proceeds of the place and each invests either money or labor in the branch of the business preferred, giving to parents their share, each assuming under the direction of the father and mother, the care and marketing of the surplus, which should be credited to the respective members in proportion to their labor invested. Thus a responsibility would be assumed by each under the parents' supervision, in which the children would realize what a dollar cost them and how it came. Children little know what it takes to earn a dollar, and this system or something like it would give them a working knowledge of business affairs and a feeling of independence which is not experienced where the parents assume all and bear all expenses. Certainly any arrangement with children is more or less complicated, and the more removed the complication the less family friction."

Civil Engineers Needed

There seems to exist in the minds of many citizens of Kansas, an idea that there are no opportunities in this state for the employment of those young men who wish to enter civil engineering as their life work.

Millions of dollars are being expended annually by the cities of the state in the construction of pavement, water works, sewers, etc. All of these works call for such skill in their design and construction as are possessed by the trained and experienced civil engineer.

Within the borders of the state are more than 100,000 miles of highway, of which a considerable percentage should be improved and maintained by civil engineers who have specialized in this line of work. The basis for this statement lies in the fact that, so far as the writer is aware, no country has been able to construct an efficient system of highways at a reasonable cost until the system has been placed in the hands of a competent engineering corps.

The average annual loss to the citizens of the state from flood damage and lack of drainage amounts to millions of dollars. The proper control of flood waters, with a view to reducing this damage, is an intricate problem, the solution of which will require years of study. This work also lies within the field of the civil engineer.

Another vast field for young civil engineers is found in the construction and maintenance of way departments of the railroads operating within the state. These departments on the railroads furnish continuous employment to hundreds of men.

In recognition of these many fields for the civil engineer within the state, and recognizing also the inherent right of the sons of Kansas to select for themselves their life work, whether this labor lie within or without the state, those responsible for the establishment of the policies of the educational institutions of the state have provided an opportunity for such young men to secure an education that will fit them for civil engineering work.

At the Agricultural College the state maintains a department of civil and highway engineering. It is the aim of the department to give the student such a training in the fundamental principles involved in the design and construction of all engineering works as will enable him successfully to enter this field. This is accomplished through the efforts of a corps of experienced instructors, practically all of whom have had at least a few years of practical field experience. In addition, the college maintains laboratories for instruction in mechanics, hydraulics, road materials, surveying, etc. The equipment of these laboratories in all branches compares favorably with that found in any educational institution west of the Mississippi River.—L. E. CONRAD, Professor of Civil Engineering, K. S. A. C.



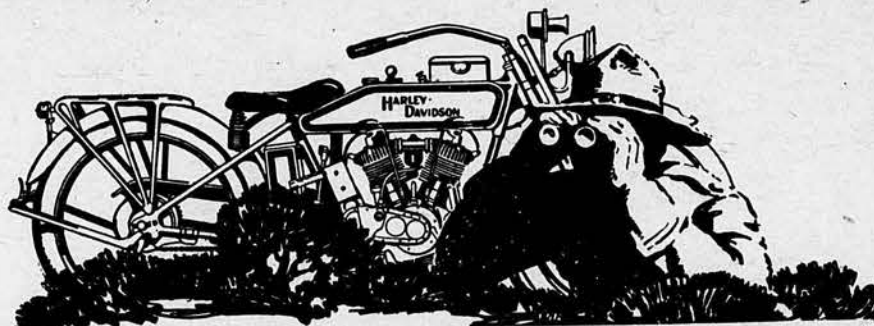
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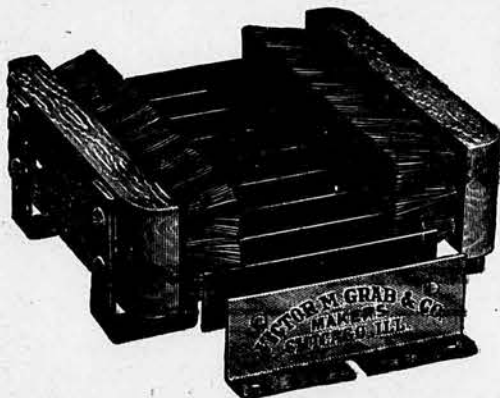
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THE SPEEDY STITCHER is provided with a set of diamond-pointed grooved needles, including special needle for tapping shoes. It also contains a large bobbin from which thread feeds, all of which are inclosed inside the handle out of the way. Finished in the best possible manner—highly polished rock maple handle and nicked metal parts, with nickel-plated needles that will not rust.

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READ KANSAS FARMER'S CLASSIFIED
ADVERTISING PAGE FOR READY BARGAINS



Little Talks to Housekeepers

Helpful Hints Here for the Women Folks of the Farm

The greatest service anyone can render us is to start us toward helping ourselves.

We limit or enlarge our own opportunities. The neglected opportunity is withdrawn, the improved opportunity seems to multiply and open endless fields of action which we enter as naturally as though guided.

While waiting for the modern house, install as many of the modern conveniences which have been tried and proven, as can be accommodated in the old house. There are many worthy ones on the market which merit investigation. Such conveniences should not be considered in the light of luxuries, but as life-savers, for they conserve the energy of the housewife and make it possible for her to have a little time for rest and recreation.

I like to use a crochet picot edge to trim underclothes, etc. But instead of using seam beading, which is expensive, I use white lawn bias fold tape, which is cheaper. Double it and crochet onto

the double fold if it is to be used for a binding, or crochet along the upper edge if it is to be used as a facing on either the right or wrong side of the garment's edge. This is removable if the garment is outgrown or the article worn out before the lace is worn.

What Is Success

Finding pleasure in our work is the first milestone and the most essential one on the road to success. Work that has ceased to be a pleasure becomes drudgery and this kind can never be called successful. The task undertaken may be accomplished, but unless we have found satisfaction in its accomplishment we cannot call it a success.

Sad is the story of the misfitted life. Doubly sad is it if the choice has been made by another. No one can so well choose our life work as ourselves. Influences may be brought to bear upon us which will have their part in shaping our decision, but these should be unbiased. Their value will be in making comparison possible. After the decision has been reached these same influences

FASHION DEPARTMENT — ALL PATTERNS TEN CENTS

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



No. 7668—Ladies' Waist: Cut in sizes 36 to 44 inches bust measure. A perfectly plain waist and yet there are interesting touches of detail that will set off the garment when made up, more than the picture shows. The full blouse has front closing and so deftly does the insertion outline this closing that we see an inset vest suggested. No. 7641—Girls' Dress: Cut in sizes 6, 8, 10 and 12 years. This dress closes in the front, having long or three-quarter length sleeves. The collar continues its line on left side to "yoke mark" on the waist. The skirt is plaited with a panel front. Cuffs, collar and belt are of contrasting material. No. 7655—Ladies' Shirtwaist: Cut in sizes 36 to 44 inches bust measure. This waist is cut fashionably full and has the shoulder fronts gathered. In accord with the dainty collar are the sleeve cuffs of contrasting color and the buttons to trim are admirably arranged. No. 7635—Ladies' Slip: Cut in sizes 34 to 42 inches bust measure. A simple pattern, but one that will make a charming slip out of flouncing is shown in this illustration. The corset cover is all in one piece, and is enriched by the shoulder straps with silk bows to crown. The petticoat has three gores. No. 7659—Girls' Dress: Cut in sizes 6, 8, 10 and 12 years. It is not difficult to interest one with a love of beauty in this charming little frock which slips on over the head and front a box plait is made. No. 7636—Ladies' Dress and Cap: Cut in sizes 34 to 42 inches bust measure. An appropriate garb for the particular housekeeper who wants to be comfortable while in the routine of home duties and at the same time presentable. In high or regulation waistline; the waist is made on the full lines of the street dress and has button closing to left of the front.

can greatly help by encouraging and pointing to the main road when the way seems a little uncertain because of the many paths leading away from it. Nothing in this world is so valuable as humanity and nothing more important than that the life find the place for which it is fitted.

Mother of the Plains

Mother, gentle mother of the plains,
This Kansas breathes and lives and is of
you!
Your strength, your beauty, drawn from
your young veins
By coil and wind and tears, live now
and fair—
Your heart was young, you were so sweet
When a girl wife you came to this same
plain.
But soon you knew the ceaseless wind's mad
wear—
The hopelessness of skies that sent no
rain;
And your red cheeks grew pale, your hair
grew gray—
Your lovely hands grew shapeless, hard-
ened, old—
You knew, but weary toll from day to day;
And yet you faltered not as long years
rolled.
Kind, gracious giver,—now in after years
Your beauty springs again in living truth—
There blooms a wild flower watered by your
tears
And patterned for the red lips of your
youth!
The tinted autumn grasses your brown
hair—
The molting, purple distance your sweet
eyes,
And in these plains the spell of your kind
hands,
So loving and so tolling, never, never
dies—
But winds itself around the hearts of men,
That all who ever knew its touch come
home
To feel that peace within their hearts again
That they may never know when far they
roam.
The sunset paints in gold and flame en-
raptured
The passion of your strong, good heart for
love;
Your voice—the lark and tender twilight
wind:
The woman that you were, these beauties
prove,
And your fine soul—it fills your stalwart
sons
With truth and might and right; your
glory reigns—
They count themselves among earth's most
blest ones.
Mother, wondrous mother of the plains.—
Nell Lewis Woods, Kinsley, Kansas.

Evil of Careless Talk

Conversation is the index to the man. The noble man expresses himself in a noble manner. Slang is the medium through which the careless, shallow life is displayed. To the ear of one whose habits and character are formed, slang may be only a discord, but to the child or youth it may be a weakening force. Slang shows up in its true light to the disinterested and helpless listener to the conversation. It is then we wonder if we have ever been guilty of using those silly, meaningless words. It is then we search our supply of words and silently strive to express the uttered thoughts in English. It is then we realize how prevalent is the use of slang and we resolve to more carefully voice our thoughts. The use of slang is a habit, the conquering of which will not only be helpful discipline, but will greatly add to the elegance of our speech.

House Weeding Practice Good

Have you formed the habit of accumulating useless things, excusing yourself with the thought that they may be wanted later? We know from experience that in the end this means much work in sorting to make sure something valuable is not thrown away. Each time we have one of these general cleanings we resolve to sort as we go along, and give space to only such things as are useful. But almost before the day is ended an interesting looking story is noted in some paper, there isn't time to read it now, and it is laid away for the leisure hour that is sure to be

used on something closer at hand and more recent. Or perhaps it is a page showing a number of dress patterns which we are sure we will want at some future time, forgetting that these come regularly.

It isn't long before we are back in the same rut, firmly set against throwing away a pair of gloves that are so worn they would not even be a protection to the hands in working, and allowing papers and old answered letters to accumulate as fast as before.

The greatest evil of the practice along this particular line is that it detracts from the restfulness and orderly appearance of the house. But when we keep old clothes that will never be worn again and which might be of service to others, we are encouraging selfishness, though of course we do not think of it in this way.

Looked at from any angle, it is a bad practice, and as we here acknowledge our own weakness in this direction, we again promise ourselves we will more carefully sort as we go along, weeding out and destroying the useless and passing along anything of value to others.

Parker House Rolls

2 cupfuls scalded milk
3 tablespoonfuls butter
2 tablespoonfuls sugar
1 teaspoonful salt
1 yeast cake dissolved in
¼ cupful lukewarm water
Flour

Add butter, sugar, and salt to milk. When lukewarm, add dissolved yeast cake and three cupfuls flour. Beat thoroughly, cover, and let rise until light. Cut down, and add enough flour to knead—it will take about two and one-half cupfuls. Let rise again, toss on slightly floured board, knead, pat, and roll out to one-third inch thickness. Shape with biscuit cutter, first dipped in flour. Dip the handle of a case knife in flour and with it make a crease through the middle of each piece. Brush over one-half of each piece with melted butter, fold, and press edges together. Place in greased pan, one inch apart, cover, let rise, and bake in hot oven twelve to fifteen minutes. As rolls rise they will part slightly; and if hastened in rising are apt to lose their shape.

Fried Onions

Slice onions, boil in plenty of salted water until tender. Drain off water and fry in butter.

Cheese Crackers

Put small pieces of cream cheese on crackers and place in oven, leaving them there until the cheese has melted and the crackers have browned slightly.

Boiled Custard

2 cupfuls scalded milk
Yolks of 3 eggs
¼ cupful sugar
¼ teaspoonful salt
½ teaspoonful vanilla

Beat the eggs slightly and add sugar and salt. Add hot milk slowly, stirring constantly. Cook in double boiler, stirring until mixture thickens and forms coating on spoon. Strain immediately, chill and add flavoring. The custard will curdle if cooked too long, but it can be made smooth again by beating with egg beater.

A traveler in Indiana noticed that a farmer was having trouble with his horse. It would start, go slowly for a short distance, and then stop again. Thereupon the farmer would have great difficulty in getting it started. Finally, the traveler approached and asked, solicitously:

"Is your horse sick?"

"Not as I know of."

"Is he balky?"

"No, but he's so danged 'fraid I'll say whoa and he won't hear me, that he stops every once in a while to listen."



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This Book Describes The Lands

A new book, "Free Homestead Lands of Colorado Described," has just been published, and KANSAS FARMER has made arrangements to distribute copies of this book in connection with yearly subscriptions to KANSAS FARMER, new or renewal.

The character of this land varies in different localities. Considerable of it is especially good, other portions only of fair quality, and some is poor, broken, and of little value. It is most important for a settler to locate in the right district and at the least possible expense. With this end in view, this book has been published, classifying the lands open for entry and giving accurate detailed description and location of the land in every township containing vacant land in Colorado, describing the surface, soil, timber, distance from railroad, etc.

