

KANSAS FARMER

FOR THE IMPROVEMENT OF THE FARM AND HOME

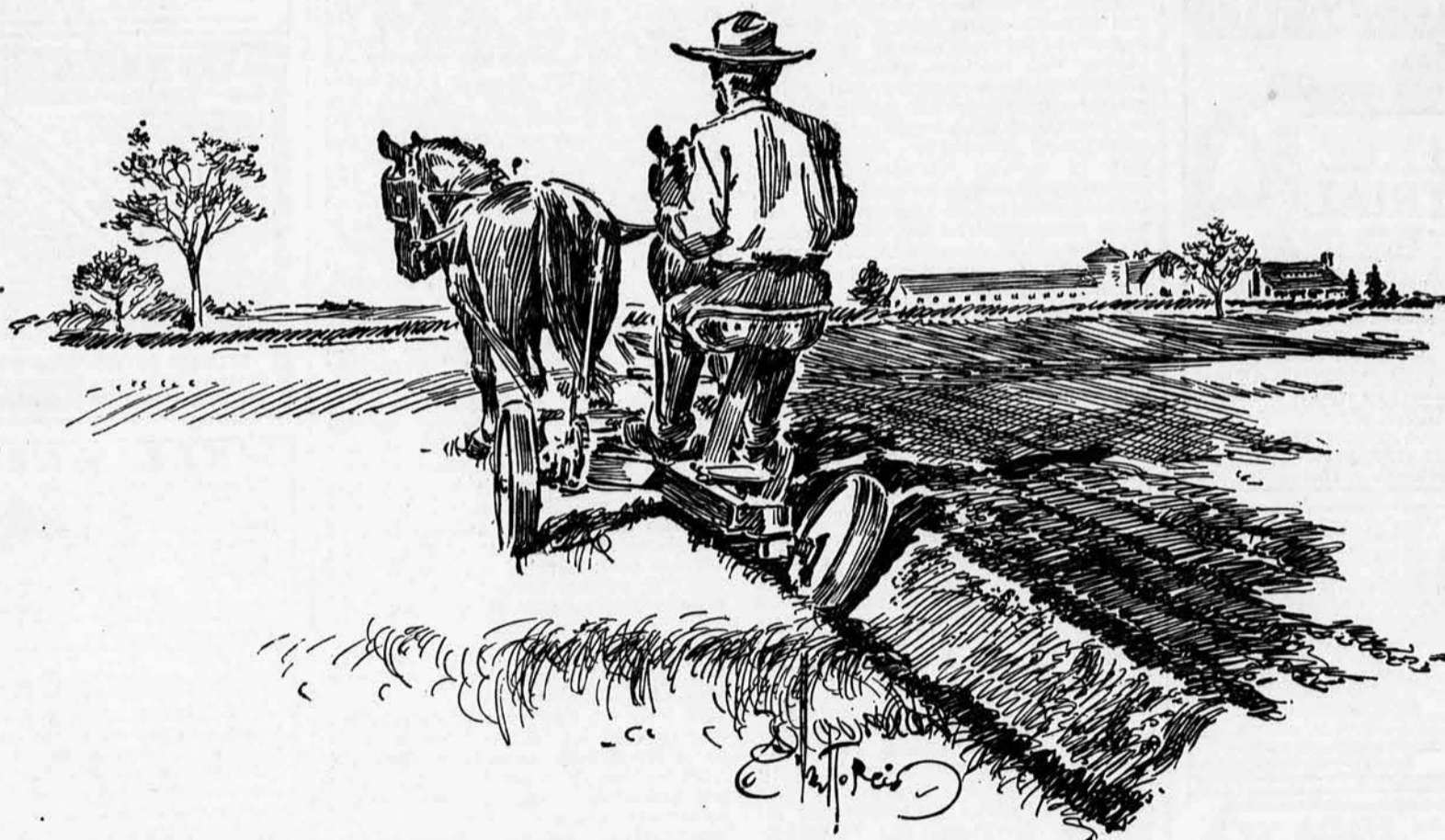
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FROM the cold Atlantic shores to the pitiless sage-brush desert America was peopled by the good and the bad, the conservative and the adventurous, but always by the courageous.

Seeking relief from the bonds of human action and the curtains of imagination these have seen the bow of promise and have dug 'neath its pavonine glow.

New-found acres were large and the strong-box filled. For the big man, the acre remained big, for another, it dwindled to his ability.

When the horizon bounded no newer lands, he learned that beneath each acre there lies another acre where the rainbow ends. —I. D. Graham.



Each Acre Has Another Acre Beneath It

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KANSAS FARMER

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LOSS THROUGH NEGLIGENCE.

THE editor has long entertained the idea that one of the heaviest farm losses, and that for which there was the least excuse, is that resulting from the poor care given farm implements during the season when not in use.

A few weeks ago the editor visited a farm on which in one pile was a thousand dollars' worth of farm implements—not junk, but implements used on the farm the past season—with no protection, no oil or grease on the mouldboards of plows or on the shovels of cultivators, and no paint on the wooden parts. In the field stood a corn binder left at the end of the last row cut, and in the hay meadow close beside a hay stack was the mower and rake.

This was on the farm of a successful farmer—a farmer who has made money and is well-to-do. He was a farmer who could afford just such extravagance if he so chose. But he was setting a bad example for his three or four boys, each of whom, it is hoped, will own and operate a farm.

The lack of care of farm implements too often occurs on farms whose owners can ill afford the loss. It requires about \$1,000 worth of implements to equip a farm of 160 acres. It has been determined that these implements require replacing every five years if not housed. The same authority says these implements will last twelve years if housed, oiled and painted as they should be. It is my judgment the life of a set of implements given no care is less than five years, and that with good care the same implements will last fifteen years. Giving the careless farmer the benefit of all doubt, by the above figures he is losing \$1,000 every five years. He is actually losing the money, too, because when his machinery is worn out or rotted or rusted out he must replace it. The \$200 a year lost is in itself a nice little profit.

Our grandfathers, who had little farm machinery, because in their day little was made for the farmer's use, were ideal care takers of everything. We recently visited an old Indiana farm and in the old barn were cradles, wooden rakes and forks, self-rakes, etc., apparently as good as new. In this day in this country the scythe hangs all winter in a tree. When we stop to think, do we really have any kick coming on low prices, high rents, high cost of living, etc., while we continue the most reckless extravagance in which an agricultural people have ever indulged? We prosper because of a munificent Providence rather than because we help ourselves.

THE FARMER A SPECIALIST.

Every farmer is capable of specializing along some line. The chances for success are increased if a man selects one line of work and unceasingly hammers away at it. If a man is a wheat farmer, grow the best wheat—pure-bred wheat—and sell it for seed at two times the price of wheat for milling. There is room for a great many seed wheat growers in Kansas. If a farmer must grow wheat, let him grow the best and with all his heart.

There is the same opening for the farmer who has corn land and prefers to grow corn. After the start is once made it costs no more to grow seed corn than corn for feed. Pure-bred seed corn of varieties adapted to this section, the same well dried and stored and germinating qualities tested before shipment, will give many farmers a pleasant and profitable business.

Such opportunities for specialization could scarcely all be named in this column. They pertain to each plant and its seed and to each kind of live stock. With this specialty the farmer, of course, would conduct general farm operations. If he grew seed wheat he would have cows, pigs and horses like other farmers. Think a little along this line. You may conclude something worth a trial.

RUSSIAN THISTLE AGAIN.

The news press has been giving a good deal of space lately to the Russian thistle. The newspapers say the thistles are a high-class forage—equal, in fact, to alfalfa. Like many good things, though, it has just one fault, and that is the thorn—except for which, in the estimation of the newspapers, the thistle would be a great feed. The same papers report that some man or men will offer a substantial prize to the student of Kansas University who will breed the thorn off the thistle and thus produce a really valuable feed. Here is hoping some young man gets the money. But, it's too bad that while earning it he can't spend his time at something worth while.

A million times more good would result from the developing of a strain of Kafir which would mature in the Russian thistle country a week or ten days earlier than our present known varieties. Likewise an alfalfa plant somewhat more hardy and drouth-resisting than any alfalfa now grown in that section. Either in the case of Kafir or alfalfa there is a great possibility to accomplish something really helpful and worth while. There are opportunities with a half dozen plants to perform for the farmer of the western third of Kansas a service of real value.

The Russian thistle is a pest—and will be so long as it is grown. Fox tail makes a fair hay—it is worth cutting when there is nothing else—but the farmer whose land is well set in fox tail would give the world to get rid of it. We have seen Russian thistles grow under all conditions. When they grow thick and are not woody, cattle eat them. Growing thick, the thistle does not get tall—when it grows tall the plants are thin on the ground and the stems hard. Under conditions by which they might be grown for feed they might cut a third of a ton cured to the acre. A 160-acre farm wouldn't grow enough thistles to feed the work stock. In the western country, among farmers, they joke about the Russian thistle for feed. The western country deserves serious consideration at the hands of those who have in their hands the means of experiment.

Farm machinery which is not properly oiled and sheltered during the idle season will last only about one-third as long as that which is cared for. Supposing the farmer to have a thousand dollars' worth of necessary machinery on his place. If properly cared for this will last him about 12 years on the average, but if not cared for it will have to be replaced in about four years, and besides will have to be scoured and repaired every spring when work is pressing and time is precious. Good care, then, simply means that \$1,000 is saved every four years, and this means about \$28 per month. A shed to protect such tools might cost from \$50 to \$100, and thus the saving would be assured. Is this a good investment in which \$28 a month is made on \$100 worth of shed?

With the coming of white frost there has been a noticeable check in the ravages of hog cholera, and later reports indicate that the loss has been greatly overestimated in certain localities, at least. Last spring's crop of pigs was thought to be one of the largest that had farrowed in late years, and the experts now estimate that the cholera has about reduced the number to normal, but that the general shortage of hogs all over the country is sure to make prices firm for the next two or three years. With her enormous acreage of alfalfa and the biggest crop of Kafir in her history, Kansas ought to be able to take care of a good many hogs this winter and be ready for the big demand which seems sure to come in the spring.

THE FARMER'S IMPORTANCE.

When the farmer increases his net income without impairing his capital, he creates new wealth, swells bank deposits, puts more money into circulation and increases the demand for everything which is for sale.

If he uses poor methods and does not use the manure spreader he is living off of his capital and "the last state of that man is worse than the first."

To some extent, everybody is a merchant, and every man and every business is dependent upon the success of every other man and every other business. No matter who you are or what your business, you cannot alter this elementary fact. The laborer who has nothing to sell but his day's work; the grocer with his sugar and beans; the railroad company with its service, or the truck gardener with his lettuce—all are interested in and dependent upon the products of the soil.

No other single occupation or business is so indispensable to every other business as is farming. No wonder, then, that every other business is, and should be, interested not only in farming, but in successful farming.

THE GRASS LAND.

Many farmers have been known to express regret that so much of their land had been plowed up instead of being left in native grasses.

In the earlier days of Kansas farming it was generally supposed that the most profitable method of handling the land was to turn under the sod as quickly as possible and get the land into crops. Now it is found that grass is a very valuable crop and no land is more valuable than that which is down to a permanent alfalfa crop.

Wild grass pasture and hay land is very scarce and is eagerly sought after, and yet it seems beyond the power of Kansas farmers to get it either by purchase or by seeding.

Blue stem seed can be purchased of dealers and doubtless much of it is sold, but it is rarely that one hears of any considerable acreage being put down to it.

Is this because seeding is not successful or because it is not thought to be worth while? There are many places where blue stem and other grasses will grow which are not available for alfalfa. What have our readers done in the way of resowing the native grasses?

Perhaps the state of Illinois never suffered from such a scourge of hog cholera as during the present fall season. Reports indicate that there are large sections of that state which are entirely depopulated of hogs, and such a disaster interferes most seriously with farming operations. In order to overcome the difficulty presented by this condition, at least in part, one cattle feeder who could not get hogs to follow his cattle, hit upon the expedient of substituting geese. This feeder bought 500 geese in Tennessee, and is much pleased with his experiment, as he finds that the birds pick up every grain of his 60-cent corn and that they are fattening very rapidly. Here is a hint for other feeders where hogs are scarce.

Do you have a fanning mill? If not, and there is none in the neighborhood you can borrow, it would be a good plan to buy. You will have a half dozen kinds of seeds to clean before another harvest.

Settle down to business—hard work and intelligent effort. The two are required if you would succeed. Today is the day, and where you are is the place. Here is as good as yonder, and today better than tomorrow.

Scrub father begets scrub son. A scrub bull or scrub seed corn beget their kind. The scrub can't win. Breed up.

FARMERS' WEEK IN TOPEKA.

During the growing season the farmer is the busiest of men and is compelled to devote his energies to the physical side of life, but, after his season is over and his crops stored, he has leisure for mental employment as well.

One of the greatest opportunities afforded for mental growth to farmers of Kansas is included in "Farmers' Week in Topeka," which will, this winter, begin on Monday, January 28, with the sessions of the Kansas Improved Stock Breeders' Association.

This is the greatest association of its kind in the United States, and its annual meetings afford those who are interested in our greatest industry, an occasion for comparing methods and results and for listening to and discussing topics that are presented by experts in their several lines. It also affords the breeder a chance to meet with his customers and to form new acquaintances among people who may become such. Its social features and banquet are highly prized by its members and guests.

At this great breeders' meeting there will be presented such live subjects as the serum treatment for hogs; the dairy cow; the silo—how to build and fill it; sheep and conservation; failures in the show ring; scientific breeding; local breeders' associations; the horse's feet; hog feeding for profit; and an evening address by President H. J. Waters of the Kansas State Agricultural College.

Opportunities for the discussion of these and other topics will be afforded and the sessions will close with the annual breeders' banquet on Wednesday evening.

Beginning at 4 o'clock on Wednesday, January 10, the annual meeting of the Kansas State Board of Agriculture will be held. The program will be announced in due time.

This year a new association will be included. This is the Kansas Association of County and District Fair Managers, which will hold its first annual meeting beginning on Tuesday, January 9.

The Kansas Swine Breeders' Association; the Kansas branch of the Red Polled Cattle Club of America; the Kansas Veterinary Medical Association, and others will hold business or other sessions during the week.

The meetings of Farmers' Week, while largely attended and of vital interest, are deserving of greater attention on the part of the farmers of Kansas, and perhaps nowhere else can he get so much real value for the small expenditure of time and money necessary to attend them.

These meetings are free and everybody is invited.

The small farmer—the 160-acre man—is reading everything he can get his hands on regarding the adaptability of the farm tractor to his needs and conditions. It seems to us that some types of tractors are very close to meeting his requirements. The Kansas Agricultural College official paper ventures this opinion: "Traction power is no more thought of as a joke. While this division of the implement industry is yet in its infancy, the use of traction power on the farm is likely to revolutionize the present system of farm management."

It is said that this winter agriculture is being taught in 7,000 Kansas schools. That is indeed a good start. Of course, agriculture is not actually being taught. But we heard enough of something like agriculture in a country school a few days ago to lead us to believe that it will be taught as soon as the country teachers get next to the "study." While we fellows who have been hammering many years for the teaching of the fundamentals of agriculture in the district school have the privilege of criticizing, we must remember that 7,000 teachers must first learn what to teach and how to teach it.

Corn and Alfalfa for Dairy Cow

Kansas Should Feed Its Live Stock As Can No Other State

By D. H. OTIS, Wisconsin Agricultural College



D. H. OTIS.

D. H. Otis, the author of this article, is a Shawnee County, Kansas, boy, who through his connection with the Kansas State Agricultural College has done as much as any other man to point Kansas farmers to more economical and better feeding of the milk cow. For several years his efforts have been similarly devoted to the Wisconsin farmer through the agricultural college of that state. He is more than making good in every job he undertakes.—Editor.

Three factors stand out prominently in successful dairy production: First, the man; second, the cow; and, third, the feed. It is only a phase of the latter subject that I am to discuss at this time.

In order to comprehend the feeding problem in dairy production we need to realize that the dairy cow is an animated machine that has for her mission the conversion of feed into milk. I need not dwell here on the fact that cow machines vary immensely in their efficiency. If we are to realize the most of our feeds, we must, as a matter of course, see that they are fed to efficient cows.

Just what happens to the feed after it is consumed by the cow is a debatable question. As Governor Hoard says, the inside of the cow is a dark place, and no man has yet been able to fathom all the mysteries wrapped up in the inside workings of her body.

There is, however, one fundamental principle that applies to cow machines as well as to all other machines, viz., that there must be ample and a properly proportioned supply of raw materials that go to make up the finished product. What does the dairy cow need? If we analyze the product she manufactures, milk, we will get our cue. On an average, whole milk contains approximately the following ingredients:

Water	87.22%
Ash71%
Casein and albumen	3.50%
Sugar	4.88%
Fat	3.69%

It stands to reason that the dairy cow in manufacturing the above product must have the raw material out of which the above ingredients are formed, and must have it in sufficient quantity and in right proportion. In addition to this, she must first of all be supplied with sufficient food material for the maintenance of her own body.

The first step in supplying the needs of our dairy cow is the analyzing of the different feed stuffs, and then submitting them to the chemical laboratory of the cow's stomach and see how much and in what proportion the various feeding stuffs will supply the desired ingredients.

Some Important Factors in Feeding.

In studying these feedstuffs there are several important factors to be considered.

FACILITY OF DIGESTION.

Many authorities measure the value of feed by its total digestible nutrients. This has been proved not to be entirely correct, for although a feed is digestible, it may contain more bulk, require a large amount of energy in chewing, in secreting digestive juices, and in warming up extra water for a suitable solvent. This is called by some "the facility of digestion." At the Connecticut experiment station (Storrs) an experiment was carried on with two 1,000-pound cows fed on a maintenance ration of 6½ pounds of corn meal containing 4½ pounds of digestible nutrients. The same cows required for maintenance 13½

pounds of mixed hay containing 711 pounds of digestible nutrients. In this instance one pound of digestible nutrients in corn was equal to 1.67 pounds in mixed hay. Another experiment with pigs resulted in 230 pounds of digestible nutrients in skim milk to produce 100 pounds of gain. With skim milk and shorts there were required 258 pounds of digestible nutrients, and with shorts 294 pounds.

All things considered, milk would rank first in facility of digestion, followed by concentrates, second, and roughage, third. With roughage the facility of digestion is greater with early cut than late cut hay, is greater with silage than corn stover.

SEASONABLE FEED.

Our live stock are looked upon as animated machines for the purpose of converting our raw feed into finished animal product. To furnish this product the animal must be supplied with the right kind and right quality of raw material. The standards that have been adopted as a result of numerous experiments indicate how much protein, carbohydrates and other extract they need under various conditions and circumstances. While these standards are by no means absolute, they serve our purpose as guides. Our farm feeds usually contain ample quantities of carbohydrates and other extract, but where alfalfa and clover are not grown in large quantities there is a likelihood of being a deficiency in protein, and when buying concentrated feeds we usually buy them not for the carbohydrates, but for the protein. Before purchasing these we need to settle whether we need protein nutrients or total nutrients. If it is the former, we will select some nitrogenous roughage, as alfalfa, clover, or cow pea hay, and for grain, oil meal, linseed meal, gluten meal, or other highly nitrogenous feeds. The selection of these feeds and the grouping of them to make what is known as a balanced ration has been agitated through our institutes and the agricultural press, and are now familiar to all leading stock breeders. For properly balancing our live stock rations we cannot put too much emphasis on the value of alfalfa

and clover as abundant sources of digestible nitrogenous nutrients.

PALATABILITY.

The relish with which an animal eats its feed has much to do with the effect of that feed on the body. It regulates the amount eaten and when properly assimilated the more the animal eats the larger amount of product it turns out. By supplying an animal with food that it eats readily, it will help it to eat its other food better and in larger amounts. A palatable food stimulates the digestive juices, and the supposed good of many of our stock foods rests in the palatableness that they may impart to other feeds. It is important to preserve this quality as far as possible in all feeds. Hay should be so cured that the animals are anxious for it—yes, and so fragrant that they are ravenous for it. Greediness of appetite is a great factor in economical production of live stock products. Any feed that will so regulate the animal as to keep it in good health and condition will add much to the final results. Linseed meal, corn silage, and roots are all examples of feeds that are greatly relished by our live stock.

VARIETY.

Variety is very closely related to palatability. It helps to keep the appetite keen and the animal healthy and vigorous. By having several feeds, one can supplement the other, as one may be deficient in ash and this deficiency made up by the other. Recent experiments show that ash plays a very important part in the nutrition of farm animals. It is also known that the digestible protein in one feed does not necessarily possess the same nutritive value as the digestible protein in another feed. By feeding a variety, one will make up where the other falls down, and the feeder can feel reasonably sure that he is giving his animals sufficient nutrients, even though we do not, in our present knowledge, know the exact function of these nutrients.

Having considered the different factors that enter into the value of a feed, it is interesting to take two of our most promising feeds, corn and alfalfa, and see how they conform to these requirements.

ACCORDING to Henry, "Corn is the great energizing, heat-giving, fat-furnishing food for the animals of the farm. * * * No other grain that the farmer grows yields, on a given space and with a given expenditure of labor, so much animal food, both in grain and forage, as does the Indian corn plant."

Corn silage adds palatability and variety to the ration, is a cheap feed to produce and to store, and doubtless goes farther than any other feed to solve the problem of restricted pasture acreage or to tide over scant pastures during a drouth.

Alfalfa is a legume remarkably rich in digestible protein. It is also a heavy producer, averaging under our northern conditions about four tons of hay to the acre. By using it judiciously with other feeds it is possible for the dairy farmer to obtain well balanced rations for his live stock from feeds grown entirely on the farm.

When we think of alfalfa as a perennial plant, that it produces a larger yield than any other hay crop, that it extends its roots into the lower soil and brings up plant food from the sub-soil, that its roots are covered with tubercles, the home of micro-organisms that have the power to lay hold of the nitrogen in our atmosphere and convert it into plant food, thus leaving the soil richer than it was before the alfalfa was grown, we cannot but help think that alfalfa is a wonder plant—D. H. OTIS.

CORN FOR GRAIN.

According to Henry, "Corn is the great energizing, heat-giving, fat-furnishing food for the animals of the farm. * * * No other grain that the farmer grows yields, on a given space and with given expenditure of labor, so much animal food, both in grain and forage, does the Indian corn plant."

Corn is particularly appetizing to classes of animals. While a ration for a dairy cow can be made without using corn, it is seldom done where corn is obtainable. Corn, while such a valuable and indispensable feed, should not under ordinary conditions constitute the entire grain ration. It is deficient in crude protein and ash, and should be fed in conjunction with other feeds rich in these ingredients. It will be noted that under the headings of digestibility and facility of digestion corn stands out prominently as a feed easily digested and containing a large number of units of net available energy.

CORN FOR SILAGE.

Corn silage and roots are examples of feeds that are greatly relished by live stock. Of the various palatable feeds, corn silage is doubtless the cheapest and most effective. Roots, while serving an excellent purpose, require about twice as much labor to produce.

Corn silage adds palatability and variety to the ration, is a cheap feed to produce and to store, and doubtless goes farther than any other feed to solve the problem of restricted pasture acreage to tide over scant pastures during drouth.

SILAGE AN ECONOMICAL FEED TO PRODUCE.

By converting the corn crop into silage, the farmer can handle his crop cheaper and with less waste than by any other method. C. L. Hill, of Wisconsin reports that it costs him from 50 to 60 cents a ton to put his corn crop in the silo, or about \$7.00 per acre. The same acre of corn, he figures, would yield 10 baskets of corn that would cost him \$6.00 to husk, which, with the cost of cutting, stacking shredding and grinding would be about double what it costs to put the same crop in the silo. Silage is greatly relished by the cows and causes a glossy appearance of the hair, similar to pasture grass. It is convenient to feed, and is available summer or winter.

SILAGE AN ECONOMICAL FEED TO STORE.

Corn silage is not only palatable and cheap to produce, but it is an economical feed to store for the production of total nutrients. This is shown as follows:

One ton of mixed hay occupies 40 cubic feet.

Eight tons of corn silage occupy 40 cubic feet.

One ton of mixed hay contains 1,700 pounds of dry matter.

Eight tons of corn silage contain 4,200 pounds of dry matter.

One ton of mixed hay contains 900 pounds of digestible dry matter.

Eight tons of corn silage contain 2,500 pounds of digestible dry matter.

It will be noticed that the farmer can store two and one-half times as much dry matter in the silo as he can in his hay mow.

THE USE OF SILAGE DURING A DROUTH.

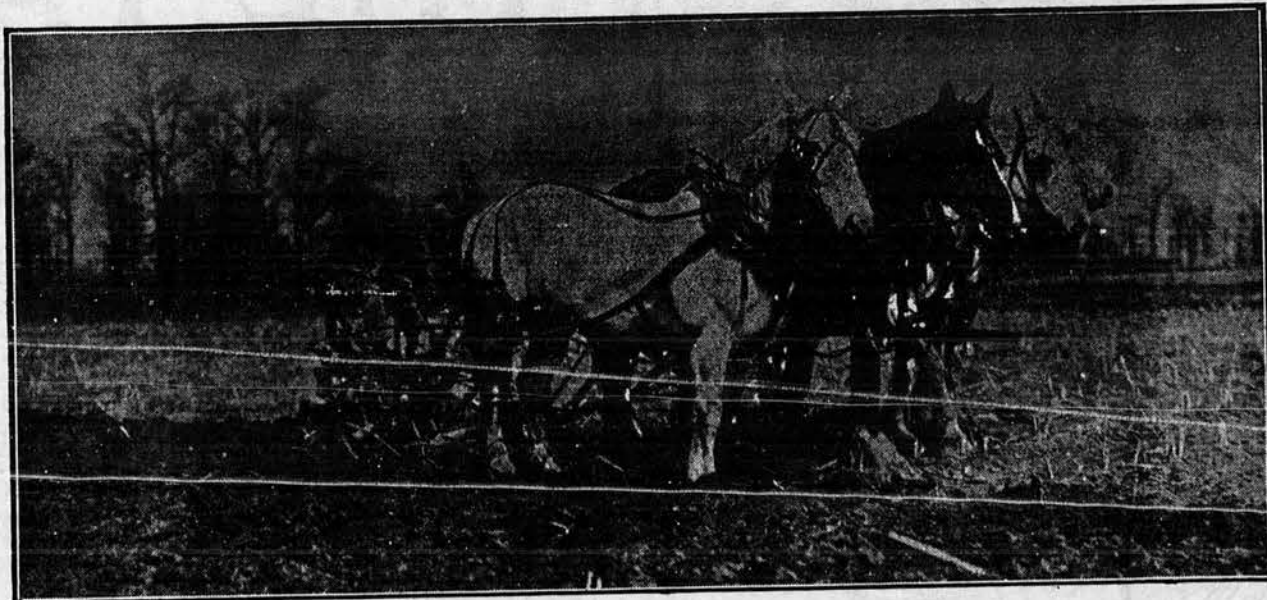
Silage, when kept in sufficient quantities, is always ready to use when needed. The advantages of summer feeding of silage, particularly during periods of drouth, is fully appreciated by those who have tried it. During the latter part of the summer when pasture was scarce or dry, corn silage was fed to the University dairy herd. The flow of milk from the herd was never maintained so well during this period of the year as it has been by the use of corn silage. The summer silo is sure to become a more important factor in successful dairying.