This is the same book for which many have been glad to pay \$2. However, for a limited time we will send a copy of this book and a year's subscription to KANSAS FARMER to

anyone sending only \$1, our regular subscription price, and 10 cents extra for mailing—\$1.10 in all. The book is complete—320 pages, same as the higher-priced book, only this is in a strong paper binding instead of cloth. Send all orders to

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Blatchford's Calf Meal and Sell the Milk

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Get FULL VALUE For Your Wool

If you want top market prices you should ship your wool to a reliable house. We charge no commission. Honest weights—correct grading and prompt returns guaranteed. Our success "44 Years Honest Dealings" Before you sell or ship your wool be sure and get our price list and shipping tags absolutely FREE. Means much to you. Write today.

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WITTE

You can't buy any good engines at a lower price. You can't buy a better engine at double the price. Sold direct factory to user. Established 1870.

WITTE ENGINE WORKS,
1601 Oakland Av. Kansas City, Mo.
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2 H.P. \$29.95
4 H.P. \$47.50
6 H.P. \$64.75
8 H.P. \$80.90
10 H.P. \$109.50

Write for prices on sizes 16 and 22 H.P.



VARIATIONS IN CREAM TEST

ONE of the most common causes of dissatisfaction on the part of the man who sells cream on the butter-fat basis, arises from variations in the test. This is especially true if each can is tested separately, and the best way for the seller to convince himself that the tester is neither careless nor dishonest, is to secure a little outfit for himself. A well made, accurate, and satisfactory tester can now be bought for five dollars, and its use will not only satisfy the seller that he is getting honest treatment, but will enable him to detect the boarders in his herd.

Variations in test cannot be avoided. A number of conditions influence the test of hand separator cream. Some of the most important are given below:

A change in the speed of the separator immediately causes a change in the tests of the cream, the higher the speed the greater the amount of skim milk thrown out, and so the higher the test of the cream secured. Putting it in another way, a low speed results in a larger quantity of thinner cream.

The use of the float does not always insure a uniform flow of milk into the separator, because the faucet may not always be opened equally wide and the flow will be more rapid when the tank is full than when it is nearly empty. Anything which makes the inflow more rapid will increase the proportion of skim milk which goes through, and lower the test of the cream secured.

The amount of water used in flushing may easily be varied a pint or more, and this without any other cause or variation may change the test by two, three, or even four or five per cent.

The milk of an entire herd may rise or fall in its test from day to day because of excitement or change in the weather. If the milk of a herd, whose average test is four per cent, is ordinarily so separated that the cream tests forty per cent fat, the test will suddenly rise to 42.5 per cent if the milk of the herd is suddenly raised to 4.25 per cent without any change in method of separating.

The test is, of course, readily controlled by means of the cream screw, but as it is seldom changed in this way, on the average farm, there should be no trouble because of variation from this source.

Variations in cream tests are practically never caused by changes in the feed of the cow as every well informed cream seller is now aware.

Mistakes are most likely to result from carelessness in taking samples, as they must be very carefully and skillfully taken if they are to tell the truth and result in a fair payment, but actual dishonesty is probably much rarer than many sellers believe. A clever thief would manipulate the reported test in such a way as not to arouse the suspicion that an honest report sometimes brings up in the mind of the man who does not consider all the possible hidden causes of variation.—C. E. ECKLES, Missouri Experiment Station.

Improve Dairy Methods

Will J. Stewart, a Shawnee County dairyman, thinks the striking milk producers are wrong in their demand for higher prices. He writes as follows:

"It is not higher prices that we dairy-men need so much as it is better business methods in our work and more accurate knowledge of the handling of cows. I will venture the assertion that many of the striking dairymen supplying the Chicago market keep 'scrub' cows and feed

them unbalanced rations. The scrub cow wastes a large proportion of the feed she eats. When a man keeps inferior animals he has no right to ask higher prices just to cover up his own lack of ability. Dairy-men are like most other farmers—they waste as much as they use. If we all would keep good cows there would be no occasion for striking to get higher prices. We do not make our land produce enough and we do not keep the kind of cows that are capable of making the best use of what we do produce."

Shade for Cows

The comfort of milk cows always has an influence on their production. In a few weeks they will be seeking shade during the hot part of the day if any is to be found in the pasture. If the pasture has no shade it is lacking in one of the things that contribute to the cow's comfort. Shade on the high points in a pasture is always more acceptable than shade in the hollows or draws. Such points are cooler and freer from flies. It takes time to grow trees and some pastures may be without shade of any kind. An artificial shade in the form of a low, open shed, placed in a breezy location in the pasture will help to keep the cows contented when the hot days come.

Warm Milk Sours Quickly

Milk kept lukewarm in a vacuum bottle will sour as quickly as if left in an open crock. Milk sours from the action of bacteria. It is practically impossible to prevent these organisms getting into milk. They multiply with great rapidity in warm milk and as a result it sours quickly.

Cold retards the development of bacteria. Even though present in small quantities they cannot increase if the temperature is kept as low as that of cold well water. Cold milk sealed in a bottle will keep sweet a great deal longer than will lukewarm milk. Now that warm weather is coming on it is well to get these points in mind. Reducing the temperature of milk and cream quickly is the practical method of keeping it in good condition. Keep the bacteria to a minimum through cleanliness of all utensils and then make their increase difficult by cooling quickly and holding at a low temperature.

It is time to be getting the cream cooling tank ready for use. Cream cannot be delivered in good condition for butter-making unless it is cooled quickly and kept cool.

Heifer for Dairy Club

In awarding the prizes in the Kansas Farmer Dairy Club, thirty points are to be allowed for the total production for the year. This is placing less than one-third of the total score on production.

The question has arisen relative to the use of heifers in competing for prizes. It stands to reason that a good mature cow will produce more in a year than an equally good two-year-old heifer. The heifer at this age has not reached her maximum capacity. The point which concerns the boys and girls is whether the contestant compelled to use a heifer is handicapped because of this fact. A number have asked this question.

In making the first announcement of the dairy club in our issue of February 26, we said: "In the competition between young heifers and mature cows due allowance will be made for age.

Heifers Have Equal Chance With Cows

THE boy or girl who enters the Kansas Farmer Dairy Club with a young heifer will have just as good a chance to win as the one having a mature cow. Thirty points are allowed on total production but in the competition between mature cows and heifers due allowance will be made for age. These points have all been worked out so that the production from a heifer will be given due credit in making the comparison with that of a mature cow. No contestant need hesitate to enter with a heifer for fear of not having a fair chance.

IT WORKS With Every Inch!



FROM FEEDER TO STACKER THE RED RIVER SPECIAL is a Practical Threshing Machine

There is no waste of power, there is no waste of grain, there is no loss of motion, there is no mass of unnecessary parts that lumber up the work.

It Is Built to Separate Grain

And it does this and does it just as fast and just as well as it can be done with simple efficiency and with compound economy. It is the one supreme machine for its class of work. This supremacy has been gained by sixty-eight years of constant improvement upon the one great idea of minding your own business.

You Get RESULTS That Way

Good friends of yours are making money and saving grain by using this machine. They tell you how they do it in the Home Edition of the Red River Special paper. You'd better send in your address for a copy of the last edition. If you would like a Big Catalog, just mention it when you write.

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BUILDERS EXCLUSIVELY OF THRESHING MACHINERY

Red River Special Threshers, Feeders, Wind Stackers, Steam and Oil-Gas Traction Engines

(S) BATTLE CREEK, - MICHIGAN



Why Not Make More Wool Money?

You can easily net from 15 to 20 per cent more on every sheep. Don't shear in the old hard sweaty way. Don't have aching, swollen wrists. Shear with

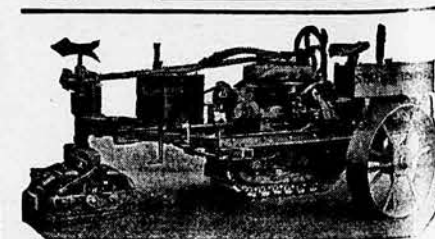
The Stewart Shearing Machine

Has ball bearings in every part where friction or wear occurs. Has a ball bearing shearing head of latest improved Stewart pattern. Complete, including four combs and four cutters of the celebrated Stewart quality \$11.50. Get one from your dealer, or send \$2.00 and we will ship C. O. D. for balance.

Chicago Flexible Shaft Co.
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Price \$11.50
Write for complete new catalog

GREATER WOOL PROFIT



30 H. P. Weight 6,000 lbs. Will pull two or three 14-in. plows. The long chain tread pulls on soft ground or mud where wheel machines fail. STRAIT'S TRACTOR never slips—never skids—works in any place every day, rain or shine. Price right for the work it will do. Write for full information. NO IT NOW.

KILLEN-STRAIT MFG. CO.
Dept. 4 Appleton, Wisconsin, U. S. A.

O.K. HAY PRESS

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

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

"EL'S TWO-IN-ONE PIG FORCEP—20,000 SOLD

Is sold on 30 days trial. Agents Wanted. Price of our No. 2 \$1. GABEL MFG. CO., HAWKEYE, IOWA

When Writing to Advertisers, Please Mention Kansas Farmer.

These points have all been worked out and the boy or girl who enters with a two-year-old heifer will have just as good a chance to win as one having a mature cow. This means that a certain standard of production has been worked out for heifers of different ages. A heifer with a certain production might stand as high as a mature cow producing a third more butter fat. No contestant need hesitate in starting with a heifer for fear of not having a fair chance.

In some ways it is better to begin with a heifer. You will then have the satisfaction of training the young cow yourself. The mature cow may not always have been treated kindly. It is hard to overcome the results of harsh, rough treatment. If you start in with the young heifer you do not have to contend with the results of mistakes in management made by former milkers. We have seen heifers become family pets and as gentle as kittens when the same person handled them from birth until they became mature cows. In our opinion those who buy heifers will get a great deal of pleasure as well as valuable experience in developing them into milk cows.

There is another point to consider. It is more difficult to buy good mature cows than heifers. Those who have cows that they have tested out so as to know definitely their capacity for production, place a price on them based on this knowledge. Untried heifers of good breeding may develop into good cows, but there is an element of chance and in pricing them this is taken into consideration. By studying carefully the production records back of the heifer, it may be possible to get a better cow for the money than to buy one already developed.

Grain on Pasture

This is the way the Missouri Experiment Station answers this question: If a cow is producing less than a pound of butter each day the necessary food can be obtained from a good pasture. If she produces more than this some grain can be fed with profit. This means that a Jersey cow should be able to get enough food from grass to make about 20 pounds of milk daily and a Holstein about 25 to 30.

It will pay to feed grain to all giving above this amount, as it becomes impossible for the animal to gather sufficient feed in the form of grass. A cow giving a pound and a half of butter daily should have about five pounds daily and for two pounds of butter, give seven or eight pounds of grain. When not more than four or five pounds of grain are fed it can be all corn. If more than this is needed, some bran or a small amount of cottonseed meal should be added. In late summer it will often be necessary to feed more grain to high-producing cows or to give silage or green feeds to help out the pastures.

Teach Use of Milking Machine

A writer from Minnesota thinks instruction should be given in agricultural colleges on the use of the milking machine. He says: "A few years ago when gasoline engines emerged from the experimental stage all the agricultural colleges put on courses in gas engineering. In traveling over the country I find a growing demand among farmers for information about milking machines. From personal investigations I believe the mechanical milker has passed the experimental stage. Why would it not be profitable and of great service to those seeking information for the agricultural

colleges and schools to inaugurate courses in the operation and care of milking machines?

"Much of the dissatisfaction experienced with milking machines is due to ignorance of operation. Many of the colleges and experiment stations are equipped with one or more of the machines and could give courses to the farmers and their sons, both in short courses and in the regular school work. This would enable prospective purchasers and operators to study the milking machine with some degree of intelligence, and would guard against the numerous fakes on the market. I think the mechanical milker is the greatest boon to dairymen since the invention of the cream separator, and it only needs to overcome the prejudice that has accompanied ignorance of it."

Cow Testing Report

Record of cows in the Dickinson County Cow Testing Association which produced more than forty pounds of butter in the thirty-day period ending February 29, 1916. "H" stands for Holstein; "J" for Jersey; "A" for Angus; "S. H." for Shorthorn; "R. P." for Red Polled.

Owner—	Pounds Milk	Per Cent Fat	Pounds Butter
A. B. Wilcox, H.....	1,497	3.2	50.87
A. B. Wilcox, H.....	1,174	4.1	60.16
A. B. Wilcox, H.....	1,322	2.9	47.28
A. B. Wilcox, H.....	1,170	3.9	57.04
A. B. Wilcox, H.....	936	3.6	42.11
A. B. Wilcox, H.....	1,098	3.6	49.41
A. B. Wilcox, H.....	1,869	3.6	84.10
Geo. Lenhart, H.....	1,341	3.07	51.45
Geo. Lenhart, H.....	1,320	4.23	69.78
Geo. Lenhart, H.....	1,083	3.0	40.61
Geo. Lenhart, H.....	1,287	2.9	48.65
Geo. Lenhart, H.....	1,203	3.7	55.64
Geo. Lenhart, H.....	1,104	4.0	55.20
Geo. Lenhart, H.....	1,488	2.8	52.08
Geo. Lenhart, H.....	918	3.6	41.30
Geo. Lenhart, H.....	885	3.7	40.97
J. F. Elsenhower, J.....	684	5.2	44.47
J. F. Elsenhower, J.....	777	5.1	49.53
J. F. Elsenhower, J.....	546	6.9	47.09
J. F. Elsenhower, J.....	924	4.7	54.28
Ralph Sterling, J.....	857	5.0	41.00
Ralph Sterling, J.....	930	5.0	58.12
Ralph Sterling, J.....	1,089	4.2	57.12
Ralph Sterling, J.....	690	4.9	42.25
Ralph Sterling, J.....	699	4.8	42.00
Ralph Sterling, J.....	891	5.2	57.87
Ralph Sterling, J.....	606	5.8	43.87
Ralph Sterling, J.....	765	4.2	40.12
D. S. Engle, H.....	861	3.8	40.87
D. S. Engle, H.....	894	3.8	42.50
Hostetter Engle, H.....	960	3.6	43.1
Hostetter Engle, H.....	933	3.6	41.87
Hostetter Engle, H.....	1,071	3.1	41.50
Hostetter Engle, H.....	675	6.0	50.82
Hostetter Engle, H.....	951	4.8	57.00
H. S. Engle, H.....	1,404	3.1	54.37
H. S. Engle, H.....	1,179	3.6	53.00
H. S. Engle, H.....	1,029	3.1	40.00
H. S. Engle, J.....	807	4.6	45.12
Will House, J.....	729	4.4	40.00
Will House, A.....	881	4.5	55.02
Dr. E. N. Farnham, J.....	843	4.8	50.62
Dr. E. N. Farnham, H.....	981	3.5	42.87
Dr. E. N. Farnham, J.....	1,107	4.55	63.00
Dr. E. N. Farnham, H.....	948	4.0	47.37
Dr. E. N. Farnham, H.....	906	4.8	54.37
Dr. E. N. Farnham, H.....	1,047	3.2	41.87
Dr. E. N. Farnham, J.....	660	5.1	42.12
A. H. Diehl, S. H.....	1,059	3.8	50.25
A. H. Diehl, R. P.....	870	3.7	40.25
A. H. Diehl, S. H.....	912	4.8	54.75
E. S. Engle & Son, H.....	1,080	3.0	40.50
E. S. Engle & Son, H.....	1,200	2.8	42.00
E. S. Engle & Son, H.....	1,020	3.5	44.62
E. S. Engle & Son, H.....	1,245	3.0	46.62
E. S. Engle & Son, H.....	1,023	3.4	43.50
E. S. Engle & Son, H.....	921	4.0	46.00
E. S. Engle & Son, H.....	936	4.0	46.75
E. S. Engle & Son, H.....	2,007	2.91	73.00
E. S. Engle & Son, H.....	1,068	3.4	46.37
E. S. Engle & Son, H.....	834	4.9	51.00
E. S. Engle & Son, H.....	732	5.0	45.62
E. S. Engle & Son, H.....	1,053	3.6	48.62
E. S. Engle & Son, H.....	1,011	4.5	56.87

Cards—Free

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

One of the reasons for butter being a little off in flavor is keeping the cream too long. Butter of the best quality is obtained when the churning is done as soon as the cream becomes slightly acid.

AT THE HEART OF PRODUCTION IF YOU WANT OIL, GO WHERE OIL IS

Your great opportunity to become a member of a safe and sane oil company, incorporated under the Kansas Blue Sky Laws, conducted by business men in a business-like manner. NO PREFERRED STOCK. No high salaries. No assessments. All shareholders share alike.

Three good oil wells sure—two already producing. Drilling operations begun on a third—and this is only a beginning.

Millions have been made off of a few dollars invested right close up to each of our two fields of operation, with nothing like so good a prospect to start with. We are going to operate in what we regard as two of the richest, safest, and surest oil fields in the West—the Cleveland field and the Coweta-Stone Bluff vicinities.

THINK

of the millions and more barrels of oil produced on the 80 acres cornering on our Cleveland lease on the northwest.

THINK

of the millions of dollars made within the past six months off a 640-acre tract in the Stone Bluff field near to the 640-acre lease in which you have an opportunity to hold an interest.

THINK

of the 120-barrel flowing well three-quarters of a mile north of this Coweta-Stone Bluff lease.

THINK

what it means to have an interest in this mighty industry now making millions for the investors.

Our Cleveland Field

Our 120-acre Cleveland lease lies exactly 2½ miles south of Cleveland. There are

Wells to the north of it.
Wells to the south of it.
Wells to the east of it.
Wells to the west of it.
Wells to the northeast of it.
Wells to the southeast of it.
Wells to the southwest of it.
Wells to the northwest of it.
Wells a few feet from it.
Well known wells.
Wells all over Cleveland.
Wells—not wildcat prospects.

Wells in every quarter section between Cleveland and our lease.

Wells in five different sands.

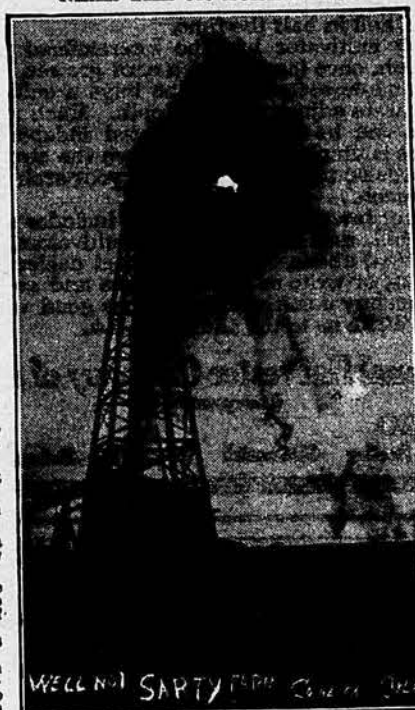
Good, dependable wells in three sands.

Three good chances for a GOOD well in every hole.

Three wells in three sands right up close to the N. W. corner of our section.

More than 800 wells within five miles of it.

A well was brought in on the 80-acre tract cornering on this lease to the northwest from which the Cleveland Leader reported 15,000 barrels a day production and the Tulsa World 10,000 barrels a day. It could not be gauged because it overflowed tankage and the creek had to be dammed to hold the oil.



The Tulsa World, Coweta Star, Wichita and Enid papers and various others give an account of this immense well, near this 640-acre lease. A 150-barrel well was brought in April 19th nearby. Every day's oil and gas news adds enormously to the value of this property.

"The Oil Business Waits For No Man. Act Today"

This company is incorporated by men who believe that through the exercise of sanity and business caution the oil business can be conducted in a safe and sane manner; that it will yield substantial returns on every dollar put into it and enrich the investors as no other business undertaking. We do not promise you a million dollar return on a \$100.00 or a \$1,000.00 investment, but we do promise you a square deal.

Capital stock only \$60,000.00, divided into 6,000 shares, selling today at \$25.00 per share, subject to advancement without further notice. This stock will undoubtedly be advanced to \$50.00, \$100.00 or more according to developments. Every dollar netted this company on stock sales will be expended in the acquisition of valuable oil equipments and properties and actually drilling and equipping wells.

Your check by return mail will entitle you to stock at the above quotation, or, in case of prior sale or advancement in price, your money will be refunded.

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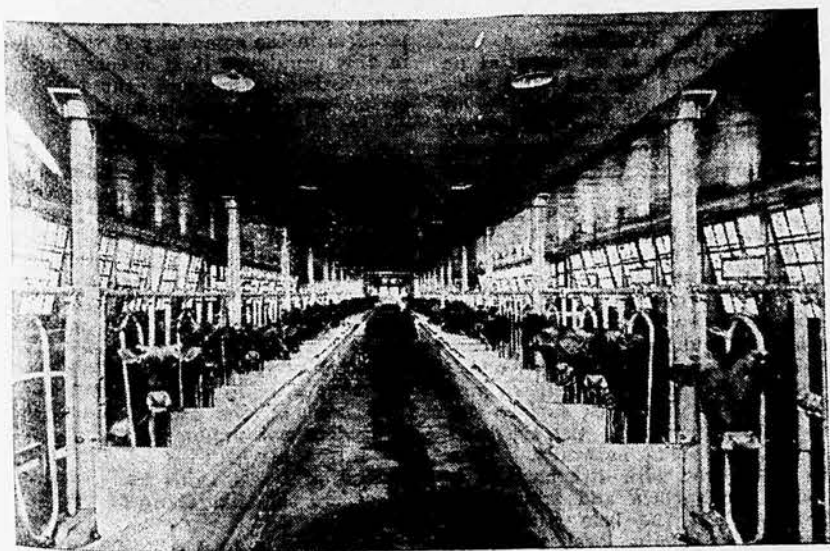
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CURRY PRESERVER, a carbolineum oil with over a quarter century quality record, will insure your Lumber, Silos, Shingles, Fence Posts, etc., against Rot and Decay. One application of CURRY WOOD PRESERVER (a boy can do the work), will give longer life to your Lumber at less cost.

ADD TO YOUR FARM PROFITS BY REDUCING YOUR EXPENSE.

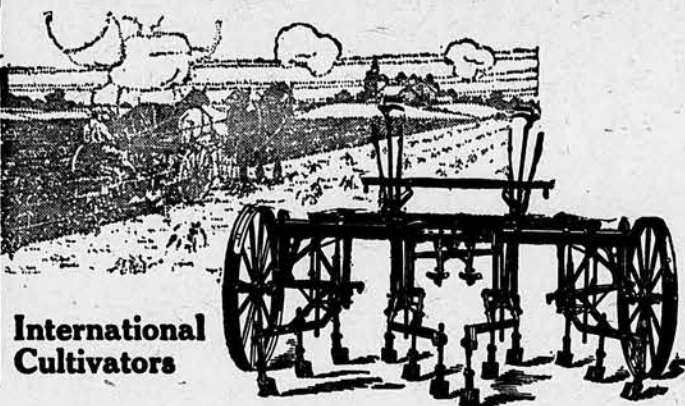
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Mail One Dollar for prepaid large sample (enough to preserve about a hundred feet), also full directions, price list and useful, interesting literature. Complete particulars including list of uses Free. CHAS. C. CURRY & CO., 2145 RAILWAY EXCHANGE BLDG., ST. LOUIS, MO.

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ARE you farming large fields of corn? Is labor scarce? Do you have to pay high wages for it? Do you ever have backward seasons when every minute of good cultivating weather is precious? If you have any of these conditions you need an **International two-row cultivator**. With it, one man can do as much work as two without it, and in half the time.

The two-row cultivator has the **International** parallel gang movement which, once familiar to a corn grower, always sends him back for an **International** when he buys a cultivator. Each gang has a separate adjustment for depth. Each gang, or each pair of gangs, can be raised or lowered independently. The clearance space is unusually high, because the strong U-section steel frame needs no truss. You change your arch widths without using a wrench.

The full line of **International** cultivators includes walking, combination, side-hill, and riding one-row cultivators, besides the two-row described above. Ask your local dealer to show you these cultivators, or write us for catalogues and complete information. Do not buy a cultivator almost as good when you can get the best. Write us to the address below.

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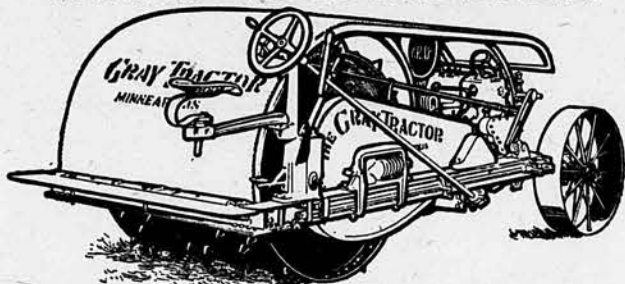
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Highest Quality Throughout

BUILT for those farmers who know, or those who are willing to learn, the value of the best obtainable in farm machinery. The Gray sells on its record for economical farm work of the widest range.

Model "A" 20-35 H. P., Weight 8,000 lbs.—\$2,150
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Auto-Oiled Windmill

ALL WORKING PARTS INCLOSED

and flooded with oil from the supply in the gear case, which needs replenishing only once a year.

Put your old Aermotor wheel and vane on this self-oiled motor, and have an up-to-date outfit at small cost.

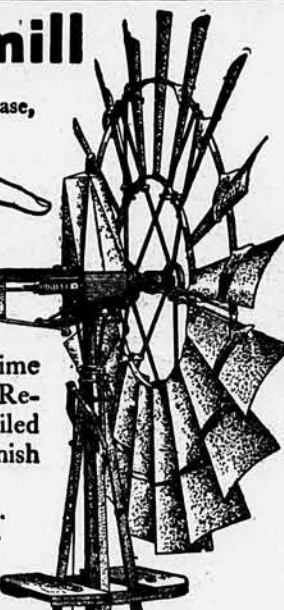


This helmet keeps out rain keeps out dust keeps in oil

Don't waste your time climbing to oil an old mill. Replace it, on your old tower, with an Auto-Oiled Aermotor which will last you a lifetime and furnish you an abundance of water.

IT NEEDS ATTENTION ONLY ONCE A YEAR.
Write for Folder-Hanger. It tells all about Auto-Oiled Aermotors and Easy-To-Build-Up Towers.

AERMOTOR CO., 1112 S. Campbell Ave., CHICAGO



MENTION KANSAS FARMER WHEN YOU WRITE.



CORN PLANTING DATE

THE question as to the proper date for planting corn is frequently asked. Last week we were asked if the early planted corn did not usually prove more successful than that planted later. The man who asked this was not a farmer, but seemed to have the idea that corn should be planted at the earliest date possible. P. H. Ross, agricultural agent of Leavenworth County, told us recently that since he had been working in that county the early planted corn had been more successful. This covers a period of three years, but might not hold good for a longer period of time.

If seasons and climatic conditions generally were always the same it would not be difficult to establish a definite planting date. Corn does not start and grow vigorously until the soil becomes thoroughly warm. This does not occur the same date each season and may be different in two fields on the same farm. This, because some soils warm more rapidly than others. The rule the Indians gave was to plant corn when the oak leaves were as large as squirrel ears. The leafing out of these deep-rooted trees is probably a fair guide as to the warmth of the soil.

The locality, of course, must always be considered. In Northwestern Kansas, for example, the average date of the latest killing frost is May 10—almost a month later than in the extreme southeastern part of the state where the average date is April 15. The fact that killing frosts have occurred in Southeastern Kansas as late as May 10, shows the possibilities of seasonal variations.

With average conditions there is a period of perhaps three weeks during which corn may be planted with equal chances of success. It occasionally happens, however, that very early or very late planting will be the best owing to some peculiarity of the season which cannot be foretold. A successful Clay County farmer told us he considered it a wise plan to plant some corn early every year. According to the observations of C. C. Cunningham of the Kansas Experiment Station, the best time to plant corn in the northern and north-eastern part of Kansas, is from May 1 to May 20, while in Southern Kansas it can be planted with good results during the last three weeks of April.