SILAGE GROWING IN FAVOR FOR ALL CLASSES OF STOCK.

The economy of silage in beef production has not been as thoroughly established as for dairy production. It has, however, been tested by a number of experiment stations and by stockmen with excellent results. There is no question as to the value of corn silage for sheep. By careful handling it is also proving a valuable aid to the calf feeder, and recently silage has been fed to horses with very encouraging results. The fact that silage is so useful for these various classes of live stock ought to give additional incentive to the dairyman to provide for an ample supply of this most excellent feed.

THE JUDICIOUS USE OF SILAGE.

Corn silage should be fed as a supplement to and not as an entire substitute (Continued on page thirteen)



A LITTLE STUDY OF AVAILABLE FEEDS WILL INCREASE EFFICIENCY AND ECONOMY TO BOTH MAN AND TEAM. ALFALFA WILL BE TREATED IN A CHAPTER BY ITSELF.

FEEDING THE WORK HORSE

Kansas Climate and Kansas Feeds Produce the Best Among Horses

By DR. C. W. McCAMPBELL

In these days of keen competition and high prices, which necessitate the strictest economy in all lines of business, the problem of feeding the work horse economically, and at the same time such combinations of feeds that will insure the greatest efficiency, has become one of vital importance, not only to the Kansas farmer, but also to the owners of the great army of horses that work in our towns and cities.

When compared with the experimental work done in feeding other kinds of live stock, we see that comparatively little work of this nature has been done in the feeding of horses, and until recent years the general feeding practices have been fixed largely by tradition, custom, or arbitrary rule. While it is true that successful horse feeders, and many transfer, livery and omnibus companies have developed excellent systems of feeding and caring for their horses, still the results of their knowledge and experience have not been available for general use, and there still remains much room for improvement in our horse feeding methods in general.

It will be remembered that the functions of food are to repair the waste of the body, to promote growth in an animal, to furnish heat and energy, and to store up or lay on fat, and for these purposes only the digestible portions of the food is to be taken into consideration.

The nutrients that maintain these functions are ash, protein, carbohydrates and fat. A definite amount of these nutrients is required to insure the most economical performance of these functions; a shortage of any one means an unbalanced ration, and a waste both actual and potential. Too often the wrong concentrate is used because its composition and the function of the nutrient it contains are not clearly understood. It is well, then, to note carefully just what part each of these nutrients play in maintaining these functions.

1. Ash is the residue after the combustible portion of the feeding stuffs have been burned in the body. It consists chiefly of lime, soda, potash, magnesia, iron, sulphur, etc., and is found principally in the bones, though it is also found in small quantities in other tissues of the body. A considerable supply of ash is found in all our common feeding stuffs.

2. Protein substances are those which contain the element nitrogen. All the other nutrients—ash, carbohydrates and fat—contain no nitrogen and are often spoken of as non-nitrogenous nutrients. Protein substances, or flesh formers as they are often called, go to form the muscles and also enter largely into the composition of the skin, tendons, blood, nerves, hair, internal organs, etc.

Protein may also furnish, when occasion requires, material for the production of heat to maintain the warmth of the body and muscular energy. It is held by many to be a stimulant to muscular and functional activities in general; and probably forms some body fat. No substance that does not contain

nitrogen can be substituted for or converted into protein. Hence, the absolute necessity for a certain amount of protein material in a horse's ration. Such feeds as cottonseed meal, oil meal, peas, bran, shorts, alfalfa, clover and cow pea hay contain a comparatively high per cent of digestible protein.

3. Carbohydrates furnish most of the energy for the production of heat and work by an animal, and are obtained from the various feeds in the form of starch, sugar and fibre or cellulose. They are not stored up in the body in the form of carbohydrates, but are converted principally into glycogen, a form of animal starch which is stored for future use in the liver and muscular tissues of the animal. When this glycogen is needed, it is in turn converted into fat and some are burned immediately to supply heat and energy. Corn, barley, oats, wheat, Kafir corn, and the various hays and fodders contain high per cents of digestible carbohydrates.

4. Fat is found in the various feeds in smaller amounts than either protein or carbohydrates. It is either stored up in the body as fat or burned immediately

to furnish heat and energy. Cottonseed meal, oil meal and corn are rich in fat, cottonseed meal containing about three times as much digestible fat as corn.

We see, then, that heat and muscular energy may be produced, first and principally from the carbohydrates, then from the fats, and lastly, if necessary, from the protein substances. But we must bear in mind the fact that fat is worth about 224 times as much as either protein or carbohydrate in the production of heat and muscular energy.

Fat in the body is produced from the fat of the food and also, to some extent, from the carbohydrates of the food eaten, but the protein in the body is produced only from the protein contained in the food that is eaten.

So much for the nutrition phase of this discussion. The real question is, "What feeds or combinations of feeds can we feed the work horse here in Kansas most economically and at the same time the most satisfactorily?"

Of the many grains used throughout the country as a horse feed, none are more popular than oats. They are keenly relished, and the nutrients they con-

tain are just about the right proportion to make a balanced ration; but the idea that they contain an element which gives a horse more spirit and energy is only one of a number of popular fancies or traditions. If a horse be fed on any other suitable ration and kept in a healthful and thrifty condition, he will have just as much life, spirit, and endurance as he would if fed upon an oat ration. Oats alone are a safe concentrate to feed because the hulls mixed with the grain make a lighter and looser mass in the stomach, allowing the digestive juices to permeate the mass more thoroughly, thus insuring a more perfect digestion. This is a point worth considering in feeding many concentrates which should always be mixed with bran, chopped hays or something to prevent packing in the stomach. This tendency to packing is more pronounced in a horse's stomach because of the absence of a churning or mixing motion. But with all the advantages possessed by oats, they are not an economical horse feed in most sections of Kansas. It is a noteworthy fact that the quality of oats in many parts of the United States has been deteriorating for the past few years, and in Kansas the acreage, as well as the yield per acre, has been decreasing for the past twenty years. In 1888 we find the acreage given as 1,656,814, which averaged 33 bushels per acre, while in 1908 the acreage was but 831,159, and the average yield 20 bushels per acre. These conditions have helped to raise the price of oats to such a level that they can no longer be considered an economical horse feed in most parts of our state when we compare their cost and feed value with the cost and feed value of other available feeds. So a problem we have before us is to select a grain or combination of grains that will take the place, either entirely or partly, of oats in our horse feeding operations.

Of the many feeds available and that might be substituted, perhaps corn is the one used most, especially in middle and southern portions of the corn belt, thousands of horses in these regions not knowing the taste of any other kind of grain. The high per cent of carbohydrates and fat (heat and energy sources) it contains and its comparative cheapness should not be overlooked in preparing rations for our work horses.

At the Ohio Experiment Station extensive experiments have been conducted comparing the value of corn and oats as a ration for work horses, with the following results:

1. Corn-fed horses endured hard work during the hot weather as well as the oat-fed horses.
2. The use of corn for forty-eight weeks, to the exclusion of other grains, was not detrimental to the health of the work horse.
3. The use of corn did not induce laziness and lack of endurance; neither did the use of oats induce increased spirit or endurance.
4. With mixed hay (clover and timo-

(Continued on page eighteen)

Photographs of Kansas Farm Scenes Wanted.

Liberal Payment for Good Ones.

KANSAS FARMER wants a number of good photographs of Kansas farm scenes. Not necessarily photographs of the largest farms and farm buildings, although these are very desirable. If you have or can get a photograph of a good view of your farm, send it in before December 30 next.

For each of the three best photos submitted we will send a check for.....\$5.00
 For each of the five next best ones we will mail a check for... 3.00
 For all others submitted and judged good enough for the purpose of this competition, we will pay for each..... 1.00

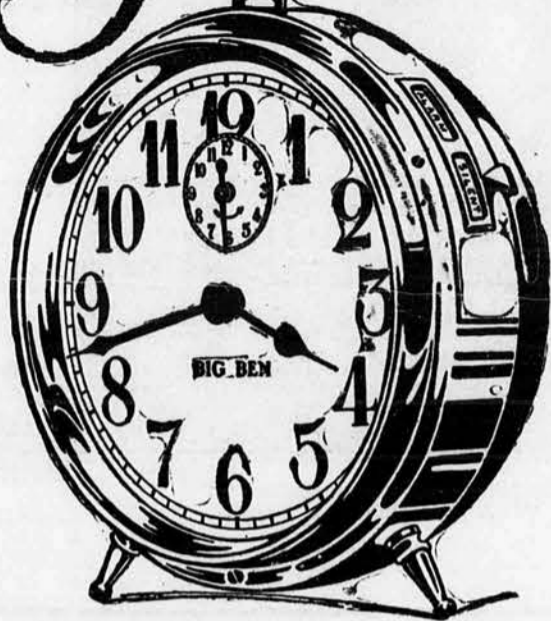
What the Photographs Should Show.

Preferably a view taking in the principal farm buildings, houses, barns, windmills, silos, hog houses, cattle sheds, etc., with roadways, trees and fences, in the building plot.

However, any unusual view or scene of the farm that may show the result of particular method of arrangement or system of production, will have equal consideration. Photos should be from plates larger than 4 x 5, and finished in sepia on some paper other than Velox or similar ones.

The editor will decide on the merits of each photograph, and send out checks in payment of those selected, as he may place their value. All photographs submitted are to become and remain the property of KANSAS FARMER, with full right to use as it may desire. Sender's name and address must be written on the back of each photograph submitted. Address photographs to
 KANSAS FARMER, Topeka, Kansas.

Big Ben



Merry Christmas! Here is Big Ben. May he wish you many of them!

Don't waste a minute of this merry day. Have the presents ready Christmas eve. Hang each stocking up. Arrange the presents that won't go inside in little piles around each stocking.

Then, when all have gone to sleep, sneak into each bedroom a jolly-faced Big Ben.

He'll ring the merriest Christmas bell you have ever heard and get the family down to see the presents bright and early so the whole day will be yours to fully enjoy.

Big Ben is a gift worth the giving, for he is a clock that lasts and serves you daily year after year.

He is not merely an alarm clock—he's an efficient timepiece—to

get you up or to tell the time *all day*—a clock for bedroom, parlor, library or hall.

Big Ben stands seven inches tall. He's massive, well poised, triple plated. His face is frank, open, easy to read—his keys large, strong, easy to wind.

He calls you every day at any time you say, steadily for ten minutes, or at repeated intervals for fifteen.

He is sold by jewelers only—the price is \$2.50 anywhere.

If you cannot find him at your jeweler's, a money order sent to his designers, *Westclox, La Salle, Illinois*, will bring him to you express charges paid.

Five Crops of Alfalfa in One Season the Record of Sacramento Valley, California

Alfalfa, which has made wealthy more farmers in the irrigated West than any other known product, is grown to perfection in California. Five crops, with the corresponding profits, are not uncommon in this marvelous state.

And there is still enough land in California for you, and more is being put under water every year.

When you have made up your mind to sell your farm in the East and take the money to buy 40 acres, which will make more money in California with not so much work, travel over the

Union-Southern Pacific

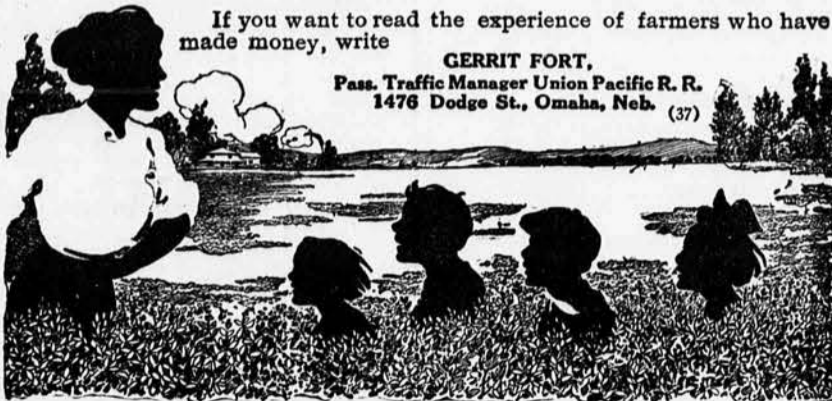
STANDARD ROUTE OF THE WEST

Electric Block Signals

Excellent Dining Cars

If you want to read the experience of farmers who have made money, write

GERRIT FORT,
Pass. Traffic Manager Union Pacific R. R.
1476 Dodge St., Omaha, Neb. (37)



KANSAS WESLEYAN BUSINESS COLLEGE

THE EFFICIENT SCHOOL FOR BANKS AND RAILROADS.