Those who are growing late maturing varieties must plant earlier, planting than those growing earlier maturing corn. The condition of the soil and seed bed are always important factors. In Central Kansas where there is not so much wet weather during the springtime as in Eastern Kansas, the soils generally will be warm enough for corn a little earlier in the season. In this section and farther west shortage of moisture is more apt to be a limiting factor, and for that reason it is desirable to plant corn at the earliest safe date.

The planting date for kafir and the other grain sorghums is affected by the same conditions as affect corn planting. These crops are more susceptible to cold and wet soil, and therefore cannot be planted safely as early as corn.

The maps on another page of this issue, giving the average date for the last killing frosts in the spring and the latest date killing frosts have occurred, will be of value in determining the proper date for planting.

Trees for Windbreak

A good windbreak is an essential on every prairie farm. It not only adds beauty to the farm by the addition of trees, but is also beneficial in evenly distributing the snow, which would otherwise form drifts in the yard and feed pens in the winter.

For the central and western sections of the state red cedar, Austrian pine, Scotch pine, and Chinese arbor vitae are recommended by Charles A. Scott, state forester. These trees should be planted not later than April. Stock 12 to 15 inches high should be used.

First dig a hole 18 inches deep and 2 to 3 feet in diameter, suggests Professor Scott. Fill it up with surface soil until it is 10 inches deep. Set the trees and spread the roots naturally. Then fill the roots over with dirt until it is level with the surface and tramp the dirt firmly. Fill the hole with loose soil until it is again level with the surface.

To avoid injury from the dry winds, protect the stock by placing box boards or shingles on the south and southwest

sides of the trees. The roots should not be exposed to the air in planting. To avoid this, keep the roots covered in a thick puddle.

Sufficient cultivation to keep down weeds is necessary the first year. Once established, the trees recommended are the hardiest that grow. Their leaves will burn as readily as ordinary dry leaves, so that precautions should be taken against fire. These trees when planted in the hit-and-miss fashion, 10 to 12 feet apart, will in a few years afford good protection from the wind and snow. They develop branches near the ground, and retain their foliage through the year. Trees that do not branch near the ground allow the snow to blow under them, and drift on the leeward side.

Disking Before Plowing

Disking land before plowing is by no means general. In a recent drive of forty or fifty miles we could not help noting how few fields were being disked in advance of the plow. There is no plow made that will pulverize the soil to the bottom of the furrow. By the use of the harrow and disk a nice seed bed can be made on top but at the bottom of the furrow there will be clods and air spaces. The later the plowing is done, the more need for having all the soil turned over in a proper state of tillage. The roots of plants cannot feed on soil unless it is reduced to fine particles. Plants take all their food in liquid form. Every soil particle is surrounded with a film of water, and the more numerous the particles the larger the amount of plant food available. The fertility contained in the cloddy soil at the bottom of the furrow can be of little use to the plant.

A good disking in advance of the plow will overcome this condition. The soil will be in good tilth as deep as it is plowed and the roots of the plants will find a much more suitable environment. The earlier this disking work can be done, the better, but even when the plowing has been delayed until late in the season the time spent in disking will be of sufficient value to warrant its being done. The difference of a day or two in the date of planting the crop will be more than overcome by having the whole seed bed in a proper state of tillage.

Hessian Fly Damage.

Through a vigorous co-operative campaign Leavenworth County has controlled Hessian fly damage. It is true, this is not a big wheat county, but some is grown. A few years ago the Hessian fly was getting so bad that it was making wheat a most uncertain crop. About that time the county farm bureau was organized and Mr. Ross, the agricultural agent, at once began to organize the forces of the county to control the damage done by this serious pest.

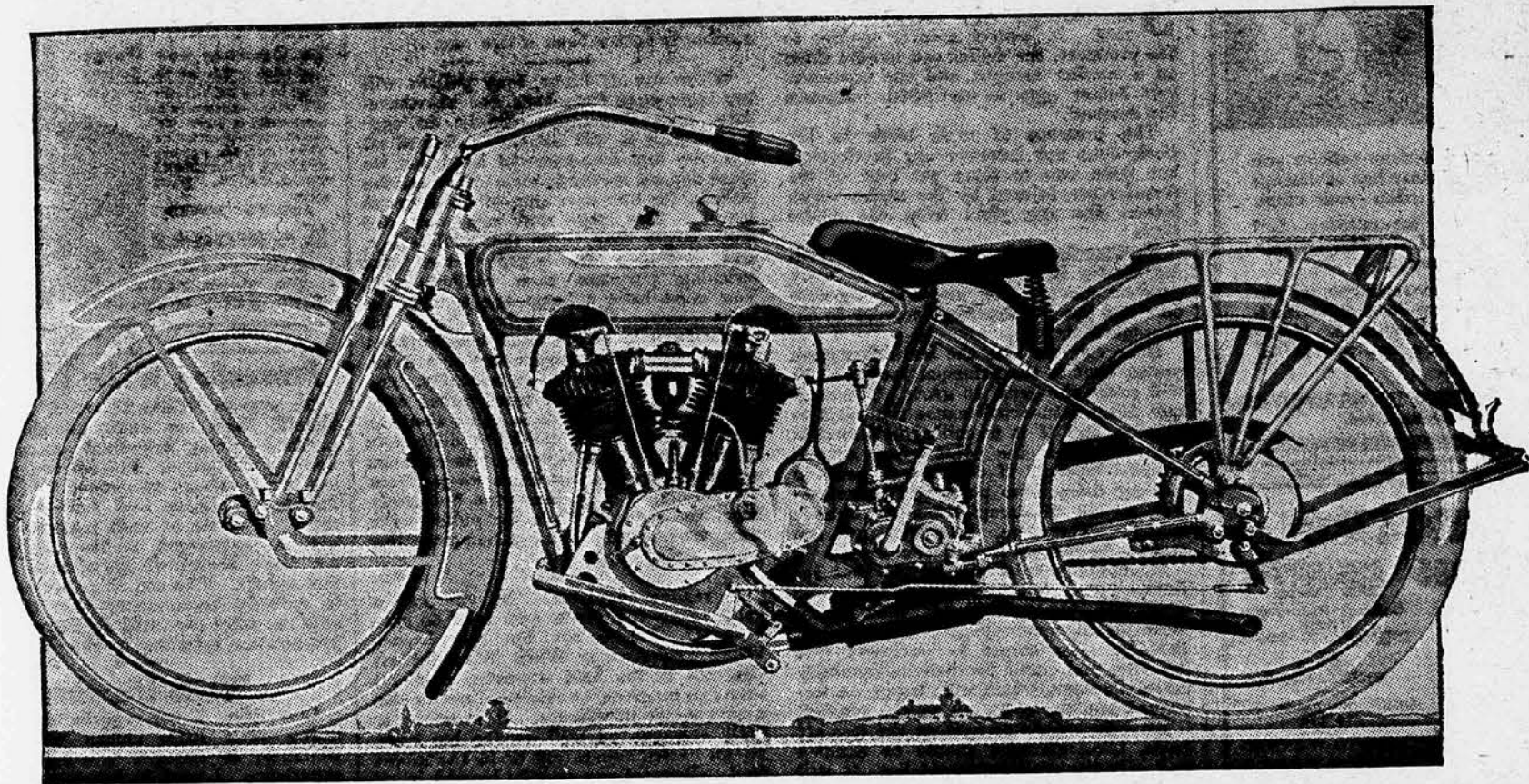
This year there is a wide distribution of the Hessian fly, but in this county little damage is being done. There are very few fields in which any evidence of the fly can be found. In some fields a very few eggs are being laid but not enough to result in any damage. We speak of this now because we believe that where the damage is increasing the wheat growers will have to attack the problem in the same way it was handled in this country. It is a community or neighborhood affair and cannot be taken up successfully by individuals.

Bogus Rape Seed

Dwarf Essex rape is the only variety valuable as forage. According to the Federal Department of Agriculture, 200,000 pounds of turnip rape seed has been imported from Argentina and Japan. This is being sold over the country as forage rape. It is not at all suitable for this purpose in localities where the Dwarf Essex rape is commonly grown. The seeds of this turnip rape are smaller and have a more deeply pitted surface than seed of the Dwarf Essex. The plant does not produce a definite stem, the leaves all growing at the surface. Instead of being thick and fleshy, the leaves are thin like those of the garden turnip.

Purchasers of rape seed would do well to examine it carefully and if not sure it is the proper variety they should send samples to the experiment station at Manhattan.

This Motorcycle Free!



**JOIN OUR MOTORCYCLE CLUB AND GET A MOTORCYCLE
IT'S EASY TO WIN AND YOU MAKE GOOD WAGES BESIDES WHILE WORKING**

We pay you liberally IN CASH for the work you do and over \$500 in cash and prizes will be awarded. Write us today about it. IT COSTS YOU NOTHING TO ENTER



Charles Erbert,
Ellis, Kan.
Winner of Motorcycle
in second contest.



C. S. Kelley
Horton, Kan.
Who won Motorcycle
in the contest which
closed March 13, '15.

Read These Letters From Winners of Other Motorcycles We Gave Away

OKLAHOMA BOY WON EASILY.

Harvey Ferril, of Amorita, Okla., was the winner of the motorcycle given away February 13, 1915. He secured only 141 subscriptions and was the highest, winning a \$275 machine. Here is what he wrote:

Manager Motorcycle Club—Dear Sir: I received my motor today and like it fine. It is just like you said it would be and I think if any person wants to deal with honest men, deal with Kansas Farmer. I will send you a picture of my motor and me before long.—HARVEY FERRIL, Amorita, Okla., March 13, 1915.

TOOK ONLY 110 SUBSCRIPTIONS.

E. B. Freedy, of Richland, Kan., won the Motorcycle in the contest which closed February 28, 1914, by securing only 110 subscriptions, nearly all for only one dollar. He was the highest, with only \$106.50. Think of it! He got a machine that sells everywhere for \$260, but he had the most subscriptions and the most points, and won. Here is what he says:

Manager Kansas Farmer Motorcycle Club: I received the Motorcycle, and it is sure a dandy. It is easy to handle. I have not found a place it won't pull. I would advise every boy to get busy on the next contest, for it is easy to win and everything is straight.—E. B. FREEDY, Richland, Kan.

HE LIKES HIS MACHINE.

Manager Kansas Farmer Motorcycle Club—Dear Sir: I am writing to let you know I received the first prize Motorcycle and sure am pleased with it. It sure is a dandy. It was worth working for, and I also say the way you managed the contest was sure on the square, and I think others who may enter one of your contests will say the same, and I hope those who enter one of your contests will win out as easily as I did.—C. S. KELLEY, Horton, Kan., March 29, 1915.

PERLE TILLEY, RANSOM, KANSAS, IS MORE THAN PLEASED.

Manager Kansas Farmer Motorcycle Club: I received the Motorcycle yesterday and I am more than pleased with it. I have ridden it about fifty miles. I want to thank you and the company for the machine and the promptness in sending it to me. The contest was carried on absolutely fair and you did everything that you said you would do. My winning has caused great enthusiasm here among the young folks, and everyone thinks my machine is great. I am going to get my picture taken with the machine soon and I will send you one. I may take a trip east this summer and if I do I will sure stop and see you. Again thanking you for your honesty and kindness to me, I am, yours truly—PERLE TILLEY, Ransom, Kan., May 12, 1915.



Jos. Muekenhauer Jr.,
Paxico, Kan.
Winner of Motorcycle
in first contest.



Clifford Jerome
Corns, Kan.
Winner of Motorcycle
in the contest which
closed Dec. 31, 1914.

Do You Want a Motorcycle?

A MACHINE THAT WILL GIVE YOU MORE PLEASURE THAN ANYTHING ELSE YOU COULD OWN, AND AT THE LEAST EXPENSE. YOU MIGHT JUST AS WELL HAVE ONE AS NOT.

We have given away nine Motorcycles recently that have been won with far less dollars in subscriptions secured from others than it would take in dollars to buy the machine of a dealer. This is the easiest and best way to get one. Send us your name and address and we will tell you all about it, free of cost, and this will place you under no obligation to us whatever. There never was a time when Motorcycles were so valuable or when so many were owned and ridden. You will find use for one every day. Having a Motorcycle to ride puts you many minutes closer to your work and to town and you can go many miles and come back on a Motorcycle in a remarkably short time. It will pay you to find out all about our easy plan whereby nine sons of farmers each won one of these Motorcycles, and won them easily, just working during spare time. Send in your name and address today on the blank for the next campaign, which is just starting. You have an opportunity here that you can make worth a good money dollars to yourself if you will only take advantage of it. Someone is going to get this Motorcycle easily and make money besides. Will it be you? It might just as well be you as any one, and no harm will be done in trying.

FILL OUT THIS FREE ENTRY BLANK AND MAIL TODAY

MANAGER KANSAS FARMER MOTORCYCLE CLUB,
625 Jackson Street, Topeka, Kansas.

Dear Sir:—I desire to enter your Motorcycle Club. Please send me free of cost the free premium and the free outfit and your special easy plan to get subscriptions fast with full information about the prizes and contest, and tell me how I can win the \$265 Harley-Davidson Motorcycle and earn good wages during spare time.

My Name

Post Office State.....

Street or Rural Route, or in Care of.....

We are ready to turn over to you in cash and prizes what we would pay others for doing this work for us. You can't lose under our plan and you have everything to gain. If you have any spare time whatever, by all means write and find out all about our plan. You can see what the others say who have won Motorcycles. They were glad they sent in their names. We had never heard of any of them before and none of these winners had ever taken a subscription before or done any work of this kind. Previous experience is not required, and you have just as good an opportunity as any one else to get this \$265 Harley-Davidson Motorcycle for yourself. Will you try? It costs you nothing to enter and we send the few necessary supplies absolutely free of cost. You do not even have to be a subscriber to Kansas Farmer.