Furnishes more Bankers, Civil Service help, Commercial Teachers, R. R. Stenographers, and Telegraphers, than any other school. U. P. contracts to take all our male operators, and allow salary while learning. We guarantee position for complete course or refund tuition. Twenty instructors, eighteen rooms, one thousand students. TERMS REASONABLE.

NEW FEATURES—Farm Accounting, McCaskey Register, Wireless Telegraphy. Write for catalog and Free Tuition Prize Offer. No agents out to get you to sign up. Address, T. W. ROACH, Pres. 201 S. Santa Fe, Salina, Kansas.

THE FARM



It is time now to be thinking about next year's work. This is the time for planning. A plan made now can be changed a dozen times before work begins next spring. If you wait until next spring you will awake some morning to find the frost out of the ground, and the warm sun calling you to the field will cause you to plan the season's work on short notice and possibly result in a grave mistake. The season's farm work ought to be so well settled in your mind that when spring work begins you know just what crops are to be planted, how many acres of each, how long it will require to plant each, and the date on which planting will begin, weather permitting. I well recall a neighbor who planned his work to better advantage than any other man I ever knew. That man could accomplish more work than any other two men I have ever seen. He was always crowding the work. The work never crowded him. He was successful, too. Try it.

There is a lot of work to be done this fall and winter while you are planning. One thing demanding prompt attention is that of cleaning up the farm. The country is full of chinch bugs. Last season was favorable to their growth and increase, and so has been the fall. You have millions snugly housed in the bunch grass in the fence rows and along the roads and along the hedges. Burn the grass just as soon as you can. By burning the grass and cold weather following practically all the bugs will be destroyed. You should not be content to alone do this. Get the neighbors to clean up. Try to organize the farmers of your township into a chinch bug burning brigade.

You can scoff at book farming as much as you please, but sooner or later you will be forced to recognize the merit of the work of that grand body of men which make up the force of our experiment stations. I think the chinch bug burning campaign a year ago in Sumner County, Kansas, when an area of 17½ miles of farm land was burned over, will well illustrate the value of the expert. The burning was done under the direction of Dr. T. J. Headlee, entomologist of the Kansas Agricultural College, and with him every farmer in the area co-operated.

The 1911 crops harvested in the burned area were much better than those in the surrounding territory—this condition attributable to the absence of chinch bugs. A. E. Berry, a farmer in the burned district, says that destroying the chinch bug infested grass made him nearly \$1,000. In the 17½ square miles a saving of about \$7,000 on the wheat alone must be attributed to this burning. That is more than it cost the state to carry on all its bug investigations. Wheat on the burned area averaged 2.1 bushels, worth \$2 more an acre, and the oats, which were only slightly infested with bugs, yielded a little less than one bushel an acre more on the burned ground than on the unburned ground. Corn fields adjacent to fields of small grain in the burned districts had no corn sucked dry and killed at harvest time, while corn fields in the unburned territory showed from one to forty rows ruined.

Doctor Headlee and his assistants have learned that the bugs establish winter quarters in the clumps of bunch grass and patches of big blue stem. Bunch grass is seen as a feature in every part of the state infested with chinch bugs. It was learned, also, that while some bugs sought winter shelter in weeds and piles of rubbish and crevices of some sort, practically every one thus protected perished before spring. So the bunch grass was burned and observations lead to the belief that during the past summer the bugs on the unburned area have ranged from six to twenty times as numerous as those on the burned section. To locate the home of the chinch bug is a valuable discovery. Now that we know where to find him, let us show him no mercy.

The shortage of roughage in some sections will cause wheat to be pastured

closely and at times when stock should not be on the ground. If it is a matter of pasturing the wheat or selling the stock, I would use the wheat crop to save the stock. Whether wheat be pastured or not depends wholly upon the season. In the Kaw valley wheat has grown rapidly this fall and pastured when the ground was dry was the part of wisdom. If the wheat is small and the ground dry and loose, as it is in many sections this season, pasturing would do the wheat no good. Small growth cannot help but result in very close cropping, and that is dangerous. It is judgment that fall pasturing under favorable conditions is not likely to result in damage. Spring pasturing is often disastrous. To determine the effects of late spring pasturing, the Kansas Agricultural College mowed, last spring, an acre of wheat growing upon low, rich ground. The weather following was very dry and the yield was about half that which was not mowed. If there had been sufficient moisture after cutting, the difference in the yield probably would not have been so great.

I see from the country weeklies the farmers throughout the state have organized community clubs to prevent destruction of quail by hunters. This move is a good one. I hope the state will by law eliminate the open season and prohibit the shooting of quail. About one-fourth of the cultivated crops of the United States are destroyed by insects every year. The quail is one of our most important insect destroyers. From June until September the quail ration consists of over one-third insects. He prefers insects that are the farmer's worst enemies. He is especially fond of potato bugs, wire worms, cut worms and grasshoppers. A quail will eat from fifty to one hundred potato bugs or grasshoppers every day if the insects are abundant.

Do you begin the winter with the barnyard clean? If not, it ought to be cleaned or its condition will cost you money before the winter feeding season is over. The depreciated value of the manure will in itself be quite a loss; but stock do not thrive in a yard knee deep with manure. Cattle and hogs that are compelled to wade knee deep in manure and filth and sleep in damp, unsheltered places cannot consume enough feed to keep in a gaining condition when the weather conditions are unfavorable. The manure spreader has simplified the matter of getting out the manure. In the manure can be handled faster at with less labor. The spreader results in greater good from the manure, too, on account of better spreading and thin spreading, by which latter more acre can be manured. If when you are ready to haul out the manure the cultivated fields are too wet, do not use that as an excuse for not going on with the hauling. A top dressing on the alfalfa field will pay big—likewise on the prairie or tame grass pasture. Manure, a valuable product of the farm, to which too little attention is given. We must seriously begin a study of how to use it to best advantage.

On the farm of O. E. Walker, one of Shawnee County's best farmers, Thanksgiving day I saw cows which were giving a summer flow of milk on a ration of Kafir silage and alfalfa hay. Not one bit of grain was being fed. Walker says silage and alfalfa hay producing for him this winter as much milk as he has been able to get all other year on the best grain rations. He has been able to feed. Think of it! Kafir roughage placed in the silo with a loss of less than 10 per cent in weight from the field to the cow, and alfalfa hay with no corn, bran, oil meal or anything else, producing a summer milk flow on the last day of November. More than that, the Kafir, when in a silo, is ready for feed, requiring no hauling, no chopping out of the ice. Mr. Walker says he prefers corn silage to Kafir. Yet, corn is the ideal silage crop. But, in western Kansas, where Kafir grows and corn refuses, think what a combination of silo and Kafir would mean.

Seven Choice Washington County Farms at Public Auction

At Washington, Kansas

Wednesday, Dec. 20, 1911

Nearly 1,000 acres in all, located in the fertile Mill Creek Valley, 2½ miles from Washington. These farms range in size from 74 acres to 160 acres. Each farm has some as good farm land as lays out of doors. Good water, some timber, etc. All farms are served by rural mail service and mutual telephone. The improvements on most of these farms are moderate but comfortable. Washington county is one of the best counties in the state for diversified farming and stock raising. Some of these farms are ideal for dairy purposes. This part of Kansas is the natural home of alfalfa, and hogs can be produced cheaper here than in any part of the middle west. These farms will be sold separately to the highest bidder on above date. Free transportation will be provided between now and sale day for parties wanting to inspect the lands. Come and investigate and talk with the successful farmers that own land adjoining this tract. Sale will be held in City Hall, beginning at 2 p. m. Very attractive terms will be made purchaser. Write for illustrated catalog, giving description of each tract, terms, etc., to G. Wertman, Sales Manager, Washington, Kan. Owners,

A. E. SWEETLAND, Blue Rapids, Kansas

FRED OCHNER, Washington, Kansas

G. WERTMAN, Washington, Kansas

Fieldman—Jesse R. Johnson.

Two 80 Acre Farms at Auction, Thurs. Dec. 14.

Four Miles Northeast of Riley and 7 Miles Southeast of Leonardville, Kan.

80 acres, about 45 acres in cultivation, 8 acres alfalfa, balance pasture, good 5-room house, arch cellar, new barn 34x52, with room for 90 tons hay, cattle shed, etc., bearing orchard, cribs and other outbuildings, good well and windmill.

80 acres, across road from above, about one-third under plow, balance pasture with never failing spring water. These farms are ideal for stock raising, dairying and diversified farming. Close to market, church and good schools, 20 miles from Kansas Agricultural College. Will be sold to the highest bidder without reserve. Sale at 2 p. m. For further information, terms, etc., write owner.

EDWARD KIENINGER, RILEY, KANSAS

Auctioneer—James F. McCulloch. Fieldman—Jesse Johnson.

Young Man!

Don't Waste Your Money this Winter.

Take the Farmers' Short Course at the State Agricultural College. You Get a Condensed Education of Immediate Value.

It Begins January 3—Lasts Ten Weeks.

Here's a course arranged for you as to hours and classes. It is made up of the important things you need to know and MIGHT NEVER KNOW IN A LIFETIME. The 10 weeks' expenses should not be more than \$50 or \$60. You throw that much away every winter. Open to young men over 17 years of age.

Don't forget the State Farmers' Institutes December 26 to 30. Fort Short course bulletin or catalogue apply to

Henry J. Waters, Pres., Box 27, Manhattan, Kan

(Correspondence Courses Offered.)

Sold Last Government Land.
The last acre of government land in Mitchell County, Kansas, was sold a few weeks ago. The tract was composed of

40 acres of pasture land that had been left when homeseekers for half a century have taken up farms in Mitchell County. It was sold for \$1.25 an acre.

FARM POWER

DEVOTED TO GASOLINE ENGINES, TRACTORS
TRUCKS, AUTOMOBILES AND MOTORCYCLES

Motorcycle "Drummer."

An Oakland, Cal., traveling man who has forsaken trains for a motorcycle, has proved to his own satisfaction that the new method brings a saving in time as well as in expense. He recently returned from a 256-mile trip, having been absent from his Oakland office just 48 hours.

He made calls at nine towns and figures that it would have taken four days to make the trip by train. His total expense was \$1 more than his railroad fare would have been. He thus saved two days' time, hotel bills and the large item of "extras."

Fuel Cost for Plowing.

In the plowing contest in which the world's plowing record was broken and reported in these columns, the engines were operated on a low grade of kerosene distillate costing but 4 cents per gallon. The three engines consumed a total of but 22 gallons per hour, reducing the fuel cost to less than 6½ cents per acre. To do work equal to the capacity of this monster contrivance 100 men, 200 horses and 50 plows would be required; an investment in equipment and power of nearly \$50,000, a pay roll of \$150 per day, and a cost for board and feed of \$125 per day.

Auto Tire Care.

Regarding automobile tire care the United States Tire Company is sending out this:

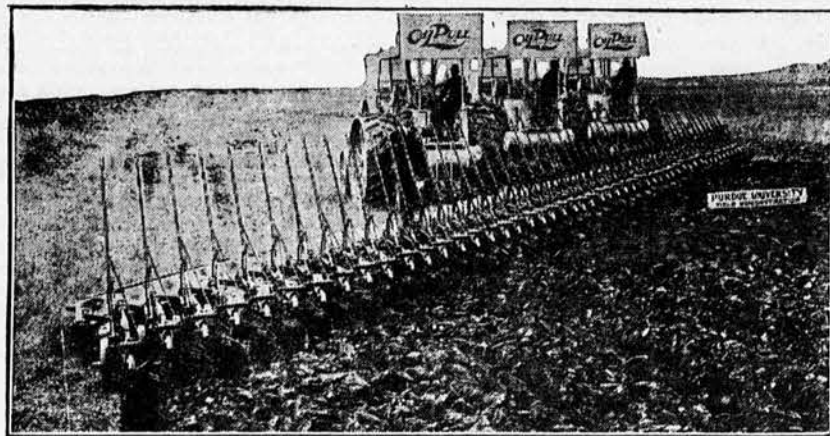
"When you lay up your car for the winter, remove the tires. First wash them carefully with soap and water, and then wrap them in strips of paper or cloth. Store them in a dark place which is kept as nearly as possible at a temperature of 50 degrees. If the tires are to remain on the wheels for a

thereon in raised type cast with the tire or casing." The tire makers object to the new law on the ground that it does them an injustice. By marking the date on they are likely to meet objection on the part of purchasers. For instance, 1911 tires made in the fall of 1910 may not get on the market until the middle of the summer, and being marked 1910 there likely would be a demand on the part of the purchaser that he get the tires as seconds or old tires.

The breaking of world's records is always interesting, but the breaking of a world's record in plowing is worth more to the farmer than the breaking of a track record. This picture is that of three oil pull tractors which hitched to one unit of 50 plows turned a stubble field at the rate of one acre every four minutes and fifteen seconds. This wonderful performance occurred at Purdue University, Indiana, October 14. This monster machine of fifty 14-inch plows in a single unit cut a strip nearly 60 feet wide, and required only four men to operate it.

Fifty years ago a farmer with his team of oxen toiled from dawn to sunset to break an acre of ground. Often one man was required to drive the team, while another held the clumsy plow, walking more than ten miles to each acre. Today, through the development of modern machinery, it is possible in the same number of miles of travel to plow 70 acres, and in the same period of time to turn almost a quarter section.

It would seem that this mammoth gang could be of practical service only on ground absolutely level, but the demonstration proved that the plow readily adapts itself to uneven ground. Each of the fifty bottoms was independent



WINNING BIG IN WORLD'S PLOWING CONTEST.

considerable length of time when the car is out of service, jack up the wheels and leave only about five pounds of air in each tire. This keeps the tubes in shape and also keeps them soft and pliable. When the wheels are not jacked up and the car is allowed to stand for any length of time, the tires should be kept well inflated and the car moved occasionally, so that the tires do not flatten from standing too long in one spot."

Must Make Bridges Strong.

An important ruling has been made by the state supreme court in Pennsylvania in regard to the strengthening of bridges for motor cars. The district court held that although a bridge which had broken down with a motor truck loaded with two tons of flour was sufficient for all demands when erected, it was the duty of the county since the introduction of the motor car to strengthen all bridges to such an extent they would be equal to all traffic requirements. The supreme court confirming this decision means that hundreds of thousands of dollars will be expended within the next year in improving bridges and culverts throughout the state.

Minnesota Says Put Date on Tires.

The Minnesota legislature has slipped through a new law which has stirred up the tire trade and which is far-reaching in its effects. The law says: "No person shall sell any rubber tire or casing for use on motor vehicles unless the name of the manufacturer and the year in which the same was made are conspicuously and permanently marked

of the others, rising and falling as easily and naturally as a wooden chip on the surface of rough water. The frame itself was pointed every six feet to meet the longer undulations of the ground, and thus keep the plow beams in their proper positions relative to the ground surface. Then five bottom sections were yoked together by the ordinary Oliver method just like so many parts of a sectional bookcase, and they formed a complete, symmetrical plow, a feat impossible except with this small unit type of construction.

Prof. W. M. Nye, head of the farm mechanical department at Purdue, pleased with the splendid success of the demonstration, said: "At least four years ago I predicted that this sort of thing would come into use on many Indiana farms. One great objection has been that fields were too small. The maneuvering of this battery of immense engines and fifty plows in one twenty-acre field is a denial of that objection, and proof positive that the small type 'F' Oilpull yonder hauling five fourteen-inch Oliver plows is entirely practicable in Indiana." President Stone of Purdue University, after observing the results of the wonderful demonstration, exclaimed: "I am glad I have lived long enough to see this. Farmer after farmer has objected that these great engines would mash the life out of the soil. I wish some of them could be here and see how wrong they are. There is no reason why power farming is not practicable."

Don't think all motorcycles are noisy because a few riders keep the "cut-out" open instead of carrying a horn.

LIVE STOCK



Sheep feeders did not fare so well in Kansas last year, but the prospects have brightened so they actually seem good. Chicago reports show that the sheep men who have seen the trend of things have been buying liberally of feeder stock, as there now exists an unusual combination of extremely short numbers and low prices.

One of the most serious phases of the hog cholera situation is to be found in the fact that the markets are glutted and demoralized by large shipments of immature and poorly fitted hogs. The disease itself is bad enough, but the scare which results in such shipments just doubles the injury. Yet what can be done? The only solution seems to be to require the scientists to work overtime and discover a remedy for the disease.

If there is such a thing as luck, that man who has some growing hogs and some brood sows which he can save over for the spring farrow surely has some of it. From present indications hogs will be hogs next year, and the breeder who is prepared to supply his customers will reap his reward in good prices. If reports are to be relied upon, the man with the hog will be "in it" during the next two or three years, and he certainly is entitled to it.

With the present price of corn the cattle feeders are looking about for any ration or combination which will bring results and at the same time cost less money. The silo has perhaps proved the greatest economy in this emergency, as it will in any other, but there are yet some feeders who do not use ensilage, and they are turning to other things. A big Kansas feeder says that heretofore he has depended upon corn and alfalfa, but now he is adding cottonseed meal to the ration in the belief that it will hasten results and perhaps cheapen cost.

Hog cholera is not caused by feed or the condition of the pen. It is a germ disease which is transmitted from herd to herd and from hog to hog. Poor feed and a filthy pen will invite this disease by lowering the vitality and resisting power of the hog, which is the most delicate of all farm animals in some respects. Hogs kept on pasture with plenty of exercise, good feed and pure water are very much less likely to contract the disease because of their vigor of body. Hogs on pasture in summer or with plenty of alfalfa hay in winter not only maintain their health, but grow into money much faster than dry lot hogs.

Did you ever think of the camera as a useful farm tool? Perhaps not, and yet it can be made a valuable one. Take live stock, for instance. On every farm there is, or should be, more or less of live stock for sale. In advertising these animals many replies are received from men who might easily become buyers if they could see the animals, but who hesitate when compelled to buy "sight and unseen." A good photograph of the animal sent with your answer to his questions will prove the best possible substitute for a personal inspection. This indicates the utilitarian value only, but the pleasure to be derived from the use of a camera is hard to measure.

One-third of the state of Illinois, the southern part, is worn out, and the soil depleted of its strength, according to a statement sent out by the Farmers' Institute. The soil in that region is lacking in humus and is deficient in phosphorus and nitrogen. It is also "soured," and the problem of bringing back its producing power is a serious one. This section has long been known as Egypt, because the people from surrounding countries could go down into it to buy corn. The present condition is undoubtedly due to the long period of continuous corn cropping, and the authorities are now urging a rapid change to live stock farming, with special stress upon dairying and sheep raising as not only the most rapid means of restoring the soil, but perhaps the only one. It is

urged that nothing but wheat should be sold off the farm, and all other farm crops fed to live stock. This once rich section of a noted corn state furnishes an example of what is sure to come to other sections if the grain-farming and crop-selling methods prevail.

Combine Shipments to Help Farmers.
The merchants of Wamego, Kan., have combined in a produce association and in the future all eggs, butter and poultry brought there by farmers living in the surrounding country will be bought at one headquarters. The produce will be shipped to markets from the same single source. The merchants have formed the organization, they say, for the purpose of enabling them to pool their shipments, thereby gaining in market prices. The increases they will receive will be given to the farmers in increased purchase prices.

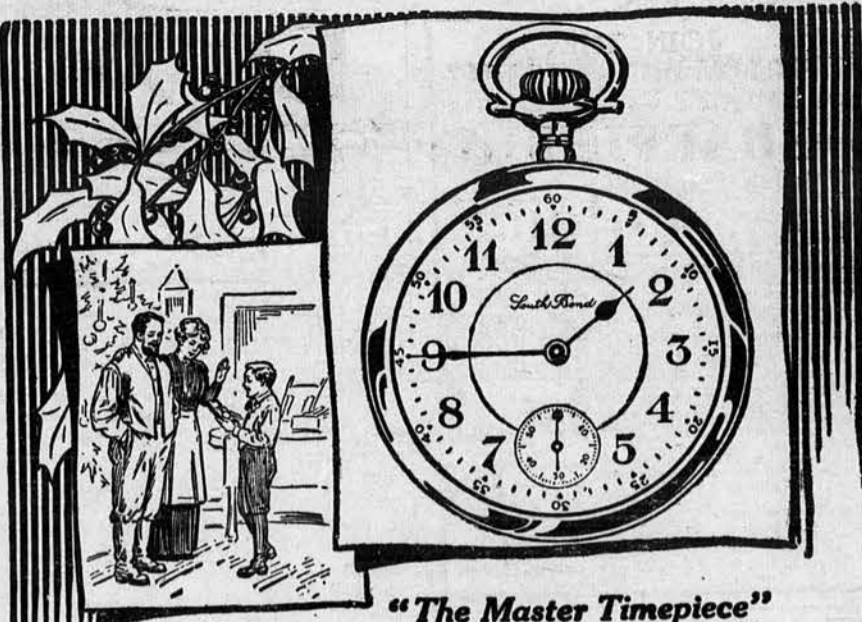
Breeders' Association Acts.
The Mitchell County Breeders' Association, Beloit, Kansas, sends official notice that it has dropped the name of J. M. Keppel from its rolls and recommended a similar action to the Percheron Society of America, of which he was also a member. There were two charges. One, that in Mr. Keppel's sale, held on March 30 of this year, he substituted a colt foaled by a French draft mare for one foaled by a Percheron mare, and the other that he substituted French draft colts for Percheron colts in order to receive prizes from the Percheron Society of America.

Horse Feeding.
The Illinois station recently made some valuable experiments in feeding work horses, and have developed some useful information. In making the experiments about one-half the hay ration was fed at night, a little more than one-fourth in the morning, and less than one-fourth at noon. A comparison of clover with timothy showed slightly in favor of clover. Using chaffed hay with grain showed some gains, but not enough to pay for the chaffing. Alfalfa compared with timothy showed a saving of four pounds of grain per day in favor of the alfalfa-fed horses. Alfalfa-fed horses required one-fourth pound less of grain and one-third pound less of hay per day than did clover-fed horses. A ration of corn and alfalfa resulted in the saving of four pounds of grain per day when compared with a mixed ration of corn, oats, bran, oil meal and a hay ration of three parts timothy to one part alfalfa. When ground grain was compared with whole, the saving amounted to only 9 per cent, and this was not enough to pay for the grinding.

High School Busy With Farm Topics.
We are gradually coming to the place where the boys and girls in the country schools have a chance to learn something about the affairs of every-day farm life. It has taken much work to secure laws providing for the teaching of the fundamentals of agriculture in the district school, and following such provision as has been made the results are gradually coming to the surface.

Prof. A. A. Miller, of the Chase County high school, Cottonwood Falls, writes that he has equipped his school with an eight-bottle Babcock milk and cream tester and the class in agriculture has mastered the process of milk and cream testing. The class will test milk or cream for anyone living in the county. By this means the farmer can determine the value of the milk from each individual of his herd and know the relative value of his cows. The class has already tested the germinating powers of many samples of seeds and have had demonstrations in grafting.

Prof. Miller will arrange for meetings in every part of the county on Friday afternoons or evenings at school houses or other convenient places of meeting where he can meet the farmers of the community and get before them matters of great importance agriculturally. This sounds like business, and shows what a willing teacher can do. Notice is hereby given that other county high schools can well afford to follow the example of Chase County.



"The Master Timepiece"

How to Make Your Boy a Better Farmer

SHOW your boy how to "lay out" his day's work on the farm by the hour and how to follow out his plan with the help of a good watch. GIVE him such a watch—a South Bend Watch—FOR CHRISTMAS. Show him that systematic farm work doubles the efficiency of everyone and brings BIGGER CROPS, and MORE MONEY FOR ALL OF YOU. Think this over.

The South Bend Watch is called—and IS—"The Master Timepiece." It takes six months just to make the parts, and sometimes another six months to adjust and regulate it so the watch will keep SOUTH BEND TIME, which means PERFECT time. Each watch is inspected 411 times and after it is ready for shipment must run accurately for 700 continuous hours before it is O. K.'d by the Master Inspector. This is the famous watch that keeps time frozen in a cake of ice. Engineer Floyd of the "Twentieth Century Limited," between

New York and Chicago, carries a South Bend. It has run for the past five months without losing enough to detect on the minute hand. Think of that! YOU can have as good a watch.

Ask your jeweler about the South Bend and about the necessity of regulating the watch to your personality—something no mail order house can do with a watch.

Write for our free book, "How Good Watches Are Made." It tells all about watches.

You can get a South Bend Watch in a solid gold case for \$75, or in less expensive cases at prices within anyone's reach. Give one to the boy this Christmas.

THE SOUTH BEND WATCH COMPANY

Dept. 275 South Bend, Ind.



"South Bend" Watch

Mention Kansas Farmer When You Write

Send for Free Books on Deep Tillage



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DAIRY



It is not unusual to get a letter from a western Kansas farmer saying that on account of the scarcity of feed he must sell some of his cattle. The farmer who is short of feed is confronted with a serious situation. This year all sorts of roughage is high in price—in fact, in some sections it cannot be bought at any price—and this condition cannot help but force the sale of cattle. To the western farmer the sale of his milk cows is especially serious, and every turn possible should be made to hold them. This is not because of the loss from cream sales, but particularly because western conditions of soil, rainfall and climate, make the live stock business—and the growing of cattle particularly—an absolute necessity to his permanent prosperity. With the milk cow gone the western farmer is without that source of revenue which keeps his grocery bills and running expenses paid up, and also without the foundation stock necessary to increase or rebuild his herd next season. Such farmer is justified in going to any extreme necessary to winter his breeding stock. Just what the farmer can do is for him to decide. But, by all means, keep the cows.