The best thing to do is to write at once and we will send you a complete description of the Motorcycle and the other big prizes to be given away—\$500 in all—together with our easy plan to secure subscriptions rapidly and make good wages weekly during spare time. This costs you nothing and you will be under no obligations to us whatever if after reading about the plan you decide not to go ahead. If you would like to own a fine Motorcycle like the one shown here, send in your name and address at once and begin getting subscriptions right away.

You Get Paid Every Week

You do not have to wait to be paid for the subscriptions you secure. You get paid every week and under our plan it will be easy to get subscriptions. This is the best time of the year to do this, and if you write at once you can get in at the start. You know this paper and the other campaigns show our plan to be to your advantage.

You Won't Know How Easy It Is Until You Start

The campaign starts right away. A certain number of points will be given with subscriptions secured for our paper, for which you will be paid, and the boy or man who has the highest number of points to his credit by 6 p. m. June 17, 1916, will be awarded the \$265 Harley-Davidson Motorcycle. The second highest will receive \$75.00 in cash. The third highest will receive a \$30.00 Phonograph Outfit. The fourth highest will receive a \$30.00 Gold Watch, and the fifth and sixth highest will each receive a \$45.00 College Scholarship, and the seventh highest a \$15.00 Gold Watch. In case of a tie, prizes of equal value will be awarded. Besides this, you are sure to be paid in cash for each subscription you secure, as stated above.

Big Offer Extra To All Who Enter At Once

DON'T WAIT. Send in your name and address on the blank and begin making money at once. To all those who send in their names within twenty days, a free premium will be sent with the free outfit and full information about the contest and description of the prizes, also names and addresses of previous prize winners and a letter telling you just how to proceed.

H-A-I-L

won't spell ruin for your hopes
of a prosperous season if you
insure your crops in the

**Hartford
Fire
Insurance
Company**



Under one of these policies you
are insured against loss or damage
if a hailstorm ruins your crops.

Don't delay. Insure today. Let
the Hartford do the worry-
ing this season.

Ask the nearest agent to tell you
about the HARTFORD and the Hart-
ford way of settling losses. If you
don't know our agent, we will tell
you who he is.

HARTFORD FIRE INSURANCE CO.
HARTFORD, CONN.

PERFECTROLA TRUE IN TONE



**BEST TALKING
MACHINE FOR
THE PRICE**

Cabinet-Mahogany
Finish
18 1/2 x 16 1/2 x 18 Inches

NO. 30
PRICE, \$35.00

Other machines, \$15
to \$75

AGENTS WANTED
WRITE TODAY

WM. ENOS KING CO.

TRADERS BLDG. - KANSAS CITY, MO.

Sweet Potato Plants

\$1.15 per 1,000; and all other kinds, Cab-
bage, Tomato, etc. Send for our list.
HAYES SEED HOUSE, Topeka, Kansas

CASH OR BAGS

Don't throw them away. Save them and
ship to us. We'll pay you HIGHEST
MARKET PRICE. Get your neighbor to
ship his bags with yours. Established 1870.

FULTON BAG & COTTON MILLS
590 S. Seventh St. St. Louis, Mo.

HOME CANNERS

Cut your living expense and make ready
money besides, with our patented, econom-
ical, scientific heating outfits. Prices very
reasonable. Catalog free. **HOME CANNER
MANUFACTURING CO., Alexandria, Minn.**

NEW FEATHER BEDS ONLY \$5.40

8 POUND FEATHER PILLOWS \$1.00 PER PAIR
New, clean, odorless, sanitary and dustless feathers. Best
tickling. Satisfaction guaranteed. Write for FREE catalog
and our wonderful Free Offer. Agents wanted. Address
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OTTAWA, KANS. CATALOG
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ROPP'S NEW CALCULATOR

A BOOK OF GREAT VALUE TO EVERY FARMER

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

KANSAS FARMER
TOPEKA, KANSAS

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



SWAT THE ROOSTER

SWAT the rooster on May 20th and
sell infertile eggs during the sum-
mer. It insures greater profits to
the producer, the dealer can handle them
on a smaller margin, and the consumer
gets better eggs to use which increases
the demand.

The presence of male birds in the
flock does not increase egg production,
but from two to three per cent of the
females are injured by the males which
lowers the egg yield from the entire
flock.

Feeding the male birds after the breed-
ing season is a useless expense. Many
produce dealers pay more for roosters
on Swat the Rooster Day in order to en-
courage their sale.

If an egg contains the fertilizing germ
proper heat is the principal factor which
will cause the germ to grow. The sum-
mer temperature will cause the germ to
develop, and if it is chilled or killed in
any way, it is the point where decom-
position begins. If there is no germ in
the egg there is no point for decomposi-
tion to set in except from an outside
source. Therefore, infertile eggs are
more satisfactory for all concerned.

It should not be understood that in-
fertile eggs should be kept longer or
cared for improperly, for that would
mean no improvement over old methods.
Infertile eggs should be marketed just
as often and cared for just as carefully
as fertile eggs, which will insure an im-
proved product going on to the market.

All eggs should be sold on the loss-off
basis, i. e., all eggs should be candled
and only the good eggs paid for. It will
be seen that ten dozen infertile eggs, all
good, will bring more money than twelve
dozen fertile eggs if three dozen are
candled out, being bad.

If you have a valuable male bird
which has proven to be a good breeder,
don't sell him, but place him in a pen
with half a dozen of the best hens and
late hatching may be done from this pen.

Don't keep any males in the flock dur-
ing the summer.—Missouri Experiment
Station.

The early chicks are doing finely;
couldn't be any better weather for grow-
ing stock.

There is still plenty of time to raise
as many chickens as you can take care
of.

There is no longer an exclusive poul-
try journal in Kansas, and poultry
fanciers should do more advertising in
the KANSAS FARMER.

The Missouri State Poultry Board
have elected Prof. C. T. Patterson as
director of the Mountain Grove Experi-
ment Station, in place of T. E. Quisen-
berry, resigned. Professor Patterson
was formerly pathologist of the institu-
tion, and is the right man for the place.
Missouri does more for poultry than any
other state in the Union.

Some of the poultrymen are already
beginning to cut the prices on eggs for
hatching, and a good chance is open for
people to get a start in pure bred poul-
try at low rates. The Modern Poultry
Farm, R. R. 7, Topeka, have already re-
duced the price on a dozen or more
varieties to one dollar per setting, and
it is good stuff too.

Oats in any form are good for chickens
of all ages. Sprouted oats, scalded oats,
soaked oats, rolled oats, pinhead oat-
meal, are all good chicken feed, and
should be fed more freely than they are.
The great success of the English poul-
trymen with their chickens is attributed
to the fact that they feed an unusual
quantity of oats to their fowls.

Missouri has appointed May 20 as
"Swat the Rooster Day," when all un-
necessary roosters should be disposed of,
either killed for home consumption or
sold to the butcher. While May 20
seems a little early for a general killing,
it is none too early for some roosters.
We would kill them any old day, just as
soon as they are no longer useful. By
designating a certain day for getting rid
of the surplus roosters, a more concerted
action is attained, just like a rabbit
drive or a wolf drive on a certain date
gets better results than promiscuous
hunting. But don't be afraid to swat
the rooster before the designated day if

it is handier or more convenient. As
soon as you are done with him, a dead
rooster is better than a live one.

While we all know that pullets will
lay more eggs than hens and are there-
fore more profitable, simply as egg-
layers, still it will not do to discard all
the one- and two-year-old hens, for we
must depend on them, rather than on the
pullets, for our new crop of chicks next
season. The eggs that hens lay are
much larger than those that pullets lay,
and therefore are much better for
hatching purposes than pullets eggs.
You must have a large egg to hatch a
large chick. Besides being larger, the
chicks from hens' are much harder than
those from pullets' eggs and are much
more liable to grow up to maturity. The
vitality of the chicks from pullet eggs
is often not sufficient to raise them to
full growth. We noticed the difference
in size this season between the eggs we
got from our hens and those we got from
our pullets. The former were uniformly
large and regular, while the pullets eggs
were very small. We set but very few
of the pullets eggs.

A reader inquires: "Is charcoal a
good thing for fowls and how do you
feed it? Which are the best layers,
White Leghorns or White Wyandottes?
Charcoal is the best cleansing medicine
that can be given to chickens, and is also
a preventive of disease. It is good for
little chickens as well as the big ones.
It can be fed separately or in the mixed
feed. Charcoal can now be bought in all
poultry supply houses in different sizes
suitable for chicks and for fowls. Ashes
from wood fires may be thrown into the
poultry yard and the chickens will pick
out the charcoal, or a few ears of corn
can be put in the oven and charred then
broken up and fed to the hens. The
Leghorn family have the reputation of
being the best layers of any breed, and
probably head the list as spring and
summer layers, but take it all the year
around, winter and summer, the Wyand-
ottes will not be far behind them in egg
production, and being larger and
plumper, are much better table fowls.
The Leghorns are a very active breed
and are great rustlers, but must have
free range to do well. They can't stand
confinement like the larger breeds.

A reader inquires the best way to
raise young turkeys. We have had no
experience with turkeys ourselves, but
give the opinions of successful turkey
raisers. On one point all turkey grow-
ers agree, that no sloppy food must be
given the young birds. In a natural
state the turkey chicks feed largely
upon flies, bugs, grasshoppers, worms,
ant eggs, etc., and if watched on a bright
day will be seen to be constantly chas-
ing the flies and bugs about the mea-
dows, alfalfa fields and woods. Berries
and seeds make the variation. The first
meal for young turks should be hard-
boiled eggs and stale wheat bread dipped
in milk, the milk squeezed out and both
crumbled fine and seasoned with black
pepper. This feed may be continued for
two or three weeks, and now and then
a variation to cottage or Dutch cheese
in place of the eggs. Let it be remem-
bered that the egg is a substitute for
insects, which the young turkey has in
its wild state; so as opportunities open
for the turks to get insects, the egg
should be omitted. Dry corn meal should
not be given to them, nor wet meal in-
sufficiently swelled. If the meal swells
in their crops, death is almost certain.
The best way to feed corn meal is in the
shape of a johnnycake, crumbled up fine.
After the young turks are three weeks
old, omit the eggs and give meat scraps
and ground bone. Clean water or milk
should be before them all the time. Be
sure and see that the turkey mother
and young are free from lice, for more
young turks die from this than from
any other one cause. Always see that
the young turks have a place to run
to when a rainstorm comes up, for if
they get wet they are apt to get sick
and die.

Check Poultry Enemies

The time of year is close at hand when
two of the worst enemies of poultry
will make their appearance—hot weather
and vermin. No one can guarantee that
the season's hatch will be saved, but
there are precautions the use of which

SANITARY INDOOR ODORLESS TOILET FREE

TO TRY IN YOUR HOME
No Water—No Sewer

Saves Time, Preserves Health, Does away
with Expense, Filth, Exposure, Flies and bad
Odor of Out House and Cesspool. Great
Convenience for old, sick and children. No
more chambers to empty. A real necessity
in Homes, Hotels, Halls, Schools, Stores,
Churches and Communities without sewers.

Costs 1 Cent a Week

To Operate per Person
Absolutely Odorless and Sanitary

Place in any Room, Hallway or Closet
We want one person in every
community to whom we
can direct new purchasers
Take Advantage of our
SPECIAL 30-DAY FREE
TRIAL OFFER. Write
today.

AGENTS WANTED

Kawneer

Cabinet Co.

732 MASS. BLDG.

KANSAS CITY, MISSOURI



ADVERTISEMENT.

Preventing White Diarrhea

To prevent White Diarrhea, treatment
should begin as soon as chicks are
hatched—giving intestinal antiseptics to
destroy the germ. Not infrequently we
see rank poisons recommended, such as
Mercuric Chloride and Antimony Arse-
nate. The use of such remedies should
not be encouraged, as the average per-
son has little knowledge of their danger-
ous nature. The use of poisonous drugs
is entirely unnecessary, for there are
safe remedies that will destroy the germ,
yet are not injurious to the chick.

White Diarrhea

Dear Sir: I see reports of so many
losing their little chicks with White
Diarrhea, so thought I would tell my
experience. I used to lose a great many
from this cause, tried many remedies
and was about discouraged. As a last
resort, I sent to the Walker Remedy Co.,
B. L. 8, Waterloo, Iowa (formerly lo-
cated at Lamoni, Ia.), for their Walko
White Diarrhea Remedy. I used two 50-
cent packages, raised 300 White Wyand-
ottes and never lost one or had one
sick after giving the medicine and my
chickens are larger and healthier than
ever before. I have found this company
thoroughly reliable and always get the
remedy by return mail.—Mrs. C. M.
BRADSHAW, Beaconsfield, Iowa.

Don't Wait

Don't wait until White Diarrhea gets
half or two-thirds your chicks. Don't
let it get started. Be prepared. Write
today. Let us prove to you that Walko
will prevent White Diarrhea. Send for
50-cent box on our guarantee—your
money back if not satisfied. We were
formerly located at Lamoni, Iowa, and
parties recommending our remedies in
the papers sometimes give our former
address. To avoid any mistake or delay
when ordering Walko White Diarrhea
Remedy and Chick- tonic, be particular to
address, Walker Remedy Co., B. L. 8,
Waterloo, Iowa.

BUSINESS STATIONERY

At the prices quoted herewith you can-
not afford to use anything but printed
BUSINESS STATIONERY. Write for
samples.

LETTER HEADS—
8 1/2 x 11 inches. Bond paper. White. 500 for \$2.50.
1,000 for \$3.00, additional 1,000 \$1.50. If you wish
ruled stock, add 75c per 1,000.

ENVELOPES—
No. 1, 6 1/2 x 9 1/2 inches. Commercial size. White. 500 for \$2.00.
1,000 for \$2.75, additional 1,000 \$1.75.

ENVELOPES—
No. 2, 6 1/2 x 9 1/2 inches. Commercial size. White. 500 for \$2.25.
1,000 for \$3.00, additional 1,000 \$1.75.