If necessary the farmer can well afford to borrow money at the prevailing rates of interest to buy feed. If he can get the feed he begins at once to realize on the investment because he has cream or butter to sell and the cows will be dropping calves between now and spring. The banker is the farmer's best friend. He knows what it means to have the territory of his trade depleted in breeding stock. He knows what a stoppage in cream sales mean to himself, as well as to the merchants of his town. Consult your banker on this as well as other matters—his advice is good whether it pertains to loaning money or something else. The bankers of this country have loaned money to farmers with which to buy cows and cream separators and silos, showing his faith in the dairy and live stock side of the country's business. I would borrow money only as a last resort, of course. But careful management in the maintenance of the herd, it seems to me, could not possibly result in loss. With the grass of next spring will come a demand for cattle at prices much higher than the present. The days of low-priced cattle are past. The business man placed in a similar position would borrow if he could and consider that he was not taking long chances. I would not borrow money to feed cows to make milk, but would do it, I think, to keep my herd. And while feeding and keeping the cows I would get out of them all the milk I could.

I have a letter now from a western farmer who says he has very little feed and not enough to keep his cattle through the winter. He has some sorghum and Kafir roughage in cock, some shock corn and prairie hay, and two old straw stacks. He adds that he will dispose of his cows because they eat the most, and keep his young stock. I know how this farmer feels, because I have been in a very similar situation. The western farmer, particularly, should think twice before he depletes his herd. The above letter will form a basis for remark.

"Necessity is the mother of invention" is an old and, I believe, true adage. When a man is determined he usually finds a way to effect the accomplishment. When feed is scarce and high-priced it is up to the farmer to in some way make the feed go the whole distance and to get everything out of feed there is in it. I have experienced such conditions on the farm, and have by various turns carried the stock through on a seemingly small quantity of feed, or by the use of something which ordinarily would not be regarded as feed.

I do not know how much feed of the several kinds the above mentioned farmer has, neither do I know how much stock he has. But the question confronting him is that of making the feed go as far as it will. I would at once get the sorghum and Kafir well stacked in the

barn yard. The chances are that not yet has it been badly damaged by rains, snows or by winds blowing dirt and sand into it. The loss from these sources has been estimated as high as 40 per cent. I would at once arrange to prevent that loss by stacking. I would stack the shock corn also. If it has nubbins in it I would husk them out before stacking. The prairie hay and straw are probably damaged as much as they will be, and can as well remain in the field.

The matter of feeding is the important thing. To feed economically dry buildings or sheds are necessary. Our correspondent no doubt has buildings—if not some of the old straw might be used for sides and scrap lumber or cheap prepared roofing as a roof. In this respect the best possible arrangement should be made. A dry bed and protection from the worst storms is necessary for the greatest economy in feeding.

I would feed as much as possible from mangers or racks—the young stock from good racks and the cows from mangers. A good 10 per cent loss in feed results from careless feeding methods. Construct the racks so that feed cannot get trampled under foot. Do not store too much feed at one time in the racks—fill them often and the feed will be more appetizing and less wasted. Give the milk cows a feed night and morning in mangers. For this feeding use the choice roughage. Let the cows pick at the rack through the day with the young stock.

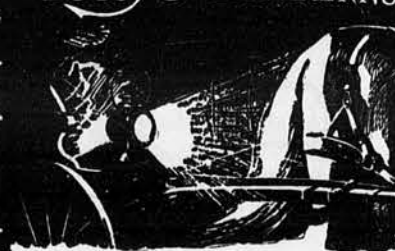
In the rack the bright straw should be fed, but do alternate straw with other roughage. The animal—whether cow, hog or horse—appreciates a change of diet. The animal will in a variety eat feed it otherwise would not eat. The bright sorghum and Kafir I would feed the cows, aiming to dispose of the sorghum first. That part of the sorghum not eaten from the mangers by the cows should be placed at the disposal of the young stock. If there are pigs on the farm, give them a chance to chew on the butts of the stalks. Dispose of the Kafir following the sorghum. Kafir roughage keeps better than sorghum. Feed the corn fodder last. But it will be necessary to use some of each all along for variety's sake.

If our correspondent can get a thrasher to shred the Kafir or cane he will get more good out of these feeds. If shredded it should be stored in a building protecting it from the rain. A covered corn crib would fill the bill. This shredded roughage dampened from day to day will be improved from a palatability standpoint. Shredded corn fodder in many sections is regarded as a choice feed. It is fed in troughs or mangers, of course. The roughage should not be wet when shredded—this to prevent moulding.

I have seen shredded fodder fed milk cows and fattening steers when it was moistened as above and with it mixed the grain feed. Assuming that our correspondent has husked some nubbins from his fodder I would grind corn and cob. Sweep mills for this purpose are a part of the equipment of most farms. I cannot assume that our correspondent will have shredded fodder, and will not discuss the mixing of corn and cob meal with it.

If the supply of corn will permit, the milk cows should have a feed twice a day. The amount fed will depend upon the supply also. It is wonderful how just a little grain daily will make up for a scarcity of roughage. As the feeding season progresses and the young stock tire of the roughage ration, a small feed of grain night and morning two or three days a week will help wonderfully. I have fed wheat straw put through a cutting box and dampened and just a little grain mixed therewith. This makes the straw more palatable, and wheat straw has some feeding value—a great value when there is nothing else and if it can be prepared in such way that the animal will eat it.

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The Kafir of our correspondent may have some heads and may have been cut and shocked in a way that the heads can be cut off and saved. If this is so, by all means remove the heads. Every farmer knows how this is done. Grind the Kafir heads and without threshing the seed. This gives a product similar to corn and cob meal and can be used in the same way. It will pay this correspondent to grind this year. He cannot afford to feed corn or Kafir whole this year.

The cows to be milked should have the choice of the best. They will be called upon to provide the cash which will keep the grocer paid up. But milk the cows giving the most milk. Those having been milked all summer should be allowed to rough it with the stock cattle. The milch cows should be given the best stabling conditions will permit. The calves dropped between this time and spring should have good care. Each mother will produce enough skim milk for her calf, but at the age of three weeks each calf should be eating a little grain.

Do not overlook the necessity of plenty of water at as near well temperature as possible. Water is not exactly a food, but the animal cannot get along without it, and animals having plenty of water do better than those which do not get enough.

I know that the above contains suggestions not out of line with the circumstances which inspire the remarks. It may be necessary for our correspondent to reduce his herd—but do not sell more stock than absolutely necessary. Carefully estimate the quantity of feed and the feeding season and go at it. A little extra work will make the feed go farther. Above all things, do not let it be your fault that you are again short of feed. A Rush County farmer writes that the hail stripped his corn of leaves and he put the green stalks from a hundred acres of corn in a silo. He says this silo will enable him to keep every hoof of stock in good shape. The silo will help a lot. A desperate effort in the western country will grow feed every year. Two silos on every farm will practically insure feed. Silage can be carried over from year to year. The year of plenty can take care of the lean year if the silo is used. If our correspondent had his roughage in a silo he would not be worrying now.

Scours in Calves.

A McPherson subscriber writes that his fall skim milk calves are scouring badly and that he cannot cure the trouble, having tried all the common remedies.

Scours result from deranged digestive organs. The probabilities are that the subscriber is feeding too much milk. One-half gallon of skim milk at two feeds per day is enough milk. Kafir heads run through a cutting box or cut on a block with a corn knife make a perfect grain feed with skim milk. The Kafir has a constipating effect and offsets the laxative effect of the milk. Reduce the milk to the quantity named, feed a tablespoonful of blood meal in the milk for a few days, and use Kafir or shelled corn for grain feed. Be sure that pails from which milk is fed are kept clean. Allow the calves to exercise freely in the sunlight and keep quarters dry and clean.

Teaching Calves to Drink.

A Fostoria, Kan., subscriber who has never before tried rearing calves by hand, says he cannot get young calves to drink.

Let the calf get a good feed or two from its mother. This is good for the cow as well as calf. Do not offer milk from a pail to the calf for 12 to 18 hours. Let the calf get hungry. Give the first feed of the mother's milk at as near natural temperature as possible. Straddle calf's neck. Insert finger in mouth. If calf is hungry it will suck. If it does not suck it is not hungry, in which case defer feeding for a few hours. When calf sucks, push his nose in the milk, keeping finger in the mouth. A little patience is required. The calf will drink before he starves or is injured by lack of feed.

Silage Does Not Affect Milk.

Some people grasp every possible excuse for keeping in the rear of the procession. A subscriber who retails milk in town says he does not buy a silo, because the milk produced from silage would not be good. For the benefit of this subscriber we quote Prof. Farrington, of Wisconsin, who is a high authority and whose statement is convenient: "Perfectly sound silage, fed to cows in

a well ventilated barn and only in such quantities as they will eat up clean each time, has never been responsible for injuring milk in any way. In fact, the highest-priced milk sold at the present time to the most exacting customers is produced by cows fed silage during the entire year.

"The injury of dairy products by silage fed to cows is caused by the method of feeding at the farms where decayed silage is allowed to remain in the cow's manger and stalls so that the milk absorbs the strong odor which fills the stable.

"Silage odors do not pass through the cow's system into her milk, but are absorbed by the milk as it is drawn from the cow. When this is prevented by careful feeding and ordinary ventilation, silage is an economical feed for producing milk and does not contaminate the milk."

Calves and Ensilage Skim Milk.

A Fall River, Kan., subscriber says he has read in the Practical Dairyman that skim milk from ensilage fed cows is sure death to skim milk calves, and asks what we think or know about it. Not long since a man told me he had heard that ensilage would cause any animal to which it was fed to lose its teeth, and if fed in too great quantities off would come ears and tail. This man had not bought a silo and did not know of a silo in his locality.

It beats the world what stories will circulate and cause thinking men to doubt the silo. I doubt if anything so good as the silo has ever been fought so hard or so successfully delayed by wild-eyed and unscrupulous stories. It seems to be a part of the makeup of a considerable part of mankind to do everything possible to block the wheels of progress. The silo has had more than its share.

Now, to answer the question. I do not believe that skim milk from ensilage fed cows will kill calves. I do not find any analyses of ensilage milk differing from those produced from dry feeds. There is no discoverable difference in the milk from the two feeds. I know hundreds of farmers successfully growing calves on ensilage milk. I know a dozen men feeding ensilage skim milk to the most valuable pure-bred calves in the world. I have never before heard the complaint. I know personally of ensilage feeding for 25 years. I would say to subscriber that there is nothing to the claim of Practical Dairyman. There must be some other cause for calves' death.

To Avoid Milk Fever.

An Abilene, Kan., subscriber nearly lost a valuable cow from milk fever last fall, and since that cow is about to freshen again he wants to know how to avoid another attack.

Unfortunately it is the good milkers most likely to be attacked by milk fever. For at least two weeks before calving, feed a laxative ration. Plenty of green cured alfalfa hay will solve the feed question. If mill stuff is being fed, use bran. Avoid corn, Kafir or any other heating and constipating feeds. A few days before calving, reduce the grain ration materially. Increase feed gradually after calving. Prevention is better than treatment.

In case of milk fever the air treatment is regarded as very successful. The air treatment for milk fever consists in milking out the udder and then filling it with filtered air. This is done by means of a milking tube attached to a rubber tube communicating with a rubber bulb or a bicycle pump. A cotton filter is put between the pump and the milking tube so that the air is filtered before it enters the udder. Instrument makers put up very good outfits at prices ranging from \$3 to \$5, and most any druggist can supply them.

Producing Beef Cheaply.

This judgment from the results of his own experience is challenged by Ralph Moss, an Indiana feeder. Note that he keeps the calf growing, that protein feeds enter strongly into the winter ration, that silage is indispensable and, above all, he must have a well bred, early maturing animal:

"Economical beef growing is the combined result of good breeding, generous feeding and early marketing. The cows, while not necessarily pure-bred, must be good and have at least two top-crosses. The bull, however, should be pure-bred and be early maturing and built along the lines of the model butcher animal. With a calf produced from such parentage and dropped in the spring, I feed corn and grass in addition to the dam's milk until the calf's 'grain stomach' has developed. After about six months I wean the calf and feed during winter a ration

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Petrosote

of corn, clover hay, corn stover and a little oil meal. The calf is then finished the following summer with corn, oil meal and blue grass. By following this method of breeding and early maturity, getting the animal on the market as soon as possible and by the liberal use of silage and other rough feed for the breeding stock, I have found it to be not only pleasant but profitable."

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The GRANGE

DIRECTORY OF THE KANSAS STATE GRANGE

OFFICERS.

Master.....George Black, Olathe
 Overseer.....Albert Radcliff, Topeka
 Lecturer.....A. P. Reardon, McLouth
 Secretary.....O. F. Whitney, North Topeka
 Chairman of Executive Committee.....
W. T. Dickson, Carbondale
 Chairman of Legislative Committee.....
W. H. Coultis, Richland
 Chairman of Committee on Education...
E. B. Cowgill, Lawrence
 Chairman of Insurance Committee.....
I. D. Hibner, Olathe
 Chairman of Woman's Work Committee

State Grange Meeting.

The Kansas State Grange will meet in 40th annual session in Topeka December 12-14. Sessions will be held in Representative Hall, where there will be ample room and pleasant surroundings.