ENVELOPES—
No. 6 Special Addressed Envelopes. 500 for \$1.75.
1,000 for \$2.25, additional 1,000 \$1.25.

BUSINESS CARDS—
Round corner, 2 1/2 x 3 1/2 inches. No. 88: 500 for
\$2.00, 1,000 for \$2.75, additional 1,000 \$1.75. These
can be supplied in square corners if you wish.

The following items are put up in pads
of 100 if you desire, at no extra charge:

LETTER HEADS—
Special Packet, size 6 1/2 x 9 1/2. Ruled. White. 500 for
\$2.25, 1,000 for \$3.00, additional 1,000 \$1.50.

STATEMENTS—
No. 2, Regular size, 5 1/2 x 8 1/2 inches. Ruled. White.
500 for \$2.35, 1,000 for \$3.00, additional 1,000 \$1.50.

STATEMENTS—
No. 1, Special, size 5 1/2 x 8 1/2 inches. Ruled. White.
500 for \$2.25, 1,000 for \$2.75, additional 1,000 \$1.25.

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No. 2, size 7 x 8 1/2 inches. Ruled. White. 500 for
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No. 1, size 4 1/2 x 8 1/2. Six ruled lines. White. 500
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All prices are quoted delivered to you
at your home address, prepaid. For this
reason we ask remittance with order.

KANSAS FARMER
TOPEKA, KANSAS

will help materially in saving the chicks. Proper feeding is essential, but many well fed fowls succumb to filth and vermin.

Though cleanliness should always be practiced, the warmer the weather the greater the need for thoroughness in this particular. The houses should be cleaned and disinfected often enough to keep the presence of disturbers at the minimum. Other conditions being equal, a clean, well ventilated chicken house will do much toward promoting health in the flock.

The drinking pans or troughs should also receive frequent and thorough attention. It is not enough to rinse them daily with cold water. They should be scoured and scalded. The generous use of soda in the scalding water will be very effective.

The use of air-slaked lime on the floor of the house after cleaning will act as a germicide, give the place a clean, healthful odor, and discourage insect pests. Reliable lice paint on roosts and nesting boxes is also an effective health agent. The straw in the nests should be changed often and the fresh nests sprayed with a good disinfectant.

It goes without saying the chickens should be watched and at the first sign of the presence of disease or insects should be given careful attention that the danger may not be spread.

Profit in Raising Guineas

Formerly hotels and restaurants served grouse, quail, and other wild game birds, but now due to the enactment of game laws, they are forced to find a substitute. According to Prof. W. A. Lippincott, the guinea fowl makes an acceptable substitute and is being used increasingly because of its similar taste.

Due to the small size of the guinea egg, the raising of guineas for egg production is not advised by Professor Lippincott. The guinea egg is classed as a second. However, if the demand for the wild game taste is to be satisfied, the production of guineas for the market should become profitable.

Especially is the guinea a source of profit when raised on the farm in small numbers, since the food that it eats in ranging over the farm is just waste food that probably would not be utilized otherwise. The guinea fowl does not stand confinement well, but on the farm where it can have free range the conditions are nearly ideal for this bird.

Guineas can be raised by use of incubators, but the method which proves most satisfactory is to use hens or, better yet, bantams for brood mothers. Then the wild nature of the guinea will be moderated and they can be cared for more easily.

Mortality of Young Chicks

A number of correspondents have been complaining of mortality among their young chicks, and want to know the cause and cure. So many things enter into the raising of chicks that it is difficult to tell why they die.

Some say a great number of their incubator chicks have died during the first ten days in the brooder from a looseness of the bowels, which is commonly known among poultrymen as white diarrhea. This trouble has been assigned to a variety of causes, among them being irregular temperature, lack of vitality in the breeding stock, improper feeding, and poor ventilation, not only of brooders, but also of the rooms in which the incubators are kept. With all these causes to choose from, it is difficult to say in any particular case, which one is the right one, unless one was on the spot to note the conditions of each case. When diarrhea is present it can be observed, and the best cure that has been found is to feed the chicks plenty of sour milk. One poultry expert believes that the food is an important factor. He fed several lots of chicks with different kinds of feed, and noted that the mortality was high in whichever lot received one of the grain mixtures. Careful examination showed that this feed contained a fairly large percentage of musty grain, particularly corn. The young chicks ate all the grains indiscriminately, and their lack of ability to detect wholesome from unwholesome foods was further tested by giving them rations which contained such substances as sawdust, coarse salt and granulated sugar. These materials were eaten as readily as the grains with which they were mixed. Indeed, the salt and sugar were always selected first, apparently owing to their bright appearance; but as a rule, the chicks did not appear to relish them.

When older chicks, hatched by hens, and also those taken from incubators and given to hens, were offered these same mixtures, it was exceptional to

find a chick that took over a grain or two of salt, sugar or sawdust. When musty grain was given to the older incubator chicks it was noticed that those which were eight or nine days old showed considerable discrimination in selecting the grain, while still older chicks refused even larger proportions of the musty kernels. This forces the conclusion that many of the deaths among young chicks are caused by musty food, although there is no doubt that faulty brooders, chills, overeating, improper ventilation and lack of vitality in the parent stock should all receive proper credit for their share.

Some of these causes are easy to detect, others are difficult. The feed should be examined very carefully, for owing to the high prices almost any kind of grain is ground up and sold as good feed. We find that we get a large proportion of cobs and chaff in our corn chop. When feed is found to be musty it should be returned to the dealer and pure feed demanded. It is evident that the older chicks can detect undesirable food, while the very young ones have not this faculty, and especially where they have no mother hen to guide them, should these youngsters be protected by giving them absolutely pure food. It is will not to feed them any grain for the first two weeks of their lives. Feed them a Johnnycake composed of corn meal, milk and infertile eggs for the first week; then pinhead oats or rolled oats the second week, and after that grains can be given them. They should always have plenty of grit and charcoal.

Save Your Chicks—Free

Send the names of five poultry raisers to The Wight Co., Box 18, Lamoni, Iowa, and they will send you a free sample of Chictone (a positive preventive for White Diarrhoea), enough to raise from 50 to 75 chicks. They will also tell you how you can get a full sized 50-cent box, absolutely free.—(Advertisement.)

Cards—Free

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

Constructive Stock Breeding

At the tenth annual meeting of the American Berkshire Congress, held in February, J. E. Dodge, a well known breeder, closed his address with the following concise statements:

"The most important thing that is necessary in constructive breeding is to know what you are breeding for and how to select and mate the right individuals when you see them.

"No man has made a great success of breeding up or fixing type or developing a class of animals that breed on and reproduce their good qualities, unless he has inbred, line bred or line out-crossed bred. The improvement of our domestic animals has come by their owners recognizing sports and so maintaining them that they have reproduced their good qualities.

"There are a few things absolutely essential for successful constructive breeding.

"First. Know what you are breeding for, whether pork, beef, mutton, speed or dairy products.

"Second. Know the kind of individual that is best fitted for the purpose.

"You would not think of selecting a Jersey cow if you were going to breed beef, or a hog of the razor-back type for meat production, or a draft horse to win a speed contest.

"Third. Know how to pick the best individual in your own herd and other herds.

"Fourth. Know how to cross them with blood lines that nick. Right here I want to say, learn how to cull and cull closely. It would mean success to many if they discard one-half their breeding stock and started fresh with the remainder, as they would have more uniformity of type and blood lines. The most important element in successful breeding is the sire. He is about ninety per cent of the herd. Many a man has made a reputation as a successful breeder by having one successful sire, and he may have gotten him by accident. If a man can breed a succession of great sires I would call him a constructive breeder. I call no man a constructive breeder unless he can improve the quality of his stock without calling on some one else for sires and dams.

"The last and very essential element of success is knowing how and feeding properly for the result you wish to obtain."

Paint not only adds to the attractiveness of the farmstead—it adds life to the surface which receives it.

Classified Advertising

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

HELP WANTED.

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

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

FARMERS WANTED—\$75 MONTH. MEN and women. U. S. Government jobs. Short hours. Easy work. Common education sufficient. Write immediately for list of positions now obtainable. Franklin Institute, Dept. J82, Rochester, N. Y.

FARMS WANTED.

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.

AGENTS WANTED

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

REAL ESTATE.

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

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

FOR SALE—FRUIT, POULTRY, DAIRY and general farms. Write for list. Chas. Schmieding, Shelby, Mich.

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

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

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

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

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

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

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

REGISTERED HOLSTEIN BULL, NINE months old; five of his dams averaged 106 pounds milk in one day, and eleven of them 30 pounds butter in seven days officially; \$100. Wisconsin Live Stock Association, Appleton, Wis.

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

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

BUSINESS CHANCES.

FREE FOR SIX MONTHS—MY SPECIAL offer to introduce my magazine, "Investing for Profit." It is worth \$10 a copy to any one who has been getting poorer while the rich, richer. It demonstrates the real earning power of money, and shows how anyone, no matter how poor, can acquire riches. Investing for Profit is the only progressive financial journal published. It shows how \$100 grows to \$2,200. Write now and I'll send it six months free. H. L. Barber, 431-28 W. Jackson Blvd., Chicago.

DOGS.

FOR SALE—SCOTCH COLLIE PUPS. Box 111, Inman, Kan.

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

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

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

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

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

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CHOICE WHITE ALFALFA HONEY—Two 60-pound cans, \$11; light amber, \$10. Single cans, 25 cents extra. Bert W. Hooper, Rocky Ford, Colo.

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BEAUTIFUL BUFF MINORCAS, LATEST standard breed, great layers. Eggs, \$3, fifteen. S. C. W. Leghorn and Pekin duck eggs, \$1, fifteen. C. H. Catt, Ft. Scott, Kan.

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BARRED ROCKS, AMERICA'S BEST strains. Yard eggs, fifteen, \$2; range, fifteen, \$1, \$2 per fifty, \$4 hundred. A. G. Hammond, Vinland, Kan.

WHITE ROCK EGGS REDUCED TO \$4.00 hundred, \$1 fifteen. Excellent show record, free range. Send for catalog. Nellie McDowell, Route 1, Garnett, Kan.

FOR QUICK SALE—BUFF ROCKS. Eight females and one male. Good show birds or breeders, well mated. Price, \$20. Favorite Poultry Farm, Stafford, Kan.

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BARRED ROCKS—SEVENTY-ONE pre- miums. Topeka, Manhattan, Clay Center, Denver, cockerel matings. Eggs, Pens 1 and 2, fifteen \$3, thirty \$5; Pen 3, fifteen \$2, thirty \$3.50. Miss Mattie A. Gillespie, Clay Center, Kan.

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DESTROY HOG LICE

LICE are common pests among swine, and vigorous and persistent treatment is required to eradicate them. They may be readily seen traveling among the bristles. The eggs, or "nits," are small white oval bodies attached to the bristles. Dipping does not as a rule destroy the vitality of these eggs. Swine should be dipped frequently in order to kill the lice that hatch out of the eggs after the previous dipping. These lice are blood-sucking parasites, and by biting the hog and sucking blood they cause a great deal of skin irritation. Furthermore, they act as a drain on the vitality of the hog, through the loss of blood which they abstract. When lousy the hog is usually restless and rubs on posts and other convenient objects. The coat looks rough and harsh. This pest is transmitted from one animal to another by direct contact, or by contact with infected bedding or quarters.

DIPPING HOGS

To free hogs from lice they should be dipped two or more times at intervals of about two weeks. Several dippings may be required before complete eradication is accomplished. Do not fail at the same time to clean and disinfect thoroughly the sleeping quarters. Cresol compound (U. S. P.) may be used for dipping and disinfecting. For dipping, mix in the proportion of two gallons to 100 gallons of water; for disinfecting, in the proportion of three gallons to 100 gallons of water. Although not always as effective as might be desired, coal-tar products of the kind ordinarily sold as stock dips are commonly used to treat hogs for lice. For use they are diluted with water in accordance with directions supplied by the manufacturers. Cresol compound and coal-tar dips may be purchased at the drug store.

Dipping vats are made of various materials, but the most durable is cement. The vat should be set in the ground at a convenient place where there is good surface drainage away from the vat. A suitable size for a vat in which to dip hogs is ten feet long at the top, eight feet long at the bottom, one foot wide at the bottom, and two feet wide at the top. It should be deep enough so that the hogs will be completely immersed in the dip and will not strike the bottom of the vat when they plunge. If possible, the vat should be located so that a 2-inch drain pipe may lead from the bottom of the vat to facilitate emptying and cleaning, otherwise it is necessary to pump or dip out the contents of the vat in order to clean it. Do not use old filthy dip, but clean and recharge the vat before dipping again if the dip has become very dirty or if it has stood a long time in the vat. The end where the hogs enter should be perpendicular and the entrance should be on a slide. The other end should slope gradually, with cleats to provide footholds for the hogs for emerging after dipping. A dipping vat is very useful wherever a large number of hogs are kept.

HOG WALLOWS

Some farmers favor hog wallows, others are strongly opposed to them. Filthy hog wallows are a source of danger. Hogs wallowing in or drinking contaminated water are likely to contract disease. However, there are many advantages to be derived from wallows. A cool bath is very soothing to a hog during the hot weather. It cleans the scurf from the skin and protects the hogs from flies. Crude oil, sufficient to form a thin layer on top of the water, may be poured into the wallow about every ten days. This will tend to keep the hogs free from lice and other skin parasites. If the skin becomes irritated from the oil, its use should be discontinued. Small quantities of coal-tar dip are sometimes added to the water in hog wallows, but there is an element of danger in this practice, as poisoning may result from the absorption of phenols by hogs which lie in the wallow more or less continuously.

On some of the larger hog farms concrete wallows are becoming popular. The cement hog wallow should be located in a shady place and made so as to contain from eight to ten inches of water. A two-inch drain pipe, as recommended for the dipping vat, should be placed in the bottom of the wallow to permit its being cleaned out.

RUBBING POSTS

In many cases a farmer is not financially able to build a concrete hog wal-

low or a dipping vat. If this be the case, the dip, properly diluted according to directions, can be applied with a spray pump or sprinkling can, or else rubbed on every part of the hog by means of a brush or a swab of cotton waste. Care should be taken not to apply the dip stronger than directed.

Another method of controlling lice is to tie gunny sacks or similar coarse cloths around a post and saturate the sacks frequently with crude oil. The sacks should be tied at a proper height so that the hogs may rub against them.

Swine can be raised when they are confined in limited quarters if the quarters are kept clean, but they will do much better and stay in better health if they have plenty of pasture. Divide the pasture into convenient areas, so that the hogs can be shifted from one pasture to another. This not only provides fresh pasture, but affords an opportunity to disinfect the pastures by plowing and reseeded or exposure to the sun and weather. Intestinal worms, which are rather common in swine, are contracted from feed, water, and ground which have been contaminated by the droppings from infected hogs. Frequent change of pasture is one of the best means of reducing worm infestation to a minimum. Hogs, however, should not be allowed to run at large on open range, as this favors the spread of hog cholera.

Self Feeder for Hogs

In a test to determine whether or not it is more profitable to feed hogs by the self-feeder method or by hand feeding, two lots of fall pigs were fed 103 days on corn, tankage, and skim milk on the O. A. Rodekohr farm of Madison County, Nebraska. During this period the self-fed lot gained 165 pounds a pig or an average of 1.6 pounds per day, costing \$5.19 per 100 pounds gain, while the hand-fed lot gained 151.3 pounds per pig during the same period or an average of 1.47 pounds, costing \$5.50 per 100 pounds gain. In other words Mr. Rodekohr could have raised twenty hogs with the self-feeder on the same amount of feed that it took to raise nineteen hogs by hand feeding. Other work of this nature will be carried on next winter. The tests are being conducted in co-operation with the county agricultural agent demonstrations of Madison County.

Prevention of Pig Scours

Scours in pigs is declared by one of Nebraska's prominent hog raisers to be more destructive to the swine industry of the state than hog cholera. The causes are overfeeding, change in feed, decayed feed, lack of exercise, or dirty water. Sometimes filth in pens and bedding is an additional cause when it is taken into the pig's system from the sow's udder or from the navel. The correction of these conditions is the first measure to be adopted. In case scouring has started, the sow's feed should be cut down to a small amount of oats or bran. When the trouble is corrected, the ration should be increased gradually.

Remedy for Stringy Brine.

Warm spring days often cause the souring of the brine in which meat is being cured that has been butchered the latter part of winter. The most common kind of souring shows itself in a string of white mold which floats near the surface and gives rise to the term of rosy or stringy brine. Such meat should be removed from the brine at once and be soaked in fresh water and be well scrubbed. The barrel in which it is contained should be thoroughly scalded. The meat may then be repacked and new brine be added. If thoroughly boiled the old brine may be used, but the new brine is safer and is considered almost as cheap.

The danger of spoiling may be reduced either by lessening the amount of sugar or by increasing the amount of salt.

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

REDHURST JERSEYS

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

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

PERCY LILL - MT. HOPE, KANSAS

FOR SALE—Three registered Jersey bulls, richly bred.

L. E. Pendleton - Dodge City, Kansas

When writing to advertisers, please mention Kansas Farmer.

Breeding Sheep Good Property

Spring lambs at \$13 to \$17, with a certainty of \$10 or better for them after the Easter trade, and the season for winter-fed lambs closing with values at \$11 to \$12, are conditions that make a farm flock of breeding ewes most attractive. Wool at 30 cents a pound adds to the attraction.

There are so many variations possible in handling a band of sheep on a farm that sheep breeding is one of the most interesting branches of the live stock business. A. L. Stockwell, of Larned, Kansas, who has had many years of experience in handling sheep and lambs, bought about 400 head of old discarded range ewes a year ago last fall. He sorted out 200 head of the best ones, which looked like they would raise another lamb, and bred them. The culls he sold. He kept the ewes and their lambs through last summer and fall, and put them all on feed in November. He sold them in January this year, and cleared something more than \$2,000 on the deal. Mr. Stockwell likes this way of handling breeding ewes, because he cleans up his place of the old stock every year, and in that way gets away from stomach diseases that sometimes give trouble to a flock of sheep held continuously year after year on the same farm.

Touching prospects for the wool market this spring and summer, Boston wool authorities say that the situation is firm, and all the wool that can be shorn will be wanted at the prevailing prices. There is little possibility that prices will decline, but on the contrary every market feature favors an advance if there is any change. Even at present prices, around 30 cents a pound, an ordinary clip of eight pounds a head will more than pay for the ewe's keep for a year. By using good rams and keeping the flock healthy, a band of ewes can be worked up to producing ten pounds or more at each clipping.—J. A. RICKART.

Cards—Free

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

FARM AND HERD

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

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CLAIM SALE DATES.

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

Aberdeen Angus.
Aberdeen Angus Breeders' Association sales:
St. Joseph, Mo., April 25; Omaha, Neb., April 26; Sioux City, Iowa, April 27; St. Louis, Mo., May 2; Chas. Gray, Secretary, 817 Exchange Ave., Chicago, Ill.
May 26—E. H. Salisbury, Kirksville, Mo.

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

S. S. Smith of Clay Center, Kan., reports his Jersey herd doing well. Mr. Smith owns one of the good producing Jersey herds. It is made up of representatives of the heavy producing families of the breed. At this time he has a choice lot of young stock sired by Blue Boy Baron 99918, one of the good Jersey sires.

Notice is given of the annual meeting of the American Guernsey Cattle Club, which will be held at the Hotel Imperial, New York City, on May 10. Aside from the executive and business session to be held on Wednesday, May 10, at 10:30 a. m., there will be gatherings on Tuesday, May 9. At 3 p. m. there will be a meeting of the New York State Guernsey Breeders' Association. At this time announcement will be made of the winners of the trophies offered by that association in the Advanced Register work. Dr. J. F. De Dine of Goshen, N. Y., will give an address on "The Calf—From Its Conception to a Yearling." There will also be an address on the producing of better milk for better prices. At 6:30 the Guernsey breeders will dine together and an opportunity will thus be afforded for their getting acquainted. After the dinner Dr. C. B. Davenport will give an illustrated lecture on "Modern Laws of Heredity with Special Reference to Cattle Breeding." Dr. Davenport is director of the Station for Experimental Evolution of Carnegie Institute of Washington, which is located at Cold Spring Harbor, Long Island, N. Y. He is recognized as an authority in his line. Breeders should notify William H. Caldwell, secretary, Peterboro, N. H., of their intention to be present at these meetings.

HOLSTEIN CATTLE.

CLYDE GIROD, At the Farm.

HOLSTEIN FRESIAN FARM, TOWANDA, KANSAS

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

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

GIROD & ROBISON.

200 - HOLSTEIN COWS - 200

You are invited to look over our herd of Holsteins before you buy. We have 150 high grade cows and heifers and a lot of registered bulls to go with them.

THREE COWS AND A REGISTERED BULL, \$355
Fifty cows in milk and forty that will freshen soon. Come and see our cattle. Bring your dairy expert along. The quality of the cows and our prices will make it easy for us to trade. Come soon and get choice. Well marked heifer and bull calves, \$22.50 each, delivered to any express office in Kansas.
LEE BROS. & COOK - HARVEYVILLE, KANSAS

Purebred Registered
HOLSTEIN
CATTLE

The annual distribution by the Holstein Friesian Association of \$22,500 in prizes for milk and butterfat records and for exhibitions at fairs has been a great stimulus to dairymen in exploiting the merits of purebred registered Holstein cattle. Prosperity attends the farmer who wisely buys or breeds these most prolific and profitable of all dairy cattle. Quantity of production and persistency of milking during long periods are characteristic of the hardy Holstein cow. Investigate the big "Black-and-Whites."

Send for FREE Illustrated Descriptive Booklets.
The Holstein-Friesian Association of America
P. L. Houghton, Sec'y Box 114, Brattleboro, Vt.

Cederlane Holstein Herd

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

T. M. Ewing, Independence, Ks.

Regier's Holsteins

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

G. REGIER & SONS, WHITEWATER, KAN.

IN MISSOURI

Eight bulls, 2 to 8 months, \$100 to \$175 each. Always have a few good cows and bred heifers for sale. Nothing but registered Holsteins.

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

BUTTER BRED HOLSTEINS

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

J. P. MAST - SCRANTON, KANSAS

REGISTERED HOLSTEINS

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

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

CORYDALE FARM HERD

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

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

HOLSTEIN COWS

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

HOLSTEINS

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

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

TREDICO FARM

Route 44 - KINGMAN, KANSAS

23- HOLSTEIN-FRIESIAN BULLS -23

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

Breeders for Thirty Years.

McKAY BROS., Waterloo, Iowa

Golden Belt Holstein Herd

Canary Butter Boy King No. 70508
In Service.

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

W. E. BENTLEY, MANHATTAN, KANSAS

CHOICE HOLSTEIN BULLS

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

BEN SCHNEIDER, NORTONVILLE, KAN.

HOLSTEIN CATTLE.

F. W. ROBISON, Cashier Towanda State Bank

HOLSTEIN FRESIAN FARM, TOWANDA, KANSAS

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

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

GIROD & ROBISON.

HOME FARM OFFERS

Two fine sons of Sir Sadie Cornucopia, who has 35 A. R. O. daughters, four of them averaging over 30 pounds. No. 1, born December 5, 1915, dam has 7-day record of 22 pounds and yearly of 641 pounds. No. 2 born January 6, 1916, six nearest dams average over 27 pounds in 7 days.

W. B. BARNEY & SONS, CHAPIN, IOWA

Albechar Holstein Farm

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

ROBINSON & SHULTZ, Independence, Kan.

BONNIE BRAE HOLSTEINS

Twenty head extra fine, big, heavy producing young cows. Fresh and heavy springers. Also springing heifers. Three extra fine Guernsey cows and a few Guernsey heifers.

IRA ROMIG, Station B, TOPEKA, KANSAS

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

EDGEWOOD FARM, Whitewater, Wisconsin

HOLSTEIN BULLS, "REGISTERED"

Two ready for service. Smith & Hughes, Breeders, Route 2, Topeka, Kansas.

BRAEBURN HOLSTEINS A. R. O. Bull

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

REGISTERED HOLSTEIN BULL CALVES

Fine individuals and breeding.

PLEASANT VIEW FARM, Altoona, Kansas

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

WILLIAMS & SONS HEREFORDS

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

PAUL E. WILLIAMS, MARION, KANSAS

RED POLLED CATTLE.

RED POLLED BULLS

TWENTY yearling bulls, big rugged fellows, sired by ton sires; all registered and priced reasonably. Will sell a few females.

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

Coburn Herd Red Polled Cattle

AND PERCHERON HORSES.

A few choice bulls. Eight extra good two-year-old stallions for sale at reasonable prices.

MAHLON GROENMILLER, Pampa, Kan.

RED POLLED CATTLE

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

AULD BROTHERS, FRANKFORT, KAN.

RED POLLED CATTLE

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

RED POLLED CATTLE.

For Sale—Eight choice young bulls from 7 to 11 months old.

L. W. FOULTON - MEDORA, KANSAS

DUROC JERSEYS.

Sisco's Duroc Jerseys

PRIZE WINNING BLOOD

Big, growthy, richly-bred gilts, bred to a choice son of the great boar, A Critic, for spring farrow. Outstanding spring boars. Also a choice herd boar. Prices right.

A. E. SISCO, Route 2, TOPEKA, KS.

BOARS! BOARS! BRED GILTS!

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

G. M. SHEPHERD - LYONS, KANSAS

TWENTY-FIVE DUROC BOARS, \$15 TO \$25 100 to 180 pounds; four choice herd prospects, \$30 to \$35. Will ship these four on approval. Few tried sows, bred for summer farrow; fifty gilts for August and September. Write me.

J. E. WELLER - FAUCETT, MO.

HORSES AND MULES.

FAIRVIEW STOCK FARM

Home of World's Grand Champion Jack, Kansas Chief 9194
More registered jacks and jennets than any farm in the West. Jacks to 1,240 pounds. Prices and terms reasonable. Written guarantee with every jack. Car guaranteed. If stock is not as represented, Young jennets bred to Kansas Chief. Reference, any bank in Dighton.
H. T. HINEMAN & SONS
Dighton, Kan.



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

ONE HUNDRED
Registered Percheron, French Draft, Belgian and Shire stallions and mares for sale cheap.
A. LATIMER WILSON, CRESTON, IOWA.

ANGUS CATTLE

EDGEWOOD FARM

ABERDEEN-ANGUS CATTLE

I have for sale several good yearling and two-year-old bulls, also a few good cows. If you are looking for the good kind, write me or come and see them. They are offered at reasonable prices.
D. J. WHITE - CLEMENTS, KANSAS
On Main Line of Santa Fe, 145 Miles West of Kansas City.

ABERDEEN ANGUS BULLS

I have several head of extra good Aberdeen Angus bulls for sale. These bulls are of serviceable age, good families, good individuals, raised under farm conditions and are priced to sell. Anyone in need of a good bull of the above description will do well to write for description and prices. Come and see them.
E. B. LAFIN, CRAB ORCHARD, NEB.

GUERNSEY CATTLE

THE GUERNSEY

stands for Economical production. More profit from every pound of feed. Do you want cows that will improve your Dairy?
Write for free literature.
Guernsey Cattle Club,
Box K, Peterboro, N.H.

OHIO IMPROVED CHESTERS

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

SHORTHORN CATTLE.