The Commercial Club of Topeka has made arrangements to assist in helping to entertain the visitors, of which we expect a goodly number from different parts of the state, and the visitors will be of a class of which any city may be pleased to entertain—intelligent, industrious producers of wealth.

Headquarters will be at the Fifth Avenue Hotel.

This is not election year and much good work may be accomplished. This session will precede the state and national elections.

The Grange is far removed from partisan politics, but with 1,000,000 intelligent patrons in this country, there is exerted a great influence for the betterment of mankind.

Valley Grange No. 736.

Special reports and business were discussed and acted on. The committee on constitution and by-laws made a partial report and were instructed to go over the secretary's books to find out how many by-laws had already been adopted. The brothers had an animated discussion on the protection of quail and other insect-eating birds, finally agreeing to organize a Farmers' Club, pledged to prosecute and to testify against any person they saw hunting quail on their own or a brother farmer's premises. The sisters then had a spicy discussion on "Substitutes for Potatoes," and "A Good, Easily Cooked Sunday Dinner." The brothers were not a bit backward about taking part in these discussions. It soon became evident that many of the dinners the brothers liked were good, but not easily prepared. Questions for the good of the order then were taken up until closing time, this including plans for making the Founder's Day meeting a public one.—E. GOBSUCH.

Report of Coffey County Pomona Grange.

Good delegations from eleven of our Granges were present at this meeting. Bro. Reardon, State Lecturer, was present and gave one of his helpful talks on "Lecturers' Problems," in the forenoon. After dinner his able address was along practical lines of work for the subordinate Granges and was most heartily commended by all who heard him. He was asked to talk on the National Grange dispute, but, after a few remarks on the subject, drifted off onto insurance matters, to the disappointment of all who wanted to hear both sides of the question. Some of the principles contended for were stated by a number who believe that the minority is right in most of their beliefs, and was received very cordially. Good delegates to the State Grange were chosen. Difficulties that had come up in some of the Granges were discussed, and recommendations made to those making the mistakes that it would be for the good of the order to avoid such doings in the future. Altogether, the meeting was a very helpful one.—E. GOBSUCH.

Report of Valley Grange Meeting.

After the usual business routine the constitution and by-laws presented by the committee to whom this work was assigned, was adopted. The committee having charge of the Founder's Day meeting, reported that a public meeting had been arranged for. A brief talk on the origin and purposes of the Grange, and what the Grange has done for all farmers and the people, with recitations, music and a masquerade menu for the supper, is to be the finishing touch. The lecture program called out a talk on the successes and failures of this season, one of the very best we have ever had. One of the surprises of this discussion was that there has been more failures with pedigreed seed, especially

corn brought from a hundred miles or more from here, than there has been successes. It was also learned that seed corn grown on bottom land does not do well on upland or prairie. Those that had been growing the pedigreed seed corn for three years said they were going back to the best native seed they could get. It was reported that one farmer who had kept up his experiment, after five years was so well satisfied with the high-grade seed he thus secured that he still plants that variety. The conclusion reached was that it takes several years to acclimate corn, especially when it is brought from one hundred miles north of here. And while this is being done the farmer gets an inferior yield from his land. The first two or three years there is great growth of stalk and a small growth of ear. The next question was: "Does the average farmer clear 6 per cent on the capital invested in his farm and its equipment, and including his labor?" This question brought out much difference of opinion, especially how dependent the farmer is on weather conditions, on the ability to secure help when he needs it to cultivate and care for his crops and on his market facilities. The brothers needed no help to keep up the interest in either of these discussions.—E. GOBSUCH.

More Farmers' Institutes.

Central Kansas Circuit No. 2.—Lyons, December 4-5; McPherson, December 6-7; Great Bend, December 8-9; Wichita, December 11-12; Wellington, December 13-14; Newton, December 15-16; Cottonwood Falls, December 18-19; Emporia, December 20-21. Speakers, Mr. Coon and Mr. Crabtree.

Northeastern Circuit No. 3.—Osaka, December 4-5; Tonganoxie, December 6-7; Effingham, December 8-9; Troy, December 11-12; Hiawatha, December 13-14; Seneca, December 15-16; Horton, December 18-19; Holton, December 20-21. Speakers, Mr. Wheeler and Miss Brown.

Eastern Kansas Circuit No. 3.—Alma, December 4-5; Lawrence, December 6-7; Lyndon, December 8-9; Admire, December 11; Council Grove, December 12-13; Burdick, December 14; Hope, December 15; Woodbine, December 16; Chapman, December 18; Junction City, December 19-20. Speakers, Mr. Hine and Mr. Gearhart.

Central Kansas Circuit No. 3.—Solomon, December 4; Lindsborg, December 5; Geneseo, December 6; Little River, December 7; Raymond, December 8; Sterling, December 9; Nickerson, December 11; Tampa, December 12. Speakers, Mr. Holsinger and Miss Nash.

Southwestern Circuit No. 1.—Cimarron, December 4-5; Lakin, December 6-7; Syracuse, December 8-9; Johnson, December 11; Richfield, December 12-13; Hugoton, December 14; New Ulysses, December 15; Santa Fe, December 16; Garden City, December 18-19; Dodge City, December 20-21. Speakers, Mr. Umberger and Mrs. Simmons.

North Central Circuit No. 3.—Marysville, December 12; Blue Rapids, December 13-14; Frankfort, December 15-16. Speakers, Mr. Miller and Miss Dow.

Experiment in Soil Packing.

The North Dakota experiment station made an exhaustive series of experiments on 24 plots of wheat in 1911. It was found that the moisture in the top 12 inches of soil largely determines the extent of plant growth, the soil below that losing or gaining but little in the course of the season. Also, the cultivation of the soil five times during the growing season increased the amount of moisture in the soil by 211.5 tons per acre, or the equivalent of 1.88 inches of rainfall. This amount of water, if all used for the growing of crops, would produce two bushels of wheat to the acre and would show a nice profit over and above the additional cost of cultivation. The moisture increase in this case is generally considered to be low. The rainfall during the growing season was a little less than seven inches.

BOWSER
 (Sold with or without elevator.)
 Crush ear corn (with or without shucks) and grind all kinds of small grain, and feed hays. Have Conical Shape Grinders. Different from all others.

LIGHTEST RUNNING
 (Our circular talks why.)
 MANDY TO OPERATE
 10 sizes 2 to 25 h. p. Capacity 5 to 200 Bushels.

We Also Make Sweep Grinders
FREE Booklet on "Value of Fertilizers and Manures."
 C. N. P. Bowser Co. South Bend Ind.

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SCHOOL SHOES
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 Look Better - Fit Better - Wear Longer.

YOU'LL appreciate "Tess and Ted" school shoes because four pair will last as long as five pair of ordinary shoes made for children. The better class of merchants everywhere now recognize "Tess and Ted" school shoes as the most satisfactory children's shoes in existence. The reason is that it is a "Star Brand" shoe, and

"Star Brand Shoes Are Better"

"Tess and Ted" school shoes are made in all the different leathers — in high cuts, regular heights and oxfords. There's a style for every age and condition of childhood, from five to fifteen years.

And they are honestly made of good, solid leather. No paper, composition or other substitutes for leather are ever used. The "Star" on the heel insures you better value than you have ever seen in children's shoes.

ASK YOUR DEALER—if he cannot supply you, write for our "Star Brand Magazine." It is full of good reading and household helps and shows 92 styles of "Star Brand" shoes. Your name on a postal card will bring you a copy FREE.

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This Star on every heel.

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Because for lighting purposes nothing approaches it for convenience, safety and efficiency. It has been made possible for farms, no matter where located, to possess the brilliant, ever-ready, white light of electricity by the installation of an Individual Lighting Plant. The cost is small, the continuous benefit immeasurable. Individual Lighting Plants consist of a small gasoline engine, dynamo, switchboard and the famous Storage Battery called

The "Chloride Accumulator"

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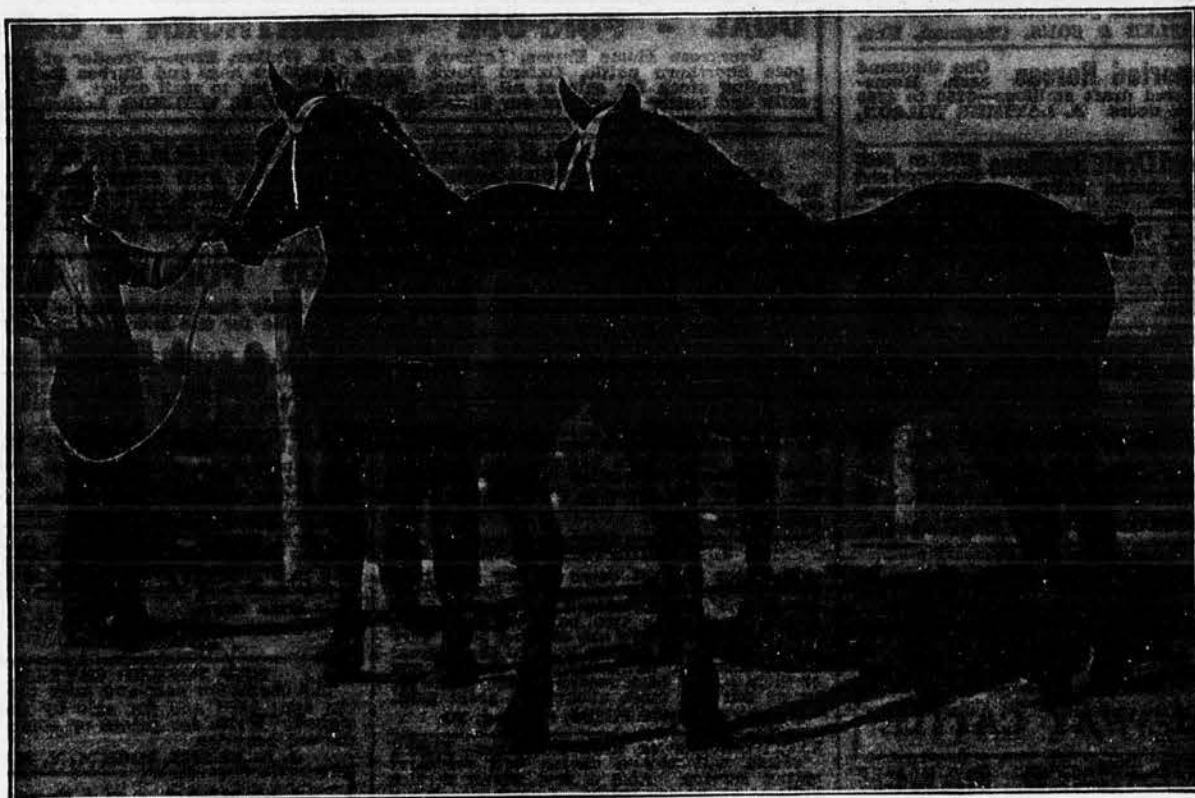
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J. C. ROBISON'S THIRTEENTH ANNUAL SALE OF SIXTY



**Registered
Percheron
Stallions
Mares and Colts**
AT THE
**Whitewater Falls
Stock Farm**
TOWANDA, KANSAS

This sale will include more mature Stallions and Mares, either sired by Casino or bred to him, than have ever been included in any of the former sales. Part of my 1911 show herd, including the Grand Champion Mare, RUTH, and her yearling Stallion will be listed for this sale.

DAUGHTERS OF CASINO AND STATE FAIR CHAMPIONS.

TWENTY STALLIONS, FORTY MARES, PRIZE WINNERS, PROVEN BREEDERS, SONS AND DAUGHTERS OF WORLD'S FAIR WINNERS.

Sale will be held at SALE PAVILION on the FARM, **THURSDAY, DEC. 28, 1911**

Send for catalogue to

J. C. ROBISON, Box E, TOWANDA, KANSAS

AUCTIONEERS—HARRIMAN, SNYDER, ARNOLD, SEELEY.

100 Registered Herefords At Auction Dispersion Sale 100

AT FARM NEAR
ALTA VISTA, KANSAS

**Tuesday,
Dec. 19th, 1911**



The offering is one of the best of the season and will include about 40 Double Standard Poll Herefords, including the Poll Herd Bull, Poll Dandy, and 10 young bulls. The remainder choice females, among them a number of outstanding good cows and heifers. The remainder of the offering consists of 22 cows with calves at foot or bred, 16 yearling heifers, 9 spring heifer calves and 8 young bulls. The offering, taken as a whole, is an extra good one. The herd was established nearly 30 years ago with stock from the very best herds, and no culls have ever remained in the herd for breeding stock. The Poll stock was purchased from the best eastern herds, and are among my best cattle. All of the cattle are young. Last spring I sold off a carload of my oldest cows. The herd is rich in the blood of Anxiety 4th and other sires that have made the breed famous. I have sold my farm, and these cattle will be sold without reserve. Write for catalog. Free transportation to and from farm. Sale starts promptly at 10 a. m.

John W. Naylor, Alta Vista, Ks.

Auctioneer—Col. L. R. Brady.

Poland Bred Sow Sale

**50 HEAD OF BRED
SOWS AND GILTS 50**

SALE TO BE HELD AT ST. JOHN, KANSAS
Saturday, Dec. 16, 1911

I am selling some of my best brood sows, such as



Opal, by Meddler 2nd, a litter sisters to Meddler Chief, grand champion Kansas State Fair, 1909; Sallie Meddler, by Meddler, dam Lady May, by



Chief Perf. 2nd; 1 On the Spot sow, dam by Spellbinder; 1 boar by Meddler's Sunshine; 14 spring yearling gilts by On the Spot and Gem's Spell and out of my herd sows; five have litters by their sides; 10 fall yearling gilts by Gem's Spell, Gem's Thicket, On the Spot and One Price; 7 fall boars by the same sires; 5 spring boars by Short Grass.

Most all the sows and gilts will be bred to King Darkness, our herd boar, for spring litters. This will be an opportunity that comes only once in a lifetime, and we ask farmers and breeders to come and get some of this good seed. Catalogs are ready to mail out. Sale held right in town and everything sold on an absolute guarantee. Come and spend a day with us. O. W. Devine will represent Kansas Farmer. Any bid sent to him will be handled with care. For catalog write

E. J. Manderscheid

ST. JOHN, KANSAS.

Auctioneers: Col. John S. Snyder, P. J. McCormick.

Lamer's Percheron Sale

SALINA, KANSAS

I will sell at Public Auction in my Sale Stables, at Salina, Kan., on Wednesday, December 20, sixty (60) head of Imported and Home-grown Percheron and French Draft Mares and Stallions, consisting of

32 Mares, 2 to 5 years old; 3 Mares "yearlings;" 11 Mare foals; 3 Horse Colts; 6 Stallions, 2 years old; 4 Stallions, "Yearlings;" 1 Belgian Mare.

The above stock is large and growthy, with as much weight, bone, style, action and conformation as you could ask for.

If you are in the market for a first-class Stallion or Mare—the kind to start the foundation for a family of horses and you will always like—don't miss this sale. Each and every one of this consignment was carefully selected by me, and I can assure you that you will not be disappointed after seeing this stock.

SALE DECEMBER, 20th

WRITE FOR CATALOGUE

C. W. LAMER, Salina, Kansas

P. S.—On Thursday, December 21, I will sell 200 head of horses, consisting of work horses, mares and southerners.

Dispersion Sale OF Aberdeen Angus



AT MY FARM, ADJOINING

HIGHLAND, KANSAS,

Tuesday, December 19 5 Bulls, 37 Cows and Heifers

There is no question but what this is the most select lot of cattle ever sold west of the Missouri river. This herd has been a money maker for thirty years. Prior to this sale, a majority of the animals in the herd have been priceless. The most valuable families are represented. There are Blackbirds, closely related to the World's Fair champion; Trojan Ericas, that are equal to anything that ever crossed the Atlantic ocean; Queen Mothers, that have few equals and no superiors; Heatherblooms, that are bred in the purple. The bulls are herd headers, of the top notcher class, and any of them will sire the market topping steer. The herd bull, Duke Bloom 3d 134689, should be inspected by anyone in the market for a tried sire. He promises to be one of the greatest bulls the breed has ever known. The 37 cows and heifers will be found pleasing to the eye, and good, honest workers. Many of the cows have calves at foot, and have been re-bred. If you are in the market for good cattle that wear the stamp of approval, and have made good, come to this sale. You will sure find them. Send for catalog, mentioning KANSAS FARMER. Address

T. J. MCGREARY, Highland, Kas.

Col. Silas Igo, Auctioneer. M. A. Judy, West Lebanon, Ind., Sales Manager.
Highland is 30 Miles Northwest of St. Joseph, Mo., on the St. Joseph and Grand Island Railroad.



J. C. Robison TOWANDA, KANS.

13th Annual Sale of Percheron Stallions and Mares.
60 Head
December 28, 1911. Ask for Catalogue



We Import the Best Bred Stallions Europe Can Produce

Our Percheron, Shire and Belgian stallions are strong and massive, with great quality, style and conformation—with splendid color and dispositions. They are selected with an eye single to the wants of the most critical American buyers. They are stallions that will go into any community and command the best mares, command the men who are the best pay and who take the best care of their stock. Our contract of guarantee is as good as a government bond. Our prices are reasonable. Send for big illustrated catalog and book containing letters from hundreds of satisfied customers.

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Imported and Home Bred Percherons, Belgians and Shires. All Percherons are Registered in the Percheron Society of America.

50—Head STALLIONS AND MARES—50

Including an unusual variety from which to select. All we ask is a chance to show the goods. You'll say the price is right, and buy. Write today.

L. R. WILEY, EMPORIA, KAN.
Breeding Farm, Elmdale, Kan. Sale Barns, Emporia, Kan.

40 STALLIONS AND MARES.

My barn is full of good Percheron, Belgian and Shire Stallions. Priced to sell. I mean business. Come and look them over. If you want good horses, we can deal. My prices are from \$400 to \$1,000. Come and see me before you buy. Then be your own judge. Barn right in town.

Joseph M. Nolan, Paola, Kan.

PERCHERON STALLIONS

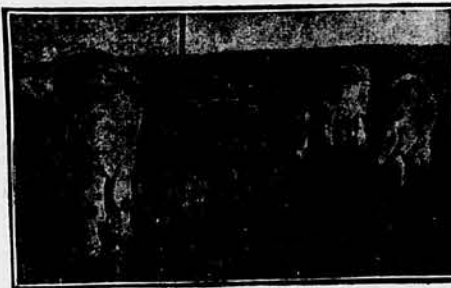
Priced to sell—from yearlings to three-year-olds. All dark colors, heavy bone and large size; plenty of quality. The best of breeding. All registered in Percheron Society of America. Come and see me.

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Imported and home-bred. Will sell our 1911 champion and other prize winners. Write or come. I make good. Mention this paper.

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SAY!

Do you know that fortunes are being made in Registered Jerseys? A bull raised in Missouri sold not long ago for \$10,000. Let me sell you a bull calf from my pure-bred prize winners to build up your herd. I have them from \$50 up. References: Joplin National Bank or any business man in Joplin.
DR. D. R. HILL, Joplin, Mo.

50—PERCHERON STALLIONS AND MARES—50

Bishop Brothers have 25 big boned stallions that weight 1,700 to 2,100 pounds that they can and will sell for less money than any firm in the business, quality considered. Write us what you want.
BISHOP BROS., TOWANDA, KAN.

FIELD NOTES.
Biley County Land Auction.
How would you like to own an improved 80 or 160 acres located within 20 miles of the Kansas Agricultural College? This is possible if you will only take the trouble to investigate. Mr. Edward Kleninger, of

Riley, Kansas, will sell at public auction Thursday, December 14, two eighties, one well improved and one without improvements. A public road separates them and you can buy one or both at your own price, on very easy terms. Write him for full information. These farms are ideal for diversified farming and dairying. Mention this paper when writing.

MAXWELL MASCOTTE

For the First Time in the History of Motor Car Manufacturing
a Real Family Touring Car is Offered for Less than \$1000.

The family man is the real back-bone of the nation, and a car suitable for him must be the popular car of the year. In the Maxwell Mascotte, the leading motor car builders in America have supplied just the car required by the family man and at a reasonable price. Many makers have tried, some have offered low prices, but poor design and material—but this is the first time that a real family car of dignity, character and reputation, has been offered for less than \$1000.

It has been close figuring, but great purchasing power, unequalled manufacturing facilities and quantity production make it possible.

The aristocrat of moderate-priced cars is the well deserved name given to Maxwell cars, because even at comparatively low prices they wear longest, are easy to operate and maintain, and have given universal satisfaction to 47,000 owners.

The Mascotte model bristles with new features, all of which add to the comfort and satisfaction of the buyer.

We have cars ready to show you and some for immediate delivery. Call and see them. Ride in the Mascotte; ask our competitors what they think of it; talk to a Maxwell owner and then compare the Maxwell with any other car selling within \$200 of its price.

Maxwell leadership in touring is proven by its extraordinary victory in the recent Glidden Tour, when it won the Glidden Trophy with a record never equaled

\$980

—finishing as the only perfect score team among 64 of America's best known motor cars after a gruelling 1454-mile journey from New York to Jacksonville. Governor Hoke Smith's personal entry of a Maxwell carrying Georgia's chief executive on the long trip, won the Anderson trophy

with a perfect score — all stamping Maxwell as the American Touring Champion and Maxwell design and construction as ideal for touring purposes.

Maxwell cars have made history by originating many improvements.

Maxwell originated three-point suspension.

Maxwell originated thermo-syphon cooling.

Maxwell originated multiple-disc clutch.

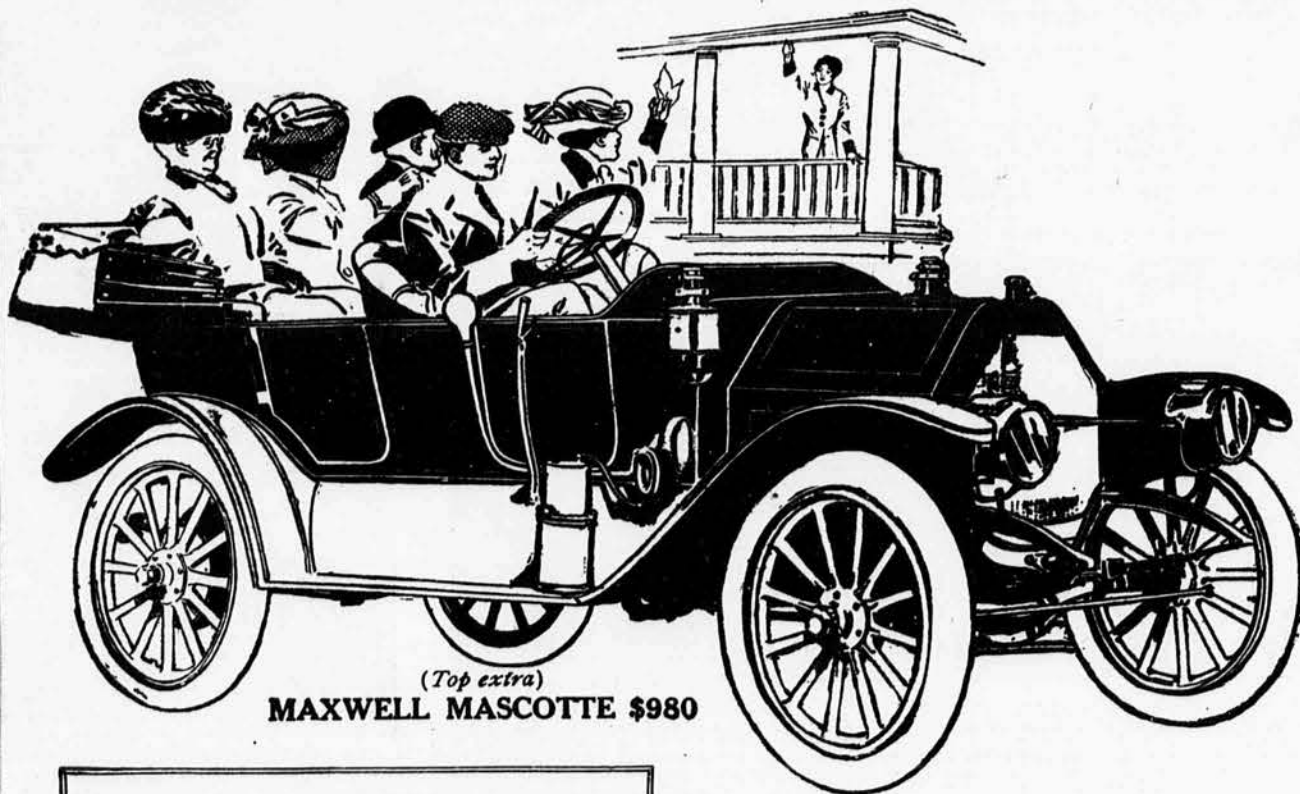
Maxwell made the first metal body.

Maxwell cars ran 10,000 miles without a single stop of the motor.

Maxwell cars are indorsed by 47,000 users, including 15,550 physicians.

Maxwell cars had 768 registrations in New York State in 1905 and 1906 with the official records showing 702 of them registered again this year, 91 per cent all in active use.

Maxwell is the Touring Champion—a title bestowed by the American Automobile Association, when it won the Glidden Tour, the National Touring Contest.



Note These Features

Motor—supplying full 25 hp. Body—ventilated fore-door, flush sides. Transmission—sliding-gear. Ignition—dual magneto and batteries. Wheel-base—104 inches. Clutch—metal multiple-disc. Springs—imported English steel. Brakes—double acting on rear wheels. German steel ball-bearings. Steering Gear—irreversible worm gear. 17-inch steering wheel. Tires—32x3½ inches, Q.D. Finish—blue black. Mascotte gray wheels, white striping. Price—\$980 f.o.b. factory, top extra. With roadsterbody, \$950. Equipment—magneto, generator, two gas lamps, three oil lamps, horn, tool kit, jack, pump, tire repair kit, tool-box, foot and robe rails.

Other 1912 Models

"Special" Touring Car, \$1280
"Mercury" Roadster, \$1150
"Mascotte" Roadster, \$950
"Messenger" Roadster, \$625
"Messenger" Runabout, \$600

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—interesting and thrilling; "How
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