E. O'DAY'S PUBLIC SALE

Of 52 Head of High-Class Shorthorns will be held on Thursday, May 11, 1916, at London, Ohio. Thirty-two cows and bred heifers, number of cows with calves at foot and weaned. The cows are big, deep, thick, and heavy milkers. Twenty choice young bulls, rugged, strong-boned specimens that will make good anywhere. Write for catalog.
E. O'DAY - LONDON, OHIO

Tenneholm Shorthorns

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

SHORTHORN BULLS.
Twelve head bulls, breeding age, all sired by a pure Scotch bull. Reds, whites and roans. Herd headed by Scottish Monarch by New Goods by Choice Goods, out of Morag Glory, a granddaughter of imported Lady Star. Will sell a few females.
KELLY BROS. - GARDNER, KANSAS

HILL'S SHORTHORNS
One red Shorthorn bull 11 months old, sired by Bettie's Albion 399451, pure Scotch, well built, weight between 600 and 700 pounds. Ready for service. Priced to sell.
C. E. HILL - TORONTO, KANSAS

Sycamore Springs Shorthorns
Master of Dale by the great Avondale head herd. A few young Scotch bulls and bred heifers for sale.
H. M. HILL - LAFONTAINE, KANSAS

RIVERSIDE SHORTHORNS
For Sale—Five pure Scotch and Scotch-topped young bulls. Prices reasonable. Come and see them. They are extra good and will make herd headers.
H. H. HOLMES, GREAT BEND, KANSAS

Twelve SHORTHORN Bulls
For Sale—Twelve Shorthorn bulls, big heavy fellows, about one year old. Sired by Goods by Choice Goods, out of Scotch-topped Lady. Prices reasonable. Come and see them.
K. G. GIGSTAD, Lancaster, Kansas.

LOVEMONT SHORTHORNS.
Bawith Heir 351808 heads herd. Inspection invited. E. E. Heacock & Son, Hartford, Kan.

BERKSHIRE HOGS.

BERKSHIRE BRED SOWS
Seventy choice bred Berkshire sows, to farrow every week from March 1 until June. Bred to as good boars as the breed has. (Piglet immune).
E. D. KING - BURLINGTON, KANSAS

FARM AND HERD.

The Lee Bros. and Dr. Cook at Harveyville, Kan., have made a success breeding Holstein cattle. They have on hand about 200 head of yearlings, two-year-olds and mature cows. Their herd consists of both registered and high-grade cattle. Many of the high grades were selected from the best herds in New York and other eastern states.

McKay Bros. of Waterloo, Iowa, owners of one of Iowa's heavy producing herds of Holsteins, report their herd coming along fine and they expect to make some new high records this year. They have a very fine lot of young stock in their herd at this time, including some outstanding bulls backed by excellent records.

A. E. Sisco of Topeka, Kan., owner of one of the richly bred herds of Durocs, reports his herd doing fine. Mr. Sisco breeds the type of Durocs that have the size combined with show ring quality. His show herd never fails to attract attention and he expects to be at the leading fairs this season with the best show herd that he has ever had in the show ring.

W. E. Bentley of Manhattan, owner of Golden Belt Holstein herd, reports his herd is making a good showing this year. This is one of the richly bred herds and is headed by Canary Butter Boy King 70508, one of the good sires now in service. The young stock in the herd sired by this bull are a very promising lot.

Comfort A. Tyler, secretary and treasurer of the American Hampshire Sheep Association, announces that his office has been moved to 35 Woodland Avenue, Detroit, Mich. All communications to the association should be sent to that address.

O. E. Torrey of Towanda, Kan., has just returned from Wisconsin with five carloads of high grade Holstein cattle. He reports that dairy cattle in that district has advanced from \$10 to \$15 per head over last year. Mr. Torrey has made a great success breeding Holstein cattle and is doing a great work to further the dairy interests of Kansas.

F. M. Hartzell of Carthage, Ill., is one of the leading breeders of Tamworth hogs in that state and owns a very fine herd of that excellent breed of bacon hogs. His is one of the herds that is drawn upon heavily for breeding and show stock. He makes a specialty of selling pigs at weaning time and has made a success of it in that line.

The eighteenth annual American Royal Live Stock Show will be held at Kansas City, Mo., October 2 to 7, 1916. R. H. Hazlett is president, and W. H. Weeks, secretary.

E. B. Lafin of Crab Orchard, Neb., owner of one of the best herds of Aberdeen Angus cattle in that state, reports his herd doing well. By careful mating Mr. Lafin has developed a type of Aberdeen Angus cattle that are the profitable kind to the farmer and feeder. The leading families of the breed are represented in his herd and at this time he has a very fine lot of young stock, including a number of outstanding bulls.

Fred Chandler of Charlton, Iowa, one of the leading breeders of Percheron and Belgian horses, reports a good demand for high class stallions and mares. The Chandler Farms are noted as the home of outstanding herds of Percherons and Belgians and breeding stock from their herds can be found in the best breeding barns and herds in this country.

The Jean Duluth Farm, Duluth, Minn., sold the thoroughbred Guernsey bull May King Linda Vista for \$4,600. This is the highest price ever paid for a Guernsey bull, either abroad or in the United States. The purchasers were C. W. Barron, owner of the Oaks Farm at Cohasset, Mass., and A. L. Lincoln, proprietor of the Rocky Beach Farm at Norwell, Mass. The animal captured the highest awards at the Minnesota State Fair and every fair in the Northwest at which it was exhibited last fall.

M. E. Gideon of Emmett, Kan., a well known breeder of Percheron horses, Hereford cattle and Duroc hogs, reports his herds doing well. He also reports the recent sale of two very fine Percheron stallions. Mr. Gideon now has at the head of his Percheron herd Ilmen 2d, a son of the grand champion Ilmen. A number of daughters of imported Jaquet are in this herd. Among the young stock in his herds at this time are a number of choice yearling stallions, also a few choice Hereford bulls.

The Holstein cattle sale of J. R. Smith and Buskirk & Newton, at Newton, Kan., was held as advertised. A large crowd of buyers attended this sale from all parts of the state. Thirty-three head of cows and heifers, mostly high grades, sold for an average of \$84.25. The demand seemed to be for cows in milk or those that would freshen soon. A. J. Erhart of Ness City, Kan., was the heaviest buyer for the registered cattle. While the prices on some of the better animals were a bit disappointing, the general average was very satisfactory for the entire sale.

Figures received by the Department of Agriculture from the International Institute of Agriculture, in Rome, indicate an increase of 5.7 per cent in the world's corn crop for 1915-16. The total production in ten countries, which grow 92 per cent of the whole, was 3,727,260,000 bushels. A year previous the world's total production was 4,153,768,000 bushels. The corn crop of the Argentine Republic, which is just now being gathered, is estimated at 161,136,000 bushels, or 52.4 per cent less than last year's yield.

S. W. Cooke & Son of Maysville, Mo., are contributing their share to the good work that is being done in that state in the interest of better dairy cattle. Their specialty is Holsteins and they own one of the best pure-bred herds of that popular dairy breed in Missouri. Their herd is made up of representatives of the heavy producing families of the breed. Their modern dairy barn is one of the best in the state and their Holsteins return a profit every year regardless of conditions.

L. F. Cory & Son of Belleville, Kan., owners of one of the good herds of Holstein cattle in this state, are among the progressive breeders that are succeeding in building up a herd of heavy producers. Their herd is headed by Jewel Paul Butter Boy 94245, one of the best Holstein bulls in the state. They have a nice lot of young stock sired by this good bull and out of heavy producing dams.

The ten farm management surveys made in Nebraska the last year, the last of which is just completed, show a number of interesting things, the most important of which is that there is a successful type of farming for every agricultural region of the state. That the farmer who adapts

HORSES AND MULES.

The Champion Breeder --- Missouri Chief 8365

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

Write Us for List of Winnings of His Get.

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

M. E. RICHARDSON - STERLING, KANSAS

HORSES AND JACKS

FOR SALE—Six coming two-year-old fillies, big growthy fillies, dark steel greys; one black mare, three years old in April; stud colt, two years old; all extra good; all out of imported sire and dams; Percheron Society of America. Twenty-two head two-year-old jacks; all raised on the farm; all priced to sell, cash or time. You can see the sire and dams of all this stuff. These are the blacks with neatly noses, the color that all breeders raise. I am now breeding white-faced jacks that will produce white-faced mules, and in a few years the breeding of white-faced jacks, alone, will be continued on this farm. Since running my advertisement every man who came to the farm found what he wanted and bought.
OAKLAND STOCK FARM, Box 207, CHILLICOTHE, MO.



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, Peoples Bank. Written guarantee with each animal. Have a number of Percheron stallions for sale, also saddle stallions. Barn in town. Wabash Railroad.
WM. DEIERLING, QUEEN CITY, MISSOURI.



JACKS & JENNETS AT REDUCED PRICES

TEN LARGE MAMMOTH BLACK JACKS

Ages from 2 to 6 years; large, heavy boned. Special prices for thirty days. Guaranteed right in every way. Come and see me.

PHIL WALKER, MOLINE, Elk County, KANSAS



THE SAUNDERS JACK COMPANY

U. G. Saunders, of Lexington, Ky., and Bruce Saunders, of Holton, Kan., have shipped a carload of registered Mammoth Jacks from Lexington, Ky., to Holton, Kan. Two to six years old, 15 to 16 hands high. Come to Holton and see as good a load of jacks as ever left Kentucky. Write your wants to BRUCE SAUNDERS, HOLTON, KANSAS. PHONE 589

EWING BROTHERS

Stallions from 2 to 5 years old, good ones, the kind that make ton horses. Mares in foal and few yearling fillies. Young bulls, 6 months to 3 years old, some top notchers. A few good cows and heifers for sale. A few Shetland ponies for the children. All priced to sell at let live prices. Come and see us before you buy.
EWING BROTHERS - PAWNEE ROCK, KANSAS

PERCHERON STALLIONS FOR SALE

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

POLAND CHINAS.

POLAND CHINAS

EIGHTY POLAND CHINAS

Forty fall boars sired by Long Wonder, will weigh 200 to 225 pounds, big bone, wide back kind.
Forty fall gilts, mates to these boars, and will be bred to A Wonder's Special and Rood's Big Joe 2d for July farrow.
Price, either boars or gilts, \$30 and \$35. First check gets choice.

O. W. LONG,

CRAIG, MISSOURI

GALLOWAY CATTLE.

GALLOWAY BULLS

FORTY yearling and two-year-old bulls, strong and rugged; farmer bulls, have been range-grown. Will price a few cows and heifers.
E. E. FRIZELL, Frizell, Pawnee Co., Kansas

AUCTIONEERS.

Live Stock and Real Estate Auctioneer

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

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

himself to local conditions has about equal chances for making money in all parts of the state. In other words, it is largely a question of what you prefer to do and where you prefer to live. That failures are frequently due to following a system not well adapted to local conditions. That successful farming is largely a question of proper management. That a majority of the successful farmers keep farm records for the purpose of studying their farm business.

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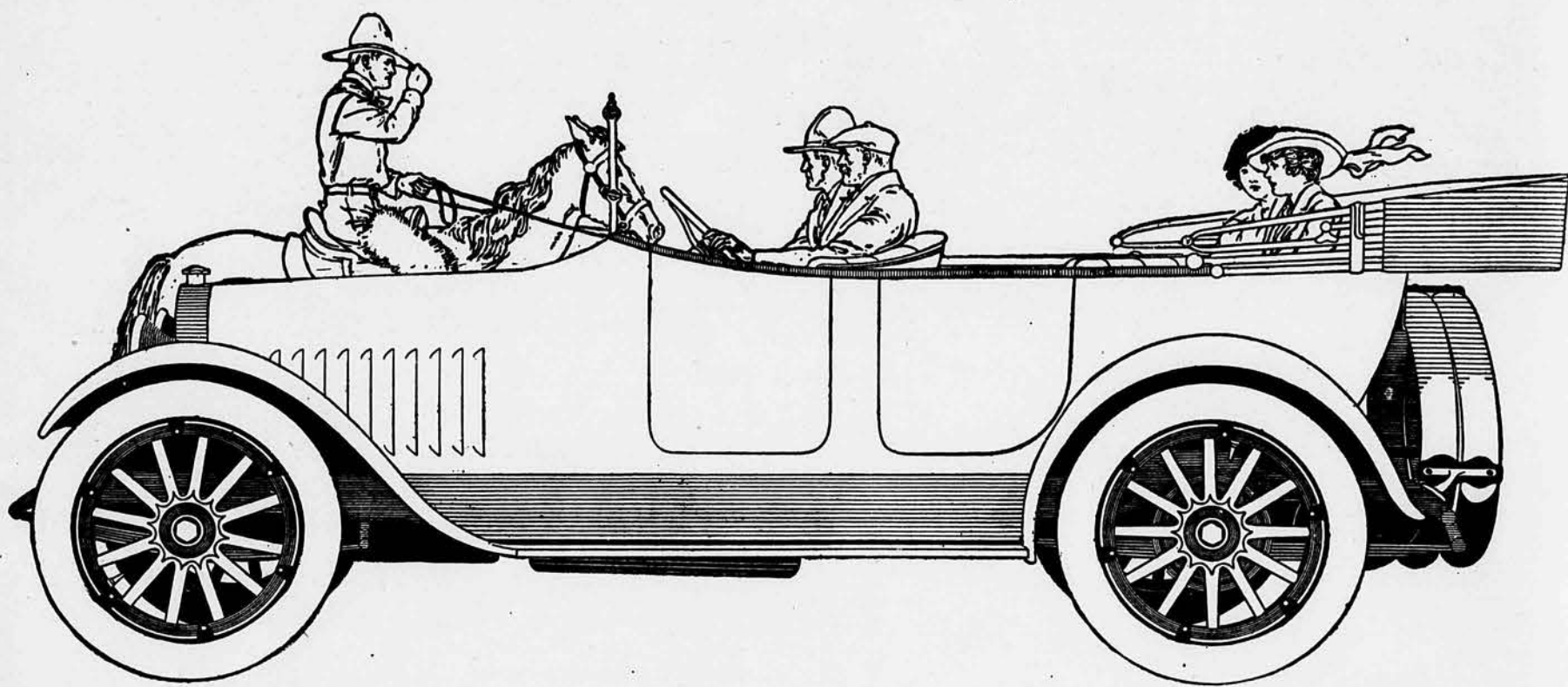
